REFLECTIONS OF TWO COLLABORATING EDUCATORS TAKING A
CONSTRUCTIVIST APPROACH TO PROJECT WORK IN AN ELEMENTARY
CLASSROOM

by

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ABSTRACT

Project work has gained a prominent place in research for its significant educational potential (Blumenfeld et al., 1991; Fallik et al., 2008). Teachers, however, have not been providing project work with a prominent place in the elementary classroom (Blumenfeld et al., 1991; Fallik et al., 2008; Rogers et al., 2010; Tse, Lam, Lam, & Loh, 2005). To encourage and support teachers in practicing Project-Based Learning (PBL), we need to understand what motivates teachers to enact PBL, the challenges they face in doing so, and ways to support teachers in overcoming these challenges. To examine teachers’ lived experiences in enacting student-centered project work, the current study used the method of participatory action research (PAR). This method included the active participation of a teacher (Megan) and me (the principal researcher) in the design, enactment, and reflection upon a constructivist, whole-class project in an eastern Ontario Grade 5 classroom. The study was structured around two research questions: (1) what did we perceive as challenges and benefits of organizing and enacting a student-centered project, and (2) how did we perceive that our collaboration in organizing, enacting, and reflecting upon this project impacted our thinking and practices with regard to project work? Megan’s and my reflections were collected over the course of the project through two semi-structured interviews, diary writings, a pre-structured planning journal, and three semi-structured discussions. Megan and I perceived project work as beneficial to students’ engagement and learning. Enacting the project was challenging, as we lacked the management and organizational skills to enact project work efficiently, and we possessed a strong desire to control the direction of the project. Megan and I were further
challenged by students’ lack of skills and comfort with the project’s demands and the lack of school support and time we needed for the project. Collaboratively experiencing and reflecting upon the project demonstrated how essential these challenges were in increasing Megan’s and my comfort, appreciation, understanding, and skills in enacting project work. Based on these findings, the study encourages teachers to collaboratively design, experience, and reflect upon project work in the context of their classrooms.
ACKNOWLEDGMENTS

Ever since I was six years old, I have wanted to become a teacher. Ever since I became a teacher, I have wanted to become a good one. Becoming a good teacher, however, is a wish that cannot be fulfilled without the help of others. I would like to first thank my parents, Yme and Ria, for whom the constructivist approach I seek to adopt as a teacher, has always been a natural way to parent. I thank my sister, Marieke, for being the one I can trust with my greatest fears and ambitions. I am forever grateful to my husband, Mike, as his unwavering belief in my abilities gave me the confidence to persist. I thank his parents, Nicolas and Audree, for challenging my ideas in the initial stages of the project and taking care of my children, Maeve and Rhys, during the final stages of writing my thesis.

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CHAPTER 1: INTRODUCTION

For the last 10 years, I have taught in a variety of elementary schools in the Netherlands and in Canada. My fascination with project work began as I was teaching students ranging from age 4 to 12 in the Netherlands in a school that practiced an experience-based program. This program stressed the importance of a rich and safe learning environment in which all children were stimulated to take initiative and explore topics of their own interest. Teachers offered the children tasks that were tailored to students’ abilities and that were hands-on. Circles, celebrations, contract work, project work, and ‘free activities’ were all common work forms in this program (http://www.ervaringsgerichtonderwijs.nl). During these years, I became aware of the high quality of work students delivered along with the high level of motivation they displayed when they were engaged in project work. As a result, I started developing ways to structure project work more towards students’ interests and tried to find ways to ensure project work’s potential applied to all learners.

I came to Canada in 2004 and, due to my experience with enacting project work, I was hired as a Project Teacher for a private Montessori school in Ontario. The principal of this school was eager to integrate project work into the junior elementary curriculum for Grades 1-3, but did not have the resources and expertise to initiate project work. As is the case in most Montessori classrooms, the enriched environment, freedom of choice, authentic tasks, and hands-on learning were key aspects of this school. After a year of developing students’ research skills, project work resources, and project work models, I obtained my Montessori Certificate and became the elementary school teacher for Grades


1-3 (mixed age group). During the following two years, I worked with a co-teacher to place project work at the core of the curriculum, to organize several large class projects, and to guide children through their individual projects. Projects, although teacher-initiated, were flexible to students’ interests and abilities, included a variety of media, and focused on content matter as well as on students’ abilities to conduct research-like processes. During these years, my fascination with project work grew, and my skills in enacting the concept improved. At the same time, however, project work presented challenges to me that seemed hard to overcome. In particular, I experienced how dealing with pressure from parents and school administrators to focus on students’ standardized test results and the lack of guidance from either other school personnel or print resources in how to organize project work effectively prevented me from taking on a student-centered approach to project work. These challenges ultimately inspired me to initiate this study as an attempt to better understand the various aspects of project work that encourage teachers to and prevent teachers from enacting project work in their classrooms and to improve my own abilities in enacting project work in a manner that addresses its underlying principles.

**Rationale**

According to research findings over the last decades, my experiences with project work are not unique. Many teachers report wanting to take on a student-centered approach to teaching, but continue to practice in a traditional manner (Blumenfeld et al., 1991; Brooks & Brooks, 1999; Cuban, 2004; Marlowe & Page, 2005). Therefore, if carried out at all, project work often becomes teacher-directed or not directed at all,
resulting in shallow learning experiences for students and ultimately a waste of precious time (Blumenfeld et al., 1991; Polman & Pea, 2001). Transforming teachers’ traditional practices, however, is a difficult task (Richards, Gallo, & Renandya, 2001). Many attempts to train and support teachers in the enactment of project work have failed. These attempts primarily failed because they ignored the complexity of teaching, neglected to relate theory to practice, and did not provide continuous support for teachers (Richardson, 1990; Sarason, 1993; Thomas, 2000). Successful attempts have been described, however, where teachers learned about project work while *experiencing* it in their own classroom, *reflecting* systematically upon those experiences, and *collaborating* with other professionals (Fallik, Eylon, & Rosenfeld, 2008; Marx, Blumenfeld, Krajcik, & Soloway, 1997). Especially when collaboration amongst teachers includes support and time to discuss, problem solve, and reflect on experiences, practices, and beliefs with others and is founded on shared goals, trust, and respect (Nelson, 2008; Solomon, 2003), collaboration can facilitate successful planning and enactment of project work (Krajcik, Blumenfeld, Marx, & Soloway, 1994; Marx et al., 1997). Based on this concept of collaboration, a classroom teacher (Megan) and I planned and organized a whole-class project and reflected systematically on our experiences throughout this process with the objective to change our thinking, and improve our practices of project work in more constructivist ways.

**Purpose of the Study**

The purpose of this descriptive study was to gain a greater understanding of a classroom teacher’s and my lived experiences in enacting a student-centered project in an
elementary classroom. The main research question, therefore, was structured around our perceptions of the project. As the study emerged, however, it became clear that Megan’s and my partnership in enacting the project impacted these lived experiences just as much as the project did. Accordingly, two research questions were used to frame the study:

1) What did we perceive as challenges and benefits of organizing and enacting a student-centered project?

2) How did we perceive that our collaboration in organizing, enacting, and reflecting upon this project impacted our thinking and practices with regard to project work?

The study contributes to educational knowledge two primary ways. First, the study supplements current research on project-based learning as little is known about teachers’ experiences in enacting project work on their own, and the challenges and benefits they experience when doing so (Thomas, 2000). Moreover, by describing Megan’s and my thoughts and experiences in enacting project work, the study becomes relevant and accessible to other teachers and allows them to gain insights into what student-centered project work looks like in the classroom, hear the experiences of other teachers, and assess whether and how project work would be useful in their classrooms (Marx et al., 1997; Sarason, 2002; Thomas, 2000).

Second, this study may contribute to other studies that support research based on the participatory action research (PAR) concept. Megan and I were able to experience the enactment of project work in the classroom as teachers as well as researchers, reflected upon that process together, and supported each other as professionals in our objective to improve our understanding and practices in project work.
Theoretical Framework

Project work is strongly connected to constructivist perspectives of learning (Katz & Chard, 2000; Marlowe & Page, 2005; Wrigley, 1998). Thus to understand project work’s underlying principles, we need to look at constructivist theories and how they relate to classroom teaching. Explaining constructivism is a difficult task; although we talk about constructivism as one theory, the title is used mostly as an umbrella term for many different views of how people construct knowledge (Duffy & Cunningham, 1996). The common theme of constructivist theories is that knowledge does not exist independently from the learner. Instead, all learners construct their own knowledge through personal experiences and subsequent reflection upon those experiences. This dynamic, continuous process happens within the framework of a person’s existing cognitive structures, while at the same time that framework itself is re-organized according to new lessons learned (Fosnot, 1996).

While studying constructivist theories, I was mainly influenced by the educational philosopher John Dewey (1859 – 1952) and his colleague William Kilpatrick (1871–1965). Dewey supported constructivist theories and emphasized experience as the main way to encourage thinking (Dewey, 1916; Glassman, 2001). For Dewey, educators are not meant to integrate social history in students’ minds. Instead, he felt educators are responsible for teaching students skills to change social history (Dewey, 1954). Dewey, therefore, strongly supported inquiry-based learning that encourages students to question, hypothesize, and experiment (Glassman, 2001). Dewey viewed contradictions and errors that conflicted with pre-existing ideas as valuable moments in which schemata could be adapted (Dewey, 1938). To facilitate and assist this adapting process, Dewey stated we
should offer students challenging, open-ended investigations within realistic and meaningful contexts (Dewey, 1933; Duffy & Cunningham, 1996). One way of initiating these investigations is by observing students while they engage in particular activities. According to Dewey, activities chosen by children often indicate their interests in a central theme. This topic could then be explored through a process of inquiry, a process that would be facilitated by the teacher (Dewey, 1916). In his argument for allowing students to follow their interest through inquiry, Dewey further suggested that these investigations be structured as projects (Dewey, 1933). Projects, according to Dewey, would have to actively involve students, be based on students’ real-life experiences, and take a considerable amount of time to explore a concept in depth to enable students to make relationships and relevancies between new observations and their previous experiences (Dewey, 1933; Marlowe & Page, 2005). Additionally, dialogue, representation, and reflection should facilitate the students in communicating and reforming their ideas as well as organizing and generalizing these ideas across experiences (Brooks & Brooks, 1999; Fosnot, 1996).

Following Dewey’s philosophy and principles, William Kilpatrick developed the Project Method in 1918, which promoted students to investigate aspects of their environment through project work (Kilpatrick, 1918). In describing project work as a purposeful act, Kilpatrick urged teachers to respect students as autonomous, self-directed people and stressed the importance of allowing students to structure research around personal interests and goals (Beyer, 1997; Kilpatrick, 1918). Kilpatrick found that group projects that included students in planning, conducting, and evaluating projects helped them to develop a deep understanding of concepts instead of simply reciting materials
Kilpatrick believed that by letting children use both hands and minds to examine and experiment, they would come up with appropriate suggestions to complete tasks, and test these suggestions to achieve personal goals. In doing so, children would develop a strong motivational power to learn (Kilpatrick, 1918). Kilpatrick further believed this active learning process should take place in the social context of a classroom to allow students to share and construct knowledge conjointly. By utilizing the social context of project work, Kilpatrick argued that moral education would be provided and character building would be encouraged. Kilpatrick described how it was the “special duty and opportunity of the teacher to guide the pupil through his present interests and achievement into the wider interest and achievement demanded by the wider social life of the older world” (p. 12). This synergy between the students’ interest and the wider social environment provided Kilpatrick with his strongest argument for project work. By providing students with the opportunity to determine their own purposes and to collaborate with others to accomplish those purposes, project work would encourage students to be responsible, moral citizens in their future societies (Kilpatrick, 1918).

**Overview of the Thesis**

This thesis consists of 7 chapters. Chapter 1 provides a brief overview of the study, introduces my rationale and purpose of the study, and describes constructivist theory underlying project work from a Deweyan perspective. Chapter 2 consists of a literature review that describes defining features of project work and reviews research on the effectiveness of project-based learning and research-identified benefits and challenges of project-based learning for teachers and students. Additionally, research on teacher
learning in relation to the adoption and enactment of project work is described. Chapter 3 includes a methodology that details the study’s use of the concept of participatory action research and its implications for participant selection, role of the researcher, data collection, and data analysis. The study’s results are described in Chapters 4, 5, and 6. These chapters represent the three phases of the project: the planning phase, the investigation phase, and the culmination phase. Each results chapter includes a description of the specific activities that were organized during that phase, along with teacher-related, student-related, and school-related benefits and challenges as perceived by Megan and me. Chapter 7 describes my interpretation of the results and connects these interpretations with research on project-based learning and teacher learning. A final section in this chapter addresses the limitations of the study along with suggestions for future research and practice.
CHAPTER 2: REVIEW OF THE LITERATURE

In the past quarter of a century, educational researchers and policy makers have called for a focus on the development of students’ deep understanding, higher thinking skills, and problem solving skills (Krajcik, McNeill, & Reiser, 2007; Perry, Phillips, & Dowler, 2004). Project work, along with other innovative, complex, and authentic tasks, has been shown to support these goals (Krajcik, Blumenfeld, Marx, & Soloway, 1994; Perry et al., 2004; Perry, Hutchinson, & Thauberger, 2008). Teachers who initiate project work, however, tend to face challenges in enacting it effectively in their classrooms (Fallik, Eylon, & Rosenfeld, 2008; Tse, Lam, Lam, & Loh, 2005). The following literature review identifies key features of project work, describes benefits and challenges of implementing it, and discusses ways to support teachers in giving project work a more prominent place in their classrooms.

Key Features of Project Work

Project work, like Dewey’s views on knowledge construction, is based on the conviction that learning by doing, discussing in groups, and revisiting ideas and experiences are superior ways of gaining a better understanding of one’s environment (Gandini, 1997; Katz & Chard, 2000; Krajcik, Czerniak, & Berger, 2002). Although these convictions offer us a philosophy of learning, they do not provide clear instructions for teaching (Arasian & Walsh, 1997; Yilmaz, 2008). Project work, therefore, has been subjected to many interpretations since Dewey’s writings (Fallik et al., 2008; Thomas, 2000). In an effort to define project work, Gültekin (2007) described project work as “a
learning approach based on students working for a period of time in order to intensively investigate the real world issues or problems in an interdisciplinary approach so as to produce something concrete through individual efforts or pair-work” (p. 96). Like Gültekin, many definitions of project work include the word *approach* instead of model or method to emphasize how project work allows for flexibility and responsiveness to students’ input, cultural environment, and experiences (Helm & Katz, 2001; Katz & Chard, 2000; Krajcik, Blumenfeld, Marx, & Soloway, 1994). While these definitions of project work leave much room for interpretation, they do identify certain core criteria for project work. Thomas (2000) summarized these key features of project work, which since then have been widely applied in research related to PBL [Project Based Learning]:

1) *The project’s topic is central to learning.* In project work, projects represent the central learning strategy that helps students learn about concepts. Projects are not unrelated to the curriculum, nor are they there solely to enhance or illustrate the curriculum. Instead, the project becomes the curriculum (Thomas, 2000). It is via the project that students gain knowledge about disciplines and achieve learning goals.

2) *The project evolves around driving questions* that encourage students to investigate certain concepts (Blumenfeld et al., 1991; Fallik et al., 2008; Rivet & Krajcik, 2002; Thomas, 2000). Unlike tasks, units, or themes, project work structures learning around these purposeful questions. All the activities and investigations that are done throughout a project need to contribute to answering these questions (Blumenfeld et al., 1991; Katz & Chard, 2000).

3) *Students are engaged in in-depth investigations that allow them to construct their own knowledge,* usually done by a small group, the whole class, or an individual
(Katz & Chard, 2000). These investigations engage students in planning, designing, and conducting real-world research, and encourage them to collect and analyze data and draw inferences from those data (Rivet & Krajcik, 2004; Thomas, 2000).

4) There is an emphasis on student input and autonomy. In fact, projects are student-driven to a large degree. Students make decisions throughout all stages of the project, from selecting the topic to designing the project to presenting results. Although teachers may still initiate topics, projects are founded on students’ interests (Helm, 2004; Katz & Chard, 2000; Solomon, 2003; Thomas, 2000).

5) Project work needs to be authentic and include complex questions that are relevant and meaningful to students (Buck Institute of Education, 2009). Authenticity implies responsiveness to students’ real-world environments, interests, backgrounds, and lived experiences while incorporating concepts from several other disciplines (Blumenfeld & Krajcik, 2006; Fallik et al., 2008; Thomas, 2000).

In addition, several studies suggest two other defining features of project work:

6) There is an opportunity for collaboration. Projects need to allow students to negotiate, solve problems, and encourage students to provide, accept, and integrate feedback (Gültekin, 2007; Marx et al., 1997; Solomon, 2003).

7) Projects result in final products. These products arise from the process of investigation and represent student understanding in a variety of ways. The goal of these artifacts is to allow students to share their new knowledge with others and to offer the opportunity for students to give and receive feedback (Blumenfeld et al., 1991; Clark, 2006; Gültekin, 2007; Helm & Beneke, 2003).
One example of an approach to project work adhering to these criteria is Reggio Emilia. Initiated in Italy after World War II, Reggio Emilia offers a well-known and highly successful project approach to learning (Hewett, 2001). This approach assumes each child has the readiness, ability, curiosity, and interest to construct his or her own knowledge (Gandini, 1997; Hewett, 2001).

Where the Reggio Emilia approach uses an emergent curriculum design based on projects that derive from students’ interest, North American public schools need to adhere to a predetermined curriculum. Bound by national standards, basing project work solely on students’ interests and questions becomes more challenging (Mitchell, 2008). Strongly inspired by Kilpatrick’s project method and later the Reggio Emilia approach, Katz and Chard (1989/2000) developed a constructivist approach to project work known as the Project Approach. The goal of Katz and Chard’s project approach was to offer children a student-centered approach to learning in which students were allowed and encouraged to construct their knowledge through investigation and reflection while still keeping national standards in mind (http://projectapproach.org). Consistent with project work’s key features, Katz and Chard do not offer a scripted method or a series of steps to follow. Instead, their approach offers a flexible framework that encourages teachers to think through the planning and enactment of project work, basing decisions on the constructivist goals underlying their project as well as ensuring curriculum standards are being met (Mitchell, 2008). This framework generally divides project work into three phases. The first phase, referred to as the planning phase, consists of selecting a topic based on standards and children’s interests and forming driving questions that will guide the investigation. The investigation phase follows, in which students investigate
subtopics, often in groups, that are connected with the driving questions and the main topic of the project. The last phase of project work, also referred to as the *culmination phase*, includes an event or activities that summarize the findings of the investigation and allow for sharing these findings with others (Helm & Beneke, 2003; Katz & Chard, 2000). Throughout all three phases, students are involved in making decisions about the design, enactment, and representation of the project while they learn through first-hand observations, hands-on experiences, and systematic reflection (Katz & Chard, 2000).

**Benefits of Project Work**

Successful accomplishments of project-based learning like the Project Approach have triggered many studies to focus on the justification of PBL in the classroom (Katz & Chard, 2000). Much research has been done, for example, to examine the effect of PBL on student motivation. Project work is structured around students’ questions, lives, experiences, and abilities, and allows students to have control over their own learning process (Meyer, Turner, & Spencer, 1997; Perry, Philips, & Dowler, 2004; Katz & Chard, 2000). These key characteristics of project work have been shown to be important in increasing students’ level of engagement, self-confidence, and intrinsic motivation to learn (Chard, 2001; Deci & Ryan, 2000; Howard, 2000; Meece, Anderman, & Anderman, 2006). This increase in students’ motivation can be found across a variety of age groups, ability levels, and school settings. For example, Belland, Ertmer, and Simons (2006) investigated PBL among middle-school students with special needs. Students in three classes worked on an accessibility unit for 24 weeks with their teachers who were, although experienced, not accustomed to the concept of PBL. By using maximum
variation sampling, six students were selected from these three classes and engaged in 20- to 30-minute open-ended interviews along with their teachers (n=3). These interviews were not conducted until a month and a half after the unit. Interview data were supported, however, by triangulation with classroom observations and student products. Students, as well as their teachers, reported an increase in students’ self-esteem, compassion, and an increased engagement that helped students stay on task. In a similar vein, Brush and Saye (2008) focused on two secondary school history teachers while they implemented a multimedia problem-based civil rights unit for students (n=45) in their 11th grade classrooms. The history unit was fairly channeled, and time was limited to 10 days, of which only 5 days were spent on investigation. Despite the limited timeframe, classroom observations, observations of student presentations, and student and teacher interviews indicated that students perceived the use of primary resources, multimedia, and the opportunity for dialogue increased their appreciation for the history unit, helped them understand and empathize with the historic events, and increased their motivation to learn about these events.

Measuring project work’s effectiveness on motivation and academic achievement in an elementary setting can be found in Gültekin (2007). Gültekin examined fifth grade students’ learning in a project-based science class by using experimental research including a pre- and post-test for control and treatment groups. Additionally, Gültekin used 5- to 10-minute, semi-structured interviews with students (n =23) and their teacher to collect data on students’ engagement and motivation to learn. Interview data, coded by Gültekin and an independent researcher, revealed that students, as well as their teacher,
reported an increase in the level of enjoyment of learning, as well as an appreciation of what students were learning.

In addition to project work’s potential to increase students’ engagement and motivation to learn, research focusing on the effect of project work on students’ academic learning has supported arguments for the use of PBL, particularly when compared to a more teacher-centered approach (Blumenfeld et al., 1994; Fallik et al., 2008; Ladewski et al., 1994; Marx et al., 1994, 1997, 2004; Rivet & Krajcik, 2004; Schneider, Krajcik, Marx, & Soloway, 2002). Research comparing PBL with transmission educational models has shown how students who engaged in project work not only remembered facts and content better, but were better able to apply that knowledge in different contexts as well. Additionally, students who were engaged in project work performed better on academic tests than students who were not involved in project work (Fallik, Eylon, & Rosenfeld, 2008; Gültekin, 2005; Rivet & Krajcik, 2004). For example, Schneider et al. (2002) examined the academic achievement of 10th and 11th grade students involved in Project Based Science [PBS] \( n = 142 \) on a National Assessment of Educational Progress science test. Schneider et al. compared the scores of the student sample to national averages on 34 items of this national science test. The PBS student sample scored significantly higher compared to national averages on more than half the items, particularly on constructive response items that required students to extend their thinking. When compared to national subgroups that usually score higher on tests, like middle-class and white students, the PBS student sample still outscores the national sample on almost half the test items. Because the authors did not conduct a pre- and post-test, results can not be accredited directly to the project. The study did, however, demonstrate that
students engaged in the project did just as well as or better than national averages, leading the authors to believe PBS students were not in the least disadvantaged when submitted to large-scale testing.

Project work, however, goes beyond students’ ability to retain information and do well on tests (Hmelo-Silver, 2004). Project work encourages students to hypothesize; collect, analyze, and interpret data; and construct artifacts. Students need to formulate questions, make predictions, design plans, and communicate ideas (Blumenfeld et al., 1991; Katz & Chard, 2000). Research has found evidence of how complex tasks like project work tend to facilitate the development of metacognitive skills like problem-solving, selecting appropriate strategies, and evaluating progress (Brown & Campione, 1996; Krajcik et al., 1994; Perry & VandeKamp, 2000, Perry et al., 2004, 2008; Pintrich, 2000; Zimmerman, 1990). For example, Sungur, Tekkaya, and Geban (2006) measured the effect of project work on students’ academic achievement and performance (n = 61) on a biology unit by randomly assigning students to a control group or experimental group. Both groups completed a pre-test, showing no significant differences between the two groups. The same biology teacher taught both groups; however, the control group received traditional instruction whereas the experimental group received problem-based learning. Although the authors’ description of the approach and content of these two groups was limited at best, on the posttest, the experimental group scored significantly higher in terms of academic achievement and performance compared to the control group. Particularly, students in the experimental group were outperforming students in the control group in selecting, organizing, and utilizing relevant information; constructing their own knowledge; and drawing accurate conclusions.
Metacognitive or higher thinking skills include self-regulated learning skills such as self-reflection and monitoring, setting goals, planning, and accepting responsibility (Katz & Chard, 2000). Project work tends to promote the development of these important life skills, allowing students to take ownership over their own learning, focus for long periods of time, overcome obstacles, and strive for mastery. Perry, Philips, and Dowler’s (2004) regression analysis of student teacher and mentor data, for example, indicated a strong predictive relationship of complex tasks that included multiple goals and processes, offered multiple ways to construct products, were meaningful to students, and were extended over time. These tasks offered opportunities for students to make choices, control challenges, self-evaluate their progress, and collaborate with others ($R^2 = .582$, $p < .000$). Although the number of participants was low ($n < 30$), the researchers supported their results by adding a detailed analysis of running records that described how these complex tasks and learning opportunities presented themselves for students in two different classrooms.

Other life skills are promoted during project work as well. The collaborative aspect of project work encourages students to develop social skills as children take on a project together and assume responsibilities in a team (Katz & Chard, 2000). As children learn to communicate, work together, resolve conflicts, listen to others, and coordinate efforts, project work encourages students to develop communication, leadership, and collaboration skills while increasing students’ cognitive learning (Hmelo-Silver, 2004; Holst, 2003; Schmidt & Moust, 2000). Project work allows for socialization and collaboration outside of the classroom as well. Parents and communities around the school can be involved whether it is by volunteering, working with children at home, or
going on field trips. Allowing for socialization, collaboration, and interaction between peer groups and families can have a positive influence on children’s academic success, social-emotional well-being, and motivation to learn (Catalano et al., 2003; Fan & Chen, 2001). For example, a case study by Chin and Chia (2006) investigated how 39 Grade 9 biology students (all girls) handled a problem-based project about food and nutrition while they worked in groups over the course of 18 weeks. Data collection included observations, field notes, student-written documents, audio and video tapes of students engaged in project work, and interviews of group leaders at the beginning and end stage of the project. Results clearly described how students, while they struggled to select an appropriate subtopic, ask relevant questions, and choose appropriate strategies to find information, were facilitated by their collaboration with their peers, friends, and family in creating new ideas, in motivating them to learn more about their topics, and helping them to overcome these challenges.

**Challenges of Project Work**

Although many benefits of enacting project work have been described, project work’s potential can only be realized through teachers implementing it effectively into their classrooms (Blumenfeld et al., 1991; Hmelo-Silver, 2004; Hmelo-Silver, Duncan, & Chinn, 2007; Meyer, Turner, & Spencer, 1997; Tali et al., 2006). However, despite project work’s record of increasing students’ learning and motivation, many teachers do not make project work part of their common teaching practices (Fallik et al., 2008; Park Rogers, Cross, Gresalfi, Trauth-Nare, & Buck, 2010). Several factors seem to deter teachers from enacting complex, student-centered tasks like project work.
First, like any other reform endeavour, changing teaching habits towards a more student-centered approach to learning may be met by reluctance based on teachers’ well-ingrained beliefs and experiences (Brooks & Brooks, 1999; Park Rogers et al., 2010). Many teachers were never taught in project-based learning environments, nor have they been trained in dealing with concepts like project work (Brooks & Brooks, 1999). Years of experience in traditional school settings have made many of those teachers view teaching as a way for students to gain and retain knowledge, not to construct knowledge (Borko & Putnam, 1996; Brooks & Brooks, 1999; Park Rogers et al., 2010; Thomas, 2000). In the teacher-centered and structured classroom environments of these teachers, changing from a transmission model of education to encouraging investigations and inquiry is not easily achieved (Blumenfeld et al., 1991; Brooks & Brooks, 1999; Clark, 2006; Dori, Tal, & Peled, 2002; Taitelbaum, Mamlok-Naaman, Carmeli, & Hofstein, 2008; Van Driel, Bijaard, & Verloop, 2001).

Even when teachers report that they support the constructivist principles underlying project work, teaching habits tend to be so ingrained that they become hard to change (Brooks & Brooks, 1999). For example, Li (2011) studied the perceptions and practices of kindergarten teachers regarding the implementation of project work. Principals and kindergarten teachers (n = 129) filled out questionnaires, and video-recordings of 10 kindergartens were studied. Additionally, Li examined data resulting from semi-structured post-observation interviews. Almost all teachers (95%) felt that taking a project approach to learning was beneficial for students’ learning. When it came down to their teaching practices, however, many of them held on to their original ways of teaching. For example, teachers were highly concerned with planning and preparing for
tasks and tended to teach according to a detailed lesson plan on their desks rather than listening to their students’ suggestions. Interactions between teachers and students tended to consist of the teachers delivering information and the students needing to answer questions correctly.

Another factor discouraging teachers from enacting project-based learning lies in the role of the teacher during a student-centered project being distinctly different from a teacher-centered approach to teaching and learning (Katz & Chard, 2000; Schneider, Krajcik, & Blumenfeld, 2005). During project work, teachers have to become learners along with their students and guide and facilitate students’ construction of knowledge and investigation; scaffold instruction; model, encourage, and coach students; and teach strategies for thinking and problem solving (Hmelo-Silver et al., 2007; Mergendoller & Thomas, 2001; Polman & Pea, 2001; Schneider, Krajcik, & Blumenfeld, 2005). Furthermore, teachers need to continuously listen and interpret the understanding of their students throughout the project to plan for ongoing activities and assessments (Avargil, Herscovitz, & Dori, 2011).

The role of the teacher during project work and the specific teaching skills this role requires have challenged many teachers. For example, So and Kim (2009) examined how pre-service teachers \( n = 97 \) applied their knowledge about PBL in designing a collaborative lesson in their subject area with the goal of integrating technology. The authors used student surveys to identify students’ understandings, difficulties and misconceptions of ICT and PBL as well as students’ final lesson plans to understand how students had applied their ICT and PBL knowledge in integrated lesson plans. Lesson plans revealed that students used technology merely as a way to deliver content, rather
than as an instructional tool. Furthermore, lesson plans evidenced difficulties in selecting problems for investigation that required higher thinking skills, and in understanding how much scaffolding was appropriate. The results of the survey confirmed that students perceived creating authentic problems and their personal lack of ICT skills and scaffolding skills to be challenging factors of PBL, along with PBL’s extensive time requirements. Avargil, Hersovitz, and Dori (2011) examined teacher challenges while implementing a high school chemistry module using a context-based design that aimed for the development of students’ deep understanding and higher order thinking skills. A focus group of eight teachers participated in teaching the module. Teachers were interviewed about perceived advantages and difficulties of their approach and their experiences in teaching for a deep understanding of concepts and creating assessments. Additionally, teachers were observed in their classrooms two to three times, while the assignments they created for their students were collected. Results of the interviews and classroom observations indicated that teachers had trouble moving from their role as the expert to discussing topics beyond their specific subject area. For example, when teachers felt unsure of how to answer students’ questions, the questions were dismissed. Furthermore, half of the teachers did not develop assignments that encouraged students’ thinking skills. Teachers further presented difficulties in assessing students’ higher thinking skills and either created assessments that reflected content knowledge only, or asked the researchers to design assessments for them.

Adding to the specific skills project work demands from teachers are classroom management skills that allow for students to work collaboratively and constructively (Mergendoller & Thomas, 2001). Many teachers have trouble organizing group work as
they struggle to compose groups so learning and communication are facilitated. They need to supervise several groups at the same time, while encouraging and guiding groups in their dialogues and problem solving. As the noise level and movement in class increases during this collaboration, many teachers feel they lose oversight of what their students are doing and become eager to return to a more classical ‘one size fits all’ approach. For example, Marx et al. (1994) described teacher development in case studies of 10 middle school teachers and one elementary school teacher while enacting and reflecting upon the same 6-8 week-long science projects enacted in their classrooms.

Teachers worked together with personnel from the University of Michigan who provided them with information on the theoretical background of PBS, features and challenges of PBS, project content and activities, and technology integration. Teachers’ reflections were collected by means of journals and written case reports. Additionally, the researchers videotaped classroom sessions up to 4 times a week and interviewed each teacher before and after the projects. All teachers participating in the research reported to be uncomfortable with letting go of control. As teachers seemed to believe students’ cognition could be controlled by providing students with order and similar tasks, their classroom practices presented little evidence of students getting the freedom and guidance to investigate concepts independently.

Further discouraging teachers to adopt new approaches to teaching is the lack of support from the broader school community to implement tasks like project work (Lam, Cheng, & Choy, 2009). Instead of focusing on deep understanding and following students’ interests, teachers feel pressured to cover curricula and improve standardized test results (Dresden & Lee, 2007; Helm & Beneke, 2003). For example, a study by
Moon, Brighton, Jarvis, and Hall (2007) examined the impact of standardized testing programs on schools, teachers, and students. They divided their study into two phases: phase one included a questionnaire about beliefs and practices of elementary, middle, and high school teachers, resulting in a total of 2097 questionnaires being returned. Phase two included interviews in focus groups of 3 to 5 people (21 people in total), including teachers and students. Results from the questionnaire as well as the focus groups demonstrated how teachers reported experiencing pressure for their students to perform according to national standards, and how strongly this pressure impacted their decisions in what and how they taught.

Like the participants in Moon et al. (2007), many teachers believe that meeting standards and project work are two separate issues that cannot be combined (Fallik et al., 2008; Tretten & Zachariou, 1997). While current research contradicts this view and emphasizes how standards and project-based learning can co-exist (Mitchell et al., 2009), combining the two still presents teachers with several challenges. For example, the order in which project topics emerge might be different from the order in which they are presented in curricula (Krajcik, McNeill, & Reiser, 2008; Sherin, Edelson, & Brown, 2004). Furthermore, project work’s focus on deep understanding often goes beyond the knowledge required by standards (Krajcik, McNeill, & Reiser, 2008; Schneider, Krajcik, & Blumenfeld, 2005). Although exceeding standards would be a positive aspect of project work in itself, project work’s quest for deep understanding and exploration is time-consuming. As students need to investigate and the teacher needs to observe, reflect, and plan to link learning to pre-determined targets and be responsive to students’ learning and interests, project work tends to take time away from other teaching activities (Katz &
Chard, 2000; Marx et al., 1994; Solomon, 2003). With teachers’ schedules already overloaded with predetermined curriculum activities, the time to explore complex tasks like project work becomes scarce (Simons, Klein, & Brush, 2004).

Lastly, although key characteristics of project work have been shown to increase students’ motivation, there is evidence that project work can also be demotivating, and sometimes detrimental, to students’ learning (Kirschner, Sweller, & Clark, 2006; Seiler, Tobin, & Sokolic, 2001). Project work requires students to control their own learning through applying social skills, higher order thinking skills, and self-regulated learning skills. In teacher-directed classroom environments where instruction relies on textbooks and worksheets, whole-class activities, separated subject areas, and assessment practices that focus on external rewards, many students may have not developed the skills required to benefit from project work’s potential (Blumenfeld et al., 1991). In these cases, instead of increasing students’ motivation and understanding of a certain concept, project work can make students confused and frustrated and gain little more than superficial learning experiences (Blumenfeld et al., 1991). For example, in a study related to Marx et al. (1994) at the University of Michigan, Krajcik et al. (1998) described a case study of eight middle school students during two science projects, taught by two different teachers. The researchers collected data over the course of the projects (7 months) by observing and videotaping students while they were engaged in investigations and group work, by collecting student artifacts such as assignments, notebooks, planning documents, and reports, and by interviewing target students 5 times individually. Combining all data, the researchers built a case summary for each target student. A cross-case analysis revealed how students lacked skills in (a) generating meaningful questions, (b) managing
complexity and time, (c) transforming data, and (d) developing a logical argument.

A study by Seiler et al. (2001) studied the learning of students and their three teachers while they practiced physics of motion by building and testing a model car. The authors observed group work, collected audiotapes and video tapes of the class while students engaged in project work, and conducted one student interview. Although discourse analysis from group work revealed that some students showed evidence of complex thinking and deeper understanding, video data and observations revealed how other students were reluctant to participate. These students seemed more motivated to ensure their social status and gain recognition from their peers, rather than to regulate their own learning. Artifacts, observations, and audiotapes further revealed how learning was limited as students seemed more engaged in building a car, than in applying science concepts. The authors suggest the lower socio-economic status of students in this study impacted these results greatly. Regardless, the study highlights how the discrepancy between what project work requires students to do and what they can do, along with students’ previous experiences and comfort level, prohibits many students from gaining the benefits that project work has to offer and tends to result in students who learn through transmission rather than by constructing their own knowledge (Blumenfeld et al., 1991; Ertmer & Simons, 2006; Marx et al., 1997).

**Collaboration**

As the implementation and quality of project work is largely teacher-dependent (Hmelo-Silver, 2004; Hmelo-Silver et al., 2006; Tali et al., 2006), many studies have been focused on supporting teachers in the enactment of project work. Attempts to
support teachers, however, often fail to do so because they ignore the complexity of teaching, fail to relate theory to practice, or do not provide continuous support (Nelson, 2008; Putnam & Borko, 2000; Richardson, 1990; Sarason, 1993). Successful attempts have been described when studies allowed for teachers to learn by experiencing project work in their own classrooms, when these teachers collaborated with other professionals, and when they reflected systematically upon those experiences (Fallik et al., 2008; Marx et al., 1997; Schifter, 1996). As teachers share the responsibility in designing projects, collaborate in solving problems, and strive for the improvement of student learning, reform of teachers’ practices and beliefs is facilitated (Fallik et al., 2008; Marx et al., 1997). Research emphasizes the importance of collaboration for this reform to become a long-term change (Little & Houston, 2003). Collaboration among educators allows for professional development to go beyond the individual teacher and become a school-based initiative, which, in turn, becomes essential in supporting ongoing development (Little & Houston, 2003). Although there are many forms of collaborative learning, key features of collaborative learning are described by Nelson and Slavit (2008) and include (a) creating a collaborative community that offers opportunities for dialogue between teachers, (b) examining beliefs and practices in a pursuit of a shared vision to improve teaching and learning, and (c) conducting research-like processes including the collection and analysis of data (Nelson, 2008; Nelson & Slavit, 2008). Marx et al. (1997) proposed a model that included four key features of achieving professional development: (a) teacher collaboration, (b) extended effort, (c) enactment, and (d) reflection (CEER). They explained the value of using a collaborative approach to teacher learning.

Through discussion, participants develop richer definitions of PBS [Project Based Science] and its possibilities for classroom practice, clarify their conceptions of
the features, gain understanding of practices that address challenges and confront their beliefs. By listening to others and revealing one’s difficulties, motivation to persist increases. (Marx et al., 1997, p. 351)

Inspired by the CEER model, Fallik et al. (2008) focused on testing its elements to motivate teachers in enacting project-based science and technology. Fallik et al. (2008) organized their professional development program in three parts. The first phase offered teachers inexperienced with PBS five workshops (the teacher as learner). The second phase allowed these teachers to implement project work into their own classrooms while being supported by other teachers who were experienced in enacting PBS (the teacher as teacher). The third phase included teachers becoming mentors in PBS themselves (the teacher as leader). As the researchers were interested in studying how teachers inexperienced in PBS perceived the effectiveness of workshops in increasing their PBS skills and how expert teachers perceived the effectiveness of the full program, Fallik et al. organized their research study in two parts. The first part of the study included teachers who had completed the first phase of the professional development model (the teacher as learner). Three groups of middle school science and technology teachers inexperienced in PBS participated in the workshops (n = 65). Fifty-eight (58) teachers completed questionnaires at the beginning and end of the workshops, answering questions about their perceived level of PBS skills and perceived benefits and difficulties of PBS. Questionnaires of these teachers showed that they perceived the workshops to be beneficial to their learning, as they claimed the workshops had improved their research skills. The teachers also believed PBS had many challenges for teachers. They indicated, however, how teamwork during the workshops helped them learn how to utilize each other’s strengths and deliver high quality work while tackling challenges collaboratively.
The second part of the study described expert teachers’ perceptions after completing the full professional development program (the teacher as leader). These teachers had been enacting PBS for 5-7 years after their workshops and had been involved in mentoring other teachers in the enactment of PBS. Seven teachers were selected and interviewed. Interview data demonstrated how teachers particularly valued the support they had received in guiding students during project work. Additionally, teachers felt the advice and encouragement they had received from their mentors increased their self-confidence and encouraged them to take risks. Furthermore, they valued that more experienced teachers were now able to support and mentor novice teachers in enacting PBS.

Another study examining a collaborative approach to teacher learning is described in Holst (2003), who studied reflections of student teachers’ collaborative learning on an English Language Learning module in Singapore. The module required students to research together as a group and teach their peers, while they examined several models of PBL learning and critically reflected on these models as they applied them to their own teaching context. The purpose of the module was to offer student teachers first-hand experience of collaborative project work and to encourage teachers to use this approach in their classrooms. Forty-six (46) students began the module by studying in groups the theory of PBL and a selected case study. The groups then moved on to develop two project-based lessons that they presented to their peers. A full description of their project was submitted as a last assignment. Holst (2003) collected data from three sources: student presentations, written reflections based on guiding questions, and observations of group work and discussions. Student reflections revealed how students enjoyed
collaborating with their peers as they felt this collaboration resulted in in-depth learning and sharing of information and perspectives. Students additionally valued working and learning in a team where each member could contribute by utilizing his or her own strengths, instead of being taught by one teacher. Student presentations and observations revealed that students were highly engaged, critical, and innovative in producing high quality, multimodal presentations that demonstrated their ability to apply the theoretical concepts of PBL. Based on her observations of the 4-week process and student discussions, Holst (2003) concluded her study with the following words:

Collaborative project work can be a powerful instructional method in teacher education. It provides opportunities for leadership, peer teaching and learning, and developing speaking competence and confidence. The approach might be more time-consuming, but it is repaid in heightened interest, quality of learning, collaboration, and creativity. (p. 7)

Other studies like Perry et al. (2004) and Randi (2004) describe similar positive effects of collaborative learning between mentors and student teachers. Although these studies do not focus on project work specifically, they highlight how student teachers are shown to have benefited greatly from working together with researchers and other teachers while implementing change and overcoming the challenges that come with organizing complex tasks similar to project work.

Extending this research to the classroom, Veenman, van Benthum, Bootsma, van Dieren, and van der Kemp (2002) conducted a complex study on cooperative learning in which they examined student teachers’ perceptions and practices of group work during a course on cooperative learning. Additionally, they examined the effect of these teachers’ practices on their pupils’ levels of engagement and their perceptions of cooperative learning. Extensive data resulted from pre- and post-observations of student teachers’
classroom practices and questionnaires of both student teachers and their pupils. Questionnaires from student teachers revealed that they perceived the interaction with other teachers, the opportunity to experience tasks and strategies themselves, and the opportunity to reflect with others on specific issues, helped increase their motivation and readiness to implement cooperative work. Pre- and post-observations of student teacher practices revealed that, while students experienced and learned about cooperative learning in the course, their use of cooperative learning activities in their classrooms increased significantly. Questionnaires from these student teachers’ pupils further revealed how they developed a positive attitude towards working collaboratively in groups, preferring it to working alone.

Still, collaborative learning comes with challenges. For collaboration to be effective, it needs to be founded on its members’ willingness to participate and mutual trust (Connolly & James, 2006; Nelson, 2008). Furthermore, members need to have a shared goal and build a group culture in which all members’ competencies are utilized so their collaborative community can be sustained (Tartas & Mirza, 2007). In collaborative communities, teachers need to be able to co-construct projects, conduct research in a collaborative manner, and reflect upon their own and others’ practices. Members further need to have a significant level of control over the design of the project and have the opportunity and setting to meet regularly (Erickson, Minnes Brandes, Mitchell, & Mitchell, 2005). These conditions are complex and not easily met (Connolly & James, 2006; Tartas & Mirza, 2007). With teachers’ agendas being overloaded and with the pressure for their students to perform being high (Giles & Hargreaves, 2006), creating time and energy to collaborate on new practices is burdensome (Nelson & Slavit, 2008).
Additionally, diversity in members’ goals, perspectives, experiences, practices, and beliefs can be as painful and challenging as they are enriching.

For example, as part of a 5-year research study, Nelson (2008) described the year-long participation of three collaborative learning communities in which teachers met regularly and worked together to examine their views and improve student learning in secondary science and mathematics. Nelson examined data from each collaborative learning community in terms of teachers’ dialogic stance; their collective understanding of science teaching, goals, and learning; and the impact on their teaching practices. Data collected consisted of observations, video, and audio recordings of meetings. Additionally, Nelson conducted one classroom observation for each of the teachers in charge of leading the collaborative learning communities and conducted two interviews with these teachers. All three learning communities used the same framework for inquiry, met regularly, and shared the same goals for student learning and teaching. Data resulting from one collaborative learning community revealed that collaborative learning can indeed result in deepened understanding, change of practice, and continued learning based on critical, collaborative reflection. These results, however, did not apply to the other two learning communities. During meetings of one school, for example, teachers failed to ask critical questions to reflect on their teaching and students’ learning; instead, they simply shared stories about classroom activities. Meetings from the third learning community demonstrated how dialogue was mainly used to avoid conflict instead of using contradictions in views or practices as learning opportunities. This group was unable to construct a shared vision as they lacked a willingness to explore the diversity of perspectives in the group. Furthermore, they failed to conduct research-like processes,
such as collecting classroom-based data for analysis.

Nelson (2008) speculated that many of the problems in collaborative learning communities relate to traditional norms of professional relationships. Communication is traditionally based on an expert-consultation role instead of encouraging teachers to inquire and explore. Nelson argued teachers will need to change traditional patterns of interactions, build trust, and open students’ work up to be examined. Only then, argued Nelson, can collaborative learning communities succeed in their endeavour to change practices and improve student learning.

**Summary**

Proponents of PBL have credited project work with benefiting students in a variety of ways: (a) students’ motivation to learn is increased as project work is structured around students’ interests, abilities, previous experiences, and cultural background; (b) students’ cognitive learning is increased as students value what they have learned and are able to apply that knowledge in a real-life context; (c) students’ development of higher thinking skills is encouraged as project work requires skills like problem-solving, analyzing, and self-monitoring; and (d) students’ development of social skills and social well-being are encouraged as project work requires peer relationship building, speaking and leadership skills, and collaboration skills.

Project work, however, also presents teachers and students with challenges that have resulted in many teachers continuing to hold onto more teacher-directed practices (Clark 2006; Katz & Chard, 2000; Li, 2011). These challenges include: (a) teachers’ well-ingrained beliefs and experiences about education contradict the concepts and underlying principles of project work; (b) teachers’ lack of certain skills that project work
requires teachers to possess, such as, guiding students effectively throughout the investigation and combining an emergent project with curriculum goals; (c) teachers’ not feeling supported or encouraged to implement complex tasks like project work by the broader school community; and (d) students, unsure and frustrated by the complexity and demands of project work, preferring to learn through transmission.

Reviewing these studies, it can be concluded that, for project work to be enacted and reach its full potential, theoretical guidance is not enough. Teachers need to experience and reflect upon project work in their own unique environment. Moreover, for change to become a reality, teachers need the support and time to discuss, problem solve, and reflect on their experiences, practices, and beliefs with other educators and professionals (Solomon, 2003). This collaboration can only be effective when it is founded on a mutual vision, a shared goal, trust, and respect. Based on whether or not these preconditions are being met, professional growth, along with project work, can either succeed or fall apart.
CHAPTER 3: METHODOLOGY

This study describes reflections from a classroom teacher (Megan) and myself on collaborating and enacting a whole-class project organized according to a constructivist framework. The project, named ‘Minds into Marketing,’ included 26 Grade 5 students exploring the concept of marketing and was planned, enacted, and presented over the course of three months. The project based its design on the ‘Project Approach’, as presented by Katz and Chard (2000). This approach structures projects around three phases: the planning phase, the investigation phase, and the culmination phase (Helm & Beneke, 2003). During the project, I captured Megan’s and my reflections through two semi-structured interviews in which Megan and I were interviewed together by a third party at the start and end of the project. Furthermore, we collected our reflections by keeping an exchange diary and a planning journal, and recording three semi-structured discussions between Megan and myself. Data analysis focused on gaining a greater understanding of the challenges and benefits we had identified as teachers embarking on a student-centered project. Furthermore, I analyzed our reflections to recognize how our collaboration had played a role in planning and enacting the project. In the subsequent sections I describe the research design, my role as a researcher, the setting, participant selection, the project, data collection methods, and means of analysis. I end this chapter by presenting a brief introduction to the results chapters.
Research Design

This study based its design on participatory action research (PAR). In PAR, people in an organization share ownership over the research process from the design to the results of the study (Kemmis & McTaggart, 2005; Whyte, 1991). In PAR, the researcher does not participate as the professional expert, but as a team member (Kidd & Kral, 2005). The first and foremost goal of PAR is to improve practices through planning, acting, observing, reflecting, and collaborating with others in their own cultural context (Kemmis & McTaggart, 2005; McTaggart, 1997). Although PAR has various forms and shapes, the core principles of PAR focus on participants’ experiences and beliefs, mutual involvement, and personal growth. As the purpose of my study was to gain a greater understanding of teachers’ lived experiences in enacting a student-centered approach to project work, designing my study based on these PAR principles seemed desirable and appropriate for several reasons.

First, a participatory approach would allow for Megan and me to collaborate and be actively involved in planning, enacting, and reflecting upon the project. This involvement would offer unique access to our experiences and expertise (Bray, Lee, Smith, & Yorks, 2000; Frisby, Reid, Miller, & Hoeber, 2005). Including Megan’s expertise as a member of the school would be particularly valuable as understanding the school, community, and the children’s experiences is an essential part of student-centered project work (Katz & Chard, 2000). Being actively involved as a participant would allow me to ensure the project was planned according to an emergent design (Kidd & Kral, 2005). Furthermore, I would be able to share the workload of enacting the project, therefore putting a lesser burden on Megan. Most importantly, actively collaborating with
Megan would allow us to reflect together, resulting in a greater scope of data and a greater potential for personal growth (Kemmis & McTaggart, 2005).

Second, providing researchers and teachers with our experiences, the problems we encountered, the benefits we identified, and the ways we utilized learned lessons to make changes would allow us to help other people understand and improve systems previously invisible (Frisby et al., 2005; Kidd & Kral, 2005; Reason & Bradbury, 2001). The study would particularly be relevant to other teachers for whom other types of research are often not accessible or fail in terms of practicality (Bray et al., 2000; Frisby et al., 2005; Kidd & Kral, 2005; Reid, 2004; Sarason, 2002; Thomas, 2000).

Third, PAR is based on the belief that people can construct knowledge by reflecting upon their own circumstances (Frisby et al., 2005; Kidd & Kral, 2005). As the principles of PAR strongly coincided with the constructivist principles underlying my student-centered approach to the project, taking on a research design that adopted those same constructivist principles was a logical decision to make (Whyte, 1991).

Choosing a PAR design for my study included some risks as well. As a Master’s student who lacked adequate training and knowledge of PAR research, I could risk spending much time and energy in setting up a project that might not get off the ground in the end (Frisby et al., 2005; Herr, 2005; Kidd, 2002). The greatest challenge of PAR, however, was related to its core principle of sharing power between the researcher and participants. In the next sections, I elaborate on this aspect more fully as I describe my specific role as the principal researcher.
Study Context

Role of the Researcher

In its essence, participatory action research comes down to sharing power between researchers and participants (Kidd & Kral, 2005). To explain in detail how Megan’s and my participation was defined and how it was applied throughout the study is imperative to acknowledge the complexity of our collaboration and to understand how our actions and thoughts influenced each other (Kidd & Kral, 2005). For me, taking a participatory approach implied being respectful of Megan’s views, being open to new experiences, being critical and reflective, and, most of all, being open to change my own views or actions where needed (Kidd & Kral, 2005). Additionally, it was crucial for me to build a relationship and trust with Megan, as having a strong relationship would motivate us both to commit to the study, to take responsibility, to reflect openly, and to combine our knowledge (Frisby et al., 2005; Kidd & Kral, 2005). To further encourage Megan to take ownership over the study, I took care in selecting forms of data collection that allowed Megan and me to be partners in the research process (Kemmis & McTaggart, 2005; Kidd & Kral, 2005); namely, the joint interview was conducted by a third party, the discussions included both our thoughts, and personal diaries allowed for both viewpoints to be verbalized and exchanged.

Megan’s involvement in developing research questions, developing the research design, and collecting, analyzing, and interpreting data, however, was limited. This limitation was due to the fact much of the study had already been proposed and approved, and Megan’s schedule did not allow for time to be involved in the research-specific aspects of the study. Instead, joint commitment and the sharing of responsibilities were
achieved by collaborating fully on the planning, organization, and reflection of all aspects of the whole-class project (Kemmis & McTaggart, 2005). The project had not been predetermined in any way and was as much based on Megan’s input and expertise as it was on mine, although Megan and I differed in terms of our expertise, roles, and contributions to the study (Kemmis & McTaggart, 2005; Kidd & Kral, 2005). While my role for the first two phases of the project mostly was focused on planning and organizing the project, Megan took on the role of the actual enactment of the project in terms of guiding students’ work and working with the broader school community (amongst other aspects). Megan and I would generally have one formal planning meeting a week, and many informal discussions during and after project activities. During these meetings, Megan and I would reflect upon issues, come up with new ideas, exchange observations, and share frustrations. Throughout the project, Megan’s and my collaboration could be described as positive, open, and respectful.

While collaborating allowed for Megan and me to share ownership, it brought some risks as well. Not being in control of the full research process could make falling back onto more traditional roles tempting (Kidd & Kral, 2005). There would be a risk for Megan to disagree with my goals, views, or preferred methods, or vice versa (Kidd & Kral, 2005). Further complicating this aspect is that Megan could be used to a more hierarchical approach to research and might resist the power I offered her. She might feel more comfortable with me taking a more leading and active role (Frisby et al., 2005; McTaggart, 1997). The intense collaboration between Megan and me could make it challenging for me to think critically and to keep close sight on my own perspectives as well (Kidd & Kral, 2005). Furthermore, our friendship could encourage Megan to reveal
much about herself, which could result in her feeling used or left to her own devices when the study was completed (Reid, Frisby, & Ponic, 2002).

Despite good intentions, a well-thought out plan, and shared goals and responsibilities, there would be a need to constantly reflect on how to negotiate and manage this power throughout the research process (Frisby et al., 2005). My main job as the principal researcher therefore came down to being reflexive and to encourage this reflexivity in Megan (Frisby et al., 2005).

**Setting**

Megan teaches in an elementary school located in a suburban area in the west-end of a mid-sized city in eastern Ontario. The school hosts approximately 430 students in 22 classes from Junior Kindergarten to Grade 8, with the majority of these students coming from middle-class families. The school is generally known to be an active school: one that encourages teachers and parents to be involved in supporting school initiatives and prides itself in offering extra-curricular activities. Invariably, when you visit the school, you find a healthy buzz of students, volunteers, visitors, and staff members within its walls. With its large classrooms, a gym, a great hall, a computer lab, and a library, the school offers a variety of places for students to work.

Megan’s classroom, however, contradicted the rest of the school. Being one of two small portables located in the school playyard, Megan’s classroom stood separately from the main school building. Megan’s overloaded desk was located on the left-side front of the classroom, facing two computers that were pressed against the windows. The majority of the walls and shelves of the portable were taken up by students’ work in progress and the little extra space the portable did offer was filled with a cupboard used
for craft material along with a small reading area set up with a couch and a small carpet. The portable hosted 26 Grade 5 students, of which 18 were girls and 8 were boys. The students barely fit in the double U-shaped table design Megan had set up and were forced to stay in their desks for the majority of the day as the only option for students to work collaboratively was to work in the middle of the U-shape or in the far corners of the portable. Megan worked part-time and shared her teaching responsibilities with a co-teacher. Megan worked in the mornings and focused on the language and math curriculum while her colleague taught subjects like social studies, gym, computer, and the arts in the afternoon.

**Participant Selection**

Megan’s interest in my inquiry about Project-Based Learning (PBL) was evident long before I embarked on finding a participant for my study. As a friend and a fellow teacher, she often asked about my experiences in doing my master’s program at Queen’s. As Megan transitioned from teaching physical education, to a part-time position of a Grade 5 teacher, she indicated she was interested in participating in my study. I was pleased with Megan’s initiative for several reasons.

First, finding an appropriate partner for my study was a challenging task. Although the four principals I had approached had indicated they were interested in the study, none of them felt their teachers would be willing to spend time on a project. Having a teacher to volunteer for this position was a welcome and rare opportunity.

Second, I believed the friendship Megan and I shared would be particularly beneficial as I expected our experiences of planning and enacting the project would greatly depend on our collaboration as teachers and co-researchers (Frisby et al., 2005;
Marx et al., 2004). Already having an established relationship with Megan, I knew she shared my passion for education and professional development, was open-minded to embark on a student-centered approach to project work, and would collaborate in an enthusiastic, open, and reflective manner.

Third, Megan taught Grade 5. As my own personal teaching experience included teaching Grade 5 students, this experience would allow me to have an understanding of the particular developmental stage of the children in the classroom, to better steer the project towards students’ age-related interests and levels, and to be more efficient in connecting the project with curriculum goals. Additionally, I felt enacting student-centered project work for older students would be an interesting contrast with the Project Approach of Katz and Chard (2000), which mainly focused on organizing a student-centered approach to project work for younger children.

As Megan continued to show interest in my study, I decided to proceed and gain approval from the school principal. Through numerous telephone calls and emails, I provided the principal with a brief explanation of the study along with the letter of information (see Appendix A), a police criminal record check, and ethical clearance from Queen’s University as well as the School Board. Once the principal had confirmed Megan’s interest in participating in the study, she approved the study to be conducted within the school. Although I had initially wanted to set up a time for an informal observation and interview of Megan, I adjusted these plans based on the fact I already had a good sense of Megan’s personality, background, and teaching philosophy. Instead, I decided to have an informal meeting early November to provide an opportunity for Megan and me to discuss the upcoming project, our roles as co-researchers, and our
personal goals. After this discussion, Megan fully agreed to participate in the study. I provided her with a letter of information and a letter of consent (Appendix B), which we both signed. We were then ready for the next step and started organizing our project.

The Project

The project’s design was based on the ‘Project Approach’ as presented by Katz and Chard (2000). This approach structures projects around three phases (Helm & Beneke, 2003). For an overview of the three project phases see Figure 1, p.44. The first phase, the planning phase, included selecting a topic according to students’ interest, the topic’s level of authenticity, and the topic’s potential for connecting to existing curriculum goals. The topic Megan and I chose in November was ‘Minds into Marketing,’ which focused on the role of media and advertisement. We identified children’s existing knowledge by revisiting past experiences related to the topic and formulated research questions as a class along with predictions about what was going to be learned. Curriculum connections with Media Literacy were worked out, along with a plan for potential hands-on activities, expert visits, and field trips. This phase lasted from November 3 until January 3. During this time, Megan and I spent 5 hours planning collaboratively, and I spent one hour and 30 minutes in class. Directly following the first phase, the second phase of project work let the students investigate the concept of marketing through a focus on primary resources including: hands-on activities, interviews, field trips, expert visits, and a variety of media. Children represented what they had learned in multiple ways, including products such as: posters and menus, constructions, drama, drawing, and writing. The class then decided to utilize and expand on their acquired knowledge of marketing by promoting an event. The second phase
lasted until February 8 and included 4 hours and 30 minutes for joint planning time, and 14 hours of joint time in class.

Immediately after the second phase, the third phase included a culmination activity and debriefing of representations. With the students, we organized and promoted an event for fellow students, parents, and teachers. The final presentation included a play and musical performances. Marketing strategies were used to sell tickets, food, and drinks, the resulting proceeds being given to a charity fund. After the event, we reflected upon what we had learned during the process of the project. This phase lasted until February 17 and became the most intense phase as Megan and I planned for a total of 6 hours and 30 minutes, and my in-class time increased to 19 total hours.

**Data Collection**

To capture our experiences in enacting the project, I used a method of triangulation, which allowed a cross-validation among different data sources and therefore provided me with more trustworthy categories and themes (Berg, 2008). Our reflections throughout the course of the project were collected by recording two semi-structured interviews of Megan and me together, keeping diary notes that we exchanged continuously throughout the project, and recording three semi-structured discussions. Additionally, notes recording how the project was organized were kept in a pre-structured planning journal. Two semi-structured interviews were planned several weeks before and after the project. The interviews were conducted at Megan’s house and recorded by a fellow graduate student and professional journalist. Aware of power and hierarchy, I chose that the interview be conducted by a third party to eliminate the risk of perceived
inequality or reactivity between Megan and me, as well as to create an opportunity to capture both our perceptions (Glesne, 2006). The interviews lasted approximately one hour each (see Appendix C for interview questions).

**Figure 1: Project Model** (adapted from: Helm & Beneke, 2003, p. 12)
The first interview focused on predictions, definitions of constructivism and project work, and current teaching practices. It included questions like ‘From your experience, what makes a project successful?’ and ‘What do you expect from this project?’ The second interview adapted questions from Beneke and Ostrosky (2009) and reflected upon our experience enacting the ‘Minds into Marketing’ project. The interview included questions like ‘How do you think this project influenced your teaching?’ and ‘How did you feel organizing the project combined with your daily schedule?’ Both interviews provided me with a direct record of the perceived challenges and benefits of project work, unexpected events, and our thinking of project work before and after completion of the project. A similar method was used in Mergendoller and Thomas (2001). In that study researchers used semi-structured interviews to elicit teachers’ learned lessons in planning and enacting project work in their classrooms, particularly focusing on identifying challenges in practicing project-based learning and overcoming those challenges.

Diary writing was used as a way to collect Megan’s and my daily thoughts during implementation of the project, a method used by Randi (2004). In Randi’s study, teacher candidates provided useful examples and narratives through journal writing. As Randi (2004) suggested, adults tend to open up more when putting their thoughts into writing, which can result in valuable data that would otherwise be missed. There were, however, a few risks in using diary writing as a source of data. Comfort and competence levels in diary writing could differ between Megan and me. As I remained the principal researcher responsible for analyzing the final data, there was a risk for misinterpretation of data as well (McMillan & Schumacher, 2010). Therefore, the concept of a personal diary was
adapted to an exchange diary. An exchange diary simply meant Megan and I would exchange our reflections every week so we had an opportunity to read and respond to each other’s thoughts. Shifting to an exchange diary allowed Megan and me to: (1) reflect on the process of the project from a personal viewpoint; (2) collaborate, corroborate, and have a continuous dialogue; (3) take direct action based on negotiated reflections; and (4) reflect at a time and place convenient to us.

Megan and I scheduled a weekly planning meeting to further discuss and organize the project. Planning meetings generally took about an hour a week, although in the last phase of the project, meetings became more informally planned. The planning documentation that resulted from these meetings, along with planning that was done proactively by me (particularly in the first phase of the project), was collected and recorded in a pre-structured planning journal as presented by Helm and Katz (2001). This planning journal was based on the ‘Project Approach’ (Katz & Chard, 2000) and provided additional guidance to Megan and me while organizing project work. The intent of this guide was to ensure a project was planned according to underlying constructivist principles of project work. The planning journal guided Megan and me in organizing the project by asking specific questions; for example, “What possible directions could the project take?” and “What are your reasons for selecting this topic?” (Helm & Katz, 2001, p. 5). The other benefit of using the planning journal was that it provided me with a detailed record of how we organized the project.

Semi-structured discussions between Megan and me were planned for each project phase. I initiated these discussions to offer us an opportunity to reflect critically upon observations we had made in the classroom and on how we had enacted and
experienced the project so far. Perry et al. (2008) used a similar method when she transcribed post-observation data of student teachers discussing their teaching practices that promoted self-regulated learning with mentor teachers and their university-based faculty associates. Transcripts from these discussions were analyzed to determine how student teachers talked about, understood, and reflected upon practices in their classrooms. Contrary to Perry et al., however, I chose to structure these discussions around classroom observations along with pre-selected constructivist principles. Running records would capture moments of each project phase at a time that the children and classroom researcher were engaged in project work. These observations were then to be discussed and compared with principles I quoted or adapted from literature focused on constructivist teaching like “inquire about student’s understanding of concepts before sharing our own understanding of concepts” or “encourage student inquiry by asking thoughtful, open-ended questions and encouraging students to ask questions of each other” (Brooks & Brooks, 1999, pp. 107-108). I structured the discussions in this particular way to focus our reflections not only on the practical, organizational aspects of project work, but also on the underlying constructivist ideas behind our actions.

As I transcribed our first semi-structured discussion during the first project phase, I realized, however, that our observations of the initial discussion with the children were hardly mentioned during the discussion and seemed to distract more from the discussion than contribute to it. For the second and third project phases, I therefore focused the semi-structured discussion with Megan solely on pre-selected constructivist principles (see Appendix D). During the discussions, Megan and I would first read these principles out loud and discuss our understanding of these principles. Both Megan and I would then
shift our attention towards the project and our observations in general, and how they coincided with or contradicted these constructivist principles of teaching. I ensured all three semi-structured discussions between Megan and me were planned at a time and place convenient to Megan, either taking place in our own homes or in a quiet area within the school. The discussions lasted one hour, with the exception of the last discussion, which was split into two 35-minute sessions, due to time limitations.

**Data Analysis**

I conducted data analysis for each project phase in four steps: (1) I transcribed interviews and discussions verbatim; (2) I read over all the transcripts, including the journals several times; (3) I colour-coded transcripts according to recurring themes; and finally, (4) I summarized the coded data (Griffiee, 2005). All coding of data was done electronically because using a word processor allowed me to reorganize data more easily (Glesne, 2006). I chose to analyze each of the project phases separately. Taking a chronological approach allowed me to recognize changes in our thinking during the course of the project, how the project emerged, and how each of these phases came with its own challenges and benefits (McMillan & Schumacher, 2010). Project phase I, therefore, included one interview, one semi-structured discussion, 8 pages of diary writings, and one section of the planning journal. The second phase included 10 pages of diary writings, another section of the planning journal, and a semi-structured discussion. The last project phase included an interview, 10 pages of diary writings, a semi-structured discussion, and the last section of the planning journal.
I started my analysis of project phase I by reading through the first interview several times. As my main research question was to identify the challenges and benefits of project work we had encountered as teachers, I first underlined and later colour-coded sections that evidenced themes within the categories of benefits or challenges of project work. For example, as student learning and motivation came up as a beneficial, as well as a challenging, aspect of project work, I chose to colour-code comments relating to challenges of student learning and motivation dark green, whereas I coded benefits of student learning and motivation with light green. Stott (2007) used a similar method in her qualitative study examining male nursing students’ experiences of an undergraduate program in Australia. Stott analyzed transcripts of her interview data as well as her diaries by colour-coding themes that reflected participants’ thoughts and relating these themes to a specific topic or category. While repeating this coding process several times I provided transcripts with a colour code and a name code that identified the project phase, data set, and participant (for example: MI1 would stand for Megan’s comment during the interview in project phase I).

I continued the data analysis process by repeating this procedure for the analysis of D1 (Semi-structured Discussion Phase 1) and R1 (Reflections of Megan and me in Phase 1). The planning journal (P1) offered mostly a factual record of how the project was organized and therefore few reflections. Where it did include reflections, however, I applied the same colour-coding procedure. After colour-coding I1, D1, R1, and P1, I formed a final colour-code schema for project phase I including five sub-themes for identified challenges of project work (organization and management, control, student learning and motivation, broader school environment, and time) and four themes for
identified benefits of project work (organization and management, professional
development, student learning and motivation, and broader school community). I also
colour-coded aspects of project work that did not relate to either identified benefits or
challenges of project work. By using this strategy, I kept the original purpose of the study
in mind while remaining open to emergent themes (Berg, 2008). This approach resulted
in the data revealing one more major theme: the collaboration between Megan and me.

The final colour-coding scheme of the first project phase now gave me some
insights into specific categories of identified challenges and benefits of project work. I
was able to distinguish three main categories of challenges and benefits: teacher-related,
student-related, and school-related. For example, school-related challenges and benefits
included themes like time and the broader school environment, whereas teacher-related
challenges and benefits included themes like organization and management and control.
Taking the final colour-coding schema, I went through all data sets of project phase I one
more time to readjust colour-codes to ensure I had included all the themes I had identified
across the data sets. I proceeded by copying transcripts from all the data sets of project
phase I and listing them in a new document under its given colour-code. For example, all
the yellow-coded transcripts implied time-related challenges of project work. Therefore
all the yellow transcripts across I1, D1, R1, and P1 were put under school-related
challenges under the yellow heading of ‘time’. Meanwhile, I kept a copy of the complete
colour-coded interview, reflections, discussions, and planning journal as well. This way I
was able to gain an overview of major and minor themes across the three data sets, and
still go back to the full text to check for context.
With all the transcripts of all data sets of project phase I under their appropriate category and theme, I was now able to go through the transcripts to determine sub-themes. For example, teacher-related benefits included the sub-theme of Organization and Management, which could then be organized into transcripts talking about formative assessment and curriculum connections. Reorganizing each theme into sub-themes gave me insight into our main thoughts relating to a specific theme. I proceeded by creating a single-paged summary of project phase I in which I indicated the categories, themes, and sub-themes found as well as the frequency of how often these sub-themes and themes had occurred and by whom. With this summary I was now able to describe the results of identified benefits and challenges in project phase I.

When I completed the description of the results of project phase I, I applied the same data analysis procedure to project phases II and III. Although I was open to add new themes as I went through the data sets of project phase II, no changes were made to the existing themes. Sub-themes, however, differed for each phase. After describing the results of all three phases, I conducted a cross-analysis by putting all three data summaries in one document. Additionally, I repeated the data analysis procedure by taking all the reorganized transcripts from project phases I, II, and III and pasting them together in a new document while placing transcripts under the appropriate category, theme, and sub-theme. As I had done with all the separate project phases, I created a single-paged overview combining project phases I, II, and III. Creating these summary overviews allowed me to not only gain insight into each project phase separately but of the project as a whole as well (Glesne, 2006).
As data analysis was primarily my responsibility, I was cautious not to overload Megan with this research process. Instead I decided to plan a final planning meeting with Megan on May 6, 2011, to provide her with my preliminary results. As common in participatory action research, it became clear during this stage, however, that Megan had moved on to other activities and priorities in her teaching life (Frisby et al., 2005; Kidd & Kral, 2005). Megan reported she felt at ease with the description of the results and was happy for the data analysis and interpretation to be completed by me. Although I received little feedback from Megan during this stage, involving Megan for this part of the study did offer an opportunity for discussion and reflection at the end of the project and ensured that both Megan and I agreed upon the interpretations and organization of data consistent with principles of participatory action research (McMillan & Schumacher, 2010).

**Introduction to Results**

In the next three chapters, I present the results of this study. I have organized these chapters chronologically to give the reader an understanding of how the project evolved over time. Each chapter first presents an overview of the specific phase of the project, describing the structure and objectives of that project phase and the way Megan and I organized the activities that took place. Next, the chapters describe results on Megan’s and my experiences of teacher-related, student-related, and school-related challenges and benefits of enacting the project. As the data had indicated collaboration between Megan and me had been a major theme during the project, I end each chapter by describing this collaboration during that specific phase of the project.
CHAPTER 4: RESULTS FOR PROJECT PHASE I (PLANNING PHASE)

The main objective of the planning phase was to select an appropriate topic for the project based on students’ interests and prior experiences, as well as its potential for offering a variety of learning opportunities and connections with curriculum expectations. Once Megan and I selected a topic, we organized a class discussion to confirm children’s interest in the topic and determine their questions and ideas for investigation. After confirming the children’s interest, we worked out specific connections with the curriculum, along with plans for assessment strategies, activities, and field trips. To ensure we would outline the project according to a constructivist framework, and to ensure I did not demand any of Megan’s time unnecessarily, I conducted most of the planning during this phase myself, while regular meetings with Megan ensured plans were steered towards a realistic outline that would include students’ interests and be suited for their school environment.

Figure 2: Project Phase I
Megan and I scheduled an initial planning meeting in early November. During this initial planning meeting, Megan and I sat down to discuss the students’ backgrounds, their general interests, the school environment, and Megan’s curriculum goals. From this meeting, it became clear that the students had an interest in music, messages in lyrics, and music promotions.

Megan has given me some ideas for topics that the children seem interested in. One that she kept mentioning was music. Megan has already explored song lyrics with the children based on this interest and had noticed the children were curious in terms of how songs became popular, and who decides if they were being played on the radio. (LP1)

Megan also related the children’s interest in music promotions and messages in media to the broader topic of media literacy. She indicated she had not yet covered much of her media literacy curriculum goals. As Megan taught part-time and one of her teaching responsibilities was the language curriculum, a focus on media literacy would not only be of interest to the children, but would also help Megan to connect the project with curriculum expectations.

Based on Megan’s comments on media literacy and suggested interests of the children, I devised three potential topics. These topics seemed to have much potential to deepen students’ current understanding of their environment, help them to understand the functions and limitations of a variety of media, and develop skillfulness in applying a variety of media to their work. As suggested by Katz and Chard (2000), I further explored the potential of these three topics through creating three anticipatory mind-maps: ‘Minds into Music,’ ‘The World of News’ (Appendix F), and ‘Minds into
Marketing’ (Figure 3).

I felt it would be beneficial to create a mind-map that would literally provide us with a map of the project and would clearly outline the potential of this topic. Therefore, I created this mind map and used this particular map for our first official planning meeting on November 28. I created a word web like this one for the news topic and the music topic as well. (LP1)

For each anticipatory mind map, I included potential (a) questions from the children, (b) activities and products, (c) primary resources, (d) benchmarks, (e) assessment strategies, and (f) directions the project could take.

For our second meeting, Megan and I discussed the three anticipatory mind maps with the objective to select one topic based on students’ interests and learning potential.

Figure 3: Anticipatory Mind Map
After discussing these three options, Megan and I both felt the ‘World of News’ had a lot of potential, but missed the originality and novelty to capture students’ interest. We also felt this particular topic was too much ‘off’ from the children’s emerging interest in song lyrics and music marketing processes. Megan really liked the musical topic so the students really would get an in-depth look in how music processes work. I was afraid that this topic, despite its potential, would be too broad for an eight-week project. I felt, in order for it to work, it had to be small enough for students to learn something concrete, and yet big enough to get to the heart of media literacy (media being internet, TV, magazines, bill boards, clothing, etc.). (LP1)

We decided that the topic of ‘Minds into Marketing’ held the most potential as it seemed strongly connected to media literacy goals. The topic would also allow us to include a variety of media and primary resources and to create interesting cumulative events, activities, or products. Most importantly, the topic seemed to connect strongly with students’ interests and their everyday lives and experiences.

Once ‘Minds into Marketing’ became our first choice for the project’s topic, it was time to find out whether or not it would indeed be of interest to the children. Furthermore, we needed to determine the children’s current understandings of marketing, what they wanted to learn, and how they wanted to find answers to their questions. To prepare for the class discussion, I developed a short presentation of slogans, symbols, jingles, and logos that I expected students to recognize. I led the start of the discussion with the children as Megan felt more comfortable with observing and making note of actions, events, and verbatim interactions between the students and me. The children immediately recognized the companies and products associated with the symbols, slogans, and jingles. When asked what made them recognize these companies or products, they were able to identify a variety of media used for marketing purposes. Several students indicated they had parents who owned a business or were involved in a marketing-related profession. When
asked questions that were more specific, however, the children stumbled. They had obvious trouble verbalizing or identifying marketing strategies or purposes. Megan and I chose that point in time to divide the class into three groups and ask each group to brainstorm and take notes on charts about what they knew about marketing, what they wanted to know, and how they wanted to find out more. Children recorded questions like “How much does marketing cost?” and “Who does marketing for a company?” and “Why do people buy poor quality products, just because it is brand?” Megan and I hung the charts up in the classroom so the children could add to them during the week. Based on Megan’s observation records and the information on the charts, I created a summary of the children’s current understandings, their questions, and their ideas for investigation.

As we collect the three charts, we can look at the ideas students have for activities and deriving from there, we can facilitate these activities in class, like analyzing magazine/newspaper advertisement based on; who is this message for, by whom is it presented, what is the message, how are they trying to persuade you, how could other people view this message? (LP1)

Now that we had confirmed the children’s interest in the topic along with their current understanding of it, I was able to go back to our initial anticipatory mind map to reexamine what specific curriculum goals could be integrated into the project.

The content goals of the Ontario Ministry of Education (OME) language curriculum, including media literacy, are broadly indicated. The children’s curiosity into the media’s role in marketing and advertisement ties in beautifully with these curriculum goals, which are broad enough to include the children’s specific interest and questions. (LP1)

For the Media Literacy curriculum goals of Grade 5, the Ontario Ministry of Education (OME) indicates several core competencies;

Children will (a) demonstrate an understanding of a variety of media texts; (b) identify some media forms and explain how the conventions and techniques
associated with them are used to create meaning; (c) create a variety of media texts for different purposes and audiences, using appropriate forms, conventions, and techniques; and (d) reflect on and identify their strengths, areas for improvement, and the strategies they found most helpful in understanding and creating media texts. (Ontario Ministry of Education, 2006, p. 103)

For assessment, the OME presents four interrelated categories of knowledge and skills: (a) knowledge, with a focus on content knowledge; (b) thinking, with a focus on children’s metacognitive skills like research skills, time management, and planning skills; (c) communication, with a focus on students’ ability to present, verbalize, and illustrate their understanding to a specific audience; and (d) application, with a focus on students’ ability to apply their newly gained knowledge and skills in a variety of ways (Ontario Ministry of Education, 2006). Combining these curriculum goals with the children’s ideas and questions, I created a framework for the second phase of the project. This framework included a time frame, class activities, related curriculum goals (also indicating potential curriculum connections outside of media literacy goals), related questions of the children, and assessment strategies.

**Challenges**

*Teachers who inspire realize there will always be rocks in the road ahead of us. They will be stumbling blocks or stepping-stones; it all depends on how we use them.* (Author Unknown)

**Teacher-related Challenges**

One thing became evident when analyzing the data of project phase I: organizing and managing a project included challenges for both Megan and myself. During our first interview, Megan and I reflected on our past experiences with project work and how difficult it had been to enact project work in a student-centered manner. This difficulty
had particularly been the case with students who lacked the skills necessary for project work to succeed.

That was the challenge because you had some partners who work really well together, and you had people who don’t work so well together. … And what was frustrating was that you have got the kids that waste their time, right? Or maybe are not pulling their weight. (MI1)

From our experiences with project work, students’ extensive need for guidance in collaborating efficiently, creating a plan, or sticking to a timeline, had resulted in projects that were anything but student-centered. Instead, students’ work had ended up being incomplete, or worse, completed by someone else. In the same interview, Megan and I articulated our worries that this challenge of guiding students was going to be a major theme in the project to come, particularly, as the students involved in the project were used to a more teacher-instructed setting. “We’re not always encouraging our students to take control, to think for themselves, to think critically. And by not doing that, a completely student-centered project might be too big of a gap” (LI1).

Planning a project based on a student-centered, emerging design also created challenges in connecting this project with fixed curriculum expectations. Megan’s and my approach to project work implied we would not know in advance what direction the project would take, and what activities and curriculum connections were going to be involved. During the post-observational discussion, Megan expressed her worries about planning the project alongside report time, which was coming up soon. “They are not going to do project work every day, right? I just have to think what am I going to do to assess the reading and the writing” (MD1). I emphasized how we could combine assessments of students’ learning during the project with the required assessments for the reports.
If you can plan out what do you want the children to be assessed on specifically for writing or reading, we can look at what parts of the project you could use for that? So you can use your time efficiently, you don’t have to do that on top of the project. (LD1)

However, as the reports involved different aspects than the project was necessarily going to give Megan, she felt forced to plan ahead for more formal, teacher-directed activities to ensure the demands of the curriculum would be met. “It’s just that I have to be specific in my head so when we go in January we can start working on that” (MD1).

Not knowing what the project was going to entail, as part of it was up to the students, was also intimidating to Megan and me as it forced us to let go of some control. “I am struggling with, because we take their interest, because that will give us a bit of a framework for where we are going, that it’s really hard to sit back and not make the plan itself” (MD1). Wanting control for our own feeling of comfort and for planning purposes, as well as having strong ideas about the project ourselves, made it difficult to give students the opportunity to take part in designing and organizing the project.

It is not only hard to let go of that desire to be proactive, it’s also that you get excited as a teacher. You have all these great ideas of what the children could do and learn and create. It’s easy to forget the students’ voice in that. (LR1)

**Student-related Challenges**

The first phase of the project involved very little class time. Therefore, challenges related to student learning and motivation became only a minor theme for Megan and me. In fact, during our first interview, the majority of our comments reflected how both of us felt students’ motivation and academic achievement were enhanced by project work.

When I was asked for my reasons to conduct the study, however, I revealed my struggle with not achieving this success with all students in the past as being the main reason to embark on my study about project work.
I found it very hard to organize project work in such a way that all students would get to that quality of learning. So I have been searching for ways to organize project work in such a way that all children would show that. (LI1)

Student motivation did come up as a challenge during phase I. The children had added little to the charts we had hung up in class. Megan thought the children had gotten distracted from the project because of other activities they were asked to do that week. I, however, feared we had misread students’ interest in the novelty of doing a project, for interest in the topic itself. I worried about this matter as the project was to be based on students’ interests, and this interest was to become a leading thread throughout the process of the project. “I am hoping that it is not their lack of interest for the topic … because if that’s the issue, we have a whole other problem on our hands” (LD1).

**School-related Challenges**

Before Megan and I could embark on the project and take a new approach to learning, we needed support from the principal and the parents. Additionally, we needed to work closely with other teachers to create time and space to work. During our interview, Megan and I predicted that this increased need for support from the broader school community was going to raise some issues. Megan and I pinpointed the pressure to meet expectations. “Then you have the pressure of the curriculum expectations, … you know, ideally as a teacher you say ‘screw the expectations, they’re learning something!’”(MI1). The pressure to meet expectations also came from other corners as I reflected on my experiences when working in a private school setting during the same interview. “And here’s the principal above your head saying ‘it needs to have a certain level and a certain format,’ and here are the parents that want to see, that need to be impressed” (LI1). Justifying our approach to project work to the broader school
community could be a challenge in itself. As Megan and I decided to spend time on project work, this time could simply not be spent on other activities, which could result in questions or concerns from parents, colleagues, or the principal. During the interview, both Megan and I predicted that documenting and displaying students’ learning was going to be crucial in elucidating the project for the broader school community.

You have to weigh out what is more important at this time. In the end, the kids are still reading, they are still using those skills that I would use in a specific kind of program. … You just have to be able to justify that and show that, as long as you show that, they’re going to be fine. (MI1)

Physical space and accessible resources were mentioned as well. Megan taught in a portable building. Although Megan had two computers in a corner of her classroom, the only access to a printer was located in the main building. “I am limited to what I have access to at school at this moment, because the lab is a very popular place, I can’t get in there” (MI1). When Megan and I discussed our initial conversation with the children, I confessed feeling limited by Megan’s physical teaching space. “When they were working in their group, that was kind of chaotic, I think because the groups were really close together, you just have so little space in your portable; it’s a small classroom, right?” (LD1).

Another limiting factor was time. During the interview, both Megan and I predicted staying within our timeline was going to be a challenge. “I see the project going longer as we start; and, as the students are engaged, I think they are going to develop more questions, which means they will want to take it further and further and further” (MI1). As predicted, time did become an issue when we transitioned from planning the project into introducing the project into the class. Megan’s reflections indicated how she started to feel pressured by the lack of time. “I feel my brain is full, … Between the long
dragged out assembly, quizzes, curriculum that I had to cover and Christmas celebrations, the week flew by and discussion of the project work did get neglected” (MR1). Not being in control over what was being done in the classroom, my own reflections show understanding, but also frustration about time not spent on the project.

I was disappointed that no work was done in the week before the holidays, as I believe we do need to keep momentum to keep the children engaged. At the same time, this is life in a classroom. Many things need to be done and there is never enough time. Especially this time of the year, there is not much space for exploring and taking the time to think about new concepts. (LR1)

Benefits

Let us think of education as the means of developing our greatest abilities, because in each of us there is a private hope and dream which, fulfilled, can be translated into benefit for everyone and greater strength of the nation. (John F. Kennedy)

Teacher-related Benefits

Although organizing and managing the project implied some challenges, I strongly believed that organizing and managing the project could bring forward some benefits. This conviction became a major theme in my data, as evident in our semi-structured discussion. As Megan struggled with balancing project activities with fixed curriculum items, I encouraged her not to think of project work as an additional demand on her agenda but as something that could be combined with other expectations. “Just because they don’t ask that question the way the curriculum would state it, it connects together, so … we might really cover a lot of things that you wanted to cover anyway in your more formal lessons” (LD1). As Megan wanted to plan formal assessments to get students’ latest test results on reading and writing skills, I highlighted using the project for assessment purposes. “If we do the portfolios, for example, with the children, I think
there will be lots of work in there that you will be able to use for assessment for your report cards. I am convinced of that” (LD1). I particularly emphasized how we could use students’ work for formative assessment purposes.

And then in the second phase we can look at the same displays again and say, how have we added onto that knowledge? And through portfolio work, hopefully that will also show, their first activity and their last activity for example, will also show a huge leap in their understanding of the topic. (LD1)

During the interview, Megan and I reflected on how the project included benefits for ourselves as teachers. Both Megan and I considered organizing and reflecting upon the project as being professionally rewarding and stimulating. Megan clearly hoped that, by going through the experience of organizing a student-centered project, project work would become easier to organize in the future. “I want to be able to use this, you know, in my program at school and it not being complicated. It’d be something that’s easy to apply” (MI1). I, too, expected experiencing and reflecting upon the project would enhance my understanding of project work and my ability to apply that knowledge to future projects.

I think professionally, I want to walk away feeling a certain type of expertise in this field that makes me say, ‘I know how to do project work better than I did before this experience, and I have some resources and I have a certain flexible framework that I can use again, and again, and again.’ (LI1)

**Student-related Benefits**

A major theme for Megan and me encompassed benefits project work brings for students. During the interview and our post-observational discussion, Megan and I clearly demonstrated a belief that project work encourages students to become self-regulated learners by focusing on students’ higher thinking skills and life skills. Particularly, we mentioned how project work encourages students to problem-solve, think critically, and
to truly master knowledge so students can apply it in a variety of ways. Megan and I expressed high hopes for our students’ learning. “We start out with a question and they have 10 more questions for that question. And they are going to take that and explore that on their own” (MI1).

I want the children to do activities that enlarge their awareness of what marketing looks like, that allow them to analyze for themselves how persuasion techniques are used to influence people, that allow them to reflect on their own thinking and let them apply these newly learned lessons to their own constructions and creations. (LR1)

Closely tied to students’ learning, we also discussed how project work tends to increase students’ motivation to learn. Megan mentioned how the opportunity to collaborate and the opportunity to succeed play a huge role in motivating students.

They work together often to get the answers so no one is feeling really stupid or intimidated, they’re feeling like, ‘If I don’t know the answer, I can ask my peer,’ and then they don’t feel as out of place.” (MI1)

In my opinion, it was mostly the fact that students were included in the process of designing and enacting a project that made students motivated to learn. “I think that the biggest, one of the biggest things with project work is that they are actually in control over their own learning process. They are the ones that are accountable, partly, for their learning” (LI1). According to Megan and me, project work allowed for students’ interests and their real lives to be included. From my previous experiences with project work, I reflected on how including my students’ interests had helped them become persistent learners. “That interest let them really overcome obstacles that would normally have stopped them and accomplish things academically that, again, were above my expectations as a teacher and what I had seen from them before” (LI1). I continued to mention how project work not only allowed for students’ interests to be included, but for
their personalities, learning styles, and backgrounds to be included as well, providing a much more inclusive teaching environment for students. “It is not just the textbook that is very much ideal for certain types of learners … it is much more inclusive to all these different types of learners” (LI1). Megan and I wished not only for our students to learn through the project, but, maybe even more so, for our students to become excited about learning.

I want to see them happy! I want to see them engaged and I want to see them go back to their parents and say ‘this is what we’ve done and this is what I’ve learned’ and to be able to share that. (MI1)

School-related Benefits

Although gaining support from the broader school community was mostly mentioned as a challenge, reflections on my previous experiences with project work also demonstrated how project work could literally make parents go the extra mile.

So her mother was so excited by this student being so thrilled to write and read about the first Canadian female astronaut, that they flew to Toronto to meet Roberta Bondar, so her daughter could do a little bit of an interview and take her picture and all that. (LI1)

Apart from parent involvement and support, Megan predicted that the principal and the school board would support a project-based approach to learning.

As soon as you hear the word ‘project,’ I think, and ‘learning’ that’s what they are wanting. … They want us to fulfill the curriculum expectations, but they want us to use, do it in a way that is enhancing and motivating to kids, right? So I think the board pushes that. … I think it is a win-win situation, I think it makes everybody happy with this type of learning environment. (MI1)
Collaboration

The challenge of every team is to build a feeling of oneness, of dependence on one another because the question is usually not how well each person performs, but how well they work together. (Vince Lombardi)

As two professionals with very different school careers and cultural backgrounds, Megan and I were likely to experience some challenges and benefits in collaborating on our project. Data of project phase I across the three data sets confirmed collaboration was a common theme for both of us. More so, our collaboration resulted in having a major influence on how the project was enacted and reflected upon.

At the start of the project, Megan and I had been friends for a while. We shared many commonalities: our husbands’ careers, our personalities, our age, and last, but not least, our passion for our career as a teacher. Megan and I had also always gotten along extremely well. As soon as I embarked on writing my proposal for my Master’s of Education at Queen’s University, Megan became curious about my work. “I was interested in your experience doing the program and the whole, your whole inquiry, your whole question and learning, I’ve always been interested in knowing more about project-based learning” (MI1). Although project work had been something Megan had initiated in the past, she also indicated that it had been difficult to continue to explore that interest by herself.

With group projects, there is always a process and it’s organizing the information and trying to figure out what you’re going to do, it takes a lot of time. So, by Laura saying, ‘Hey, let me help you, let’s develop something’ and let’s try it on a bigger level than I would normally do, made me want to do it. (MI1)

Working with a friend, as I pointed out in our interview, had many advantages. First, having known Megan for a while, I knew she was a teacher devoted to her students and ambitious when it came to her own learning. “Megan is a wonderful teacher who is
very committed and has always, as long as I have known her, done courses and done things to develop herself professionally. She’s just very curious and ambitious that way” (LI1).

Second, I believed for the study and the project to reach its potential, I needed a teacher with whom I could build a relationship, with whom I could openly communicate, and who would be willing to let me into her teaching domain.

We already have a trust relationship, I know I can count on her; I know she is a hard-working, committed teacher, and I genuinely like her. Seeing we are going to be working closely together and the success of this project weighs on our ability to work together, I feel really lucky to have her as my classroom researcher. (LR1)

However, working with friends came with risks. As neither Megan nor I wanted our friendship to suffer from our collaboration, we might have a harder time to express and deal with misunderstandings or disagreements. As well, knowing each other on a personal level was not the same as knowing each other on a professional level. Even though I predicted having a lot in common with Megan and her teaching style, I had never seen her in action in front of the class, nor had she seen me working as a teacher before. Significant differences in style or teaching philosophy were, therefore, a realistic possibility.

My reflections showed that I was not too worried about having different points of view. “Whatever disagreements there are, is part of the data. It is ok for us to have different views on things, that is part of it” (LI1). Megan too felt knowing each other had more advantages than disadvantages. “If I saw something differently …, we have good friend chemistry that we can talk to each other about it and there is nothing judgmental about it” (MI1). Still later during the interview, Megan showed she was somewhat worried about feeling judged by her friend. “I am nervous about doing well, I am nervous
about you thinking, ‘oh my gosh, this is Megan’s classroom, are these kids behaving?’” (MI1). Megan’s effort to do what she thought was considered good or expected by me was further evidenced in my reflections of the interview later that day.

I think Megan was quite nervous at the beginning. I noticed she threw out some phrases of my proposal and really wanted to ‘say the right thing’. After a few minutes though, it really became a conversation and we both were able to speak for ourselves, from our own experiences as teachers. (LR1)

Megan felt additional pressure due to the project not standing on its own, but being part of a research study. “I am nervous that the whole world is going to fall apart as soon as you walk in and the project is going to be bad” (MI1). In conclusion, though, Megan revealed it had been our friendship that had ultimately motivated her to participate in the study. “I wouldn’t take this project on if it wasn’t for Laura. Because it is always nerve-racking having a complete stranger in … it’s easier for me, knowing Laura, I know that it is going to be ok” (MI1).

As the project started to take off, so did our collaboration. From the initial conversation with the children, Megan already started to feel limited by time and pressured by expectations. “Laura emailed me reminding me to send her the reflections and poster notes … I can’t believe how fast my week has gone by. The rest of the week was really crazy busy at school” (MR1). I too felt pressured by expectations and the desire to please Megan and her students, the broader school community, my university, and myself. “There’s so much extra pressure now everybody is watching over my shoulder and so many people are involved in this project” (LR1). As I felt responsible for Megan being put under stress, I decided I had to be flexible and work with whatever time Megan could give me. Additionally, I wanted to ensure I did everything I could to help plan and enact the project in a way that would be convenient to Megan. “I can help and
I’ll be in the classroom on those days that we decide to do it, and I’ll be able to take kids in a small group ... and we can just work with what we got” (LD1). Planning meetings were helpful to reduce these stresses because Megan and I were able to communicate these feelings and create a plan that would work for the both of us. Megan in particular seemed to feel more comfortable about the project after these planning meetings. “I like being able to get together and debrief on plans and thoughts. It helps me keep organized and knowing that we have a time frame we need to get things accomplished by also helps me stick to plans” (MR1).

Megan and I believed reflecting together during the project would be beneficial for our own learning. We specifically mentioned how taking the time to reflect throughout the project would stimulate us to think critically and examine project work from a variety of angles.

I think it’s exciting! It’s getting back into that critical thinking mode, as a professional, right? … and you don’t have the opportunity to do things like this. To be able to say ok, how am I really looking at this, how does it look in this perspective? (MI1)

Continuously reflecting on the project together also proved to be beneficial for the organization and the enactment of the project as it allowed us to be responsive to how the project emerged.

Now we can say, ok, we know that, so now if we want to do some group work we do smaller groups and we don’t do them all at once. We can take a few children out or whatever, right? We can use that information so this way we get more dialogue out of the children. (LD1)

Balancing our roles as co-teachers and co-researchers proved to be a challenging task. Megan, still worried about meeting my expectations, was mostly concerned about her role as a researcher as she thought it would require her to think about her own teaching differently.
And I am going to probably rely a lot on Laura, to be able to say, correct me if I do have a certain perspective, or if I am talking, and ‘wait a minute, no, remember you’re not in this role right now, let’s look at it from this point of view’. (MI1)

I was more worried about having to focus on two objectives at the same time: getting the project to become a valuable experience for students and getting valuable data as a researcher. I was particularly nervous about these two objectives contradicting each other. “What seems good for the project or us as teachers might not be based on the constructivist framework. Seeing that’s the objective of the research, we will need to make choices that might feel uncomfortable or unnatural to us” (LR1). The other issue that played a role for my own participation in the project was that I found myself to be a teacher in someone else’s classroom. As I was happy to be back in front of a class again and had a clear idea of how the project should be organized, I knew my pitfalls would be to become too controlling. For Megan and me to collaborate effectively as co-teachers and co-researchers, I needed to force myself to take a step back and respect Megan’s role in taking ownership over designing and enacting the project.

For me to have spent this time reading and thinking about project work in the way that I have, makes me have this picture in my head of what it should look like and how it should be done. However, Megan might have a very different picture in her head and I will have to let Megan do it her way, guiding and involving her in the planning aspect of the project as much as I can, and at the same time, protecting her against the project swallowing up all her time and keeping the project on track to becoming a constructivist teaching form. It’s a tricky, complex part of the collaboration aspect I might have underestimated. (LR1)

In summary, in project phase I, Megan and I determined a topic and initiated the project. Our perceived challenges of project work included guiding students sufficiently, connecting the project with curriculum goals and assessments, and letting go of some control. I further highlighted the potential lack of students’ skills and student initiative, whereas Megan highlighted the challenges of justifying our approach to the broader
school community and dealing with the lack of support, resources, space, and time. Perceived benefits of project work included its potential to connect with curriculum goals and assessments and the opportunity for professional development. I further believed project work’s emphasis on self-regulated learning skills and its inclusive and engaging character was beneficial to students’ motivation and learning. Although a minor theme, the opportunity for parental involvement and support from the principal and school board were perceived as positive attributes of project work as well. Collaboration between Megan and me was based on friendship, mutual trust, respect, and openness. We perceived this collaboration as allowing us to support each other and as encouraging us to learn from our reflections, while sharing the responsibility for the project. Perceived tensions in collaboration included potential differences in views, divergent expectations, and our roles as research participants.
CHAPTER 5: RESULTS FOR PROJECT PHASE II (INVESTIGATION PHASE)

The main objective of the investigation phase was to have the class explore the topic of marketing through primary resources, like field trips, expert visitors, and hands-on activities. Once the children gained these new experiences, new knowledge was represented through children’s reflections, writing, drawings, and constructions. Megan and I organized classroom meetings to continuously reflect on what the students had learned and to raise new questions for further investigation. Lastly, a plan for the culmination phase of the project was decided upon and prepared. Although both Megan and I were planning and enacting the project, Megan executed most of the in-class activities, while I focused mostly on planning aspects.

**Figure 4: Project Phase II**

The project began early January. Megan and I had put our ideas together and had created an outline for the investigation phase. We had decided to use the first few weeks of the project for offering several field trips and in-class focusing activities. Because we felt the
children had a very basic conception of marketing, the objective of these activities was to build a common understanding of marketing strategies and to allow students to see marketing in real-life situations. I arranged for the project to be launched at a grocery store located near the school. “Being in an environment where marketing strategies are applied all around seems to help make the topic more concrete to students and access their current experiences. It allows them to detect marketing strategies right there and then” (LP2).

After this initial field trip, the children wrote a personal reflection of the trip based on the notes they had taken. During the next two weeks, Megan and I offered several in-class activities to further investigate the general concept of marketing. In-class activities included: measuring frequency and type of advertisements in a variety of media sources, developing an outline for a cereal box on a marketing website, analyzing persuasion techniques and hidden messages in advertisements, creating slogans and jingles, creating a persuasive writing paragraph, and creating and presenting a commercial.

For a second field trip, Megan and I planned to take the children to a sports restaurant and a small fast-food restaurant. The objective for these visits was to take what we had learned from our previous trip and in-class activities, and enable the children to further explore the concept of marketing in a different setting.

This time, they can also be interviewers and ask the restaurant owner all about marketing. At the fast-food place, I have arranged for the children to actually be able to taste the food, and talk to the owner as well as a marketing consultant who is currently working for the place to gain more customers. (LP2)

While I had organized the visit to the fast-food restaurant, Megan had arranged a visit with the second restaurant for the same day, as this restaurant was owned by the
parents of a student in class. To prepare the experts and owners for their role, we provided them with some of the children’s questions and an explanation of our approach to learning during this project; particularly, we stressed how students were expected to be active participants in investigating the concept of marketing. “I stressed with the preparation for all the visits that the children would be there as principal investigators, meaning they would take notes and pictures (if no objection) and ask questions” (LP2).

All the children had an individual question or task to complete during the field trip. They were either being a detective (for example, trying to identify aspects of interior design and lay-out), interviewer (asking a specific question to the restaurant owner or marketing consultant), artist (creating a lay-out plan of the restaurant), or photographer (for example, taking pictures of sales strategies) (LP2).

Back in class, children represented their learning in a variety of ways. Students kept all the paperwork related to the project in a portfolio, including drafts, field trip notes, floor plans, project ideas, and work sheets. The children also created a large display at the front of the class, on which they stapled and labeled pictures from field trips, listed marketing strategies they had learned, and included new project ideas. Children further created their own package designs, commercial presentations, and advertisements. Lastly, Megan and I arranged for regular class meetings. “Discussion will be used during several activities like after analyzing commercials, after field trips, and after visits. These discussions will focus on what we have learned, and new questions that might arise” (LP2).

Megan and I also used the portfolio, the display, and the discussions to gain a sense of children’s learning, to understand what direction the project was taking, and to provide the children with formative feedback. “I like assessing their portfolios as it gives
me a good idea of the children’s understanding and progress while they go through certain experiences and activities” (LR2).

As time was limited for the project, Megan and I decided to have students come up with a specific idea for the culminating event during the investigation phase. The objective for the event was for the children to be able to use what they had learned about marketing in an authentic application. Through applying newly acquired marketing strategies to a task of their own, the children would deepen their understanding of these strategies and come across new problems and questions for investigation. Therefore, their learning cycle would be continued, while, at the same time, they constructed something that could be shared with others. “I told them we could create a commercial together, organize a sports event, create a restaurant, etc. Of course, because of the field trip, the whole class shouted: ‘a restaurant’” (LR2).

Megan and I organized several group discussions to create a plan for the final event. When talking about the background music used in one of the restaurants on the field trip, the children got the idea of putting on a show while offering guests a snack. Knowing the children’s talents and interests for drama and music, Megan suggested the children could incorporate these ideas in a one-time entertainment event. The class enthusiastically adopted this idea.

As their interest in performing arts is high, Megan and I both felt this was an excellent opportunity to combine our media literacy goals for the project with the Arts, unexpected, but good. The children had several existing plays that they could use and there are many children in class that are engaged in high-level dance performances, or play a musical instrument. (LR2)
Several more discussions with the children determined what our ‘product’ was going to be, when the event would take place, and what we wanted to do with the money we were going to make.

They were excited and smiling about making the final decision. After breaking them up into pairs and having a class vote, they came to the conclusion that they wanted to focus on entertainment and selling food as a secondary way to make money. They wanted to have the opportunity to run the entertainment for a couple of days and one evening for the parents. (MR2)

To allow students to choose and further investigate a subtopic of the marketing business, Megan and I organized several committees: branding, lay-out and interior design, cuisine, finances, entertainment, and graphic design. Children were able to sign up for a committee in which they were interested.

Each committee has a list of responsibilities for the first week (for example, cuisine: research recipe options that are cost-efficient, create a taste test or survey to test recipes with target group, select five best recipes). Next week we will have the committees work independently and, at the end of the week, we will do a class briefing of our progress and introduce the list for the next week. (LR2)

At this time, committees started working together to organize the final event. Groups organized their timelines and were in charge of fulfilling their responsibilities in a way they thought was suitable. Project managers were responsible for making sure all students were engaged in a task, time was used efficiently, and decisions that affected other committees were communicated. Project managers also ensured responsibilities were met before the class briefing at the end of the week. As the class developed a clear outline and format for the event, Megan and I invited one more marketing consultant to visit the class. The
objective for having another expert at this point during the process was for the children to be able to use the expertise of the marketing consultant for their own project.

We had a real expert in our classroom today: a president of a local marketing company that has worked with pretty much all the local businesses. She had prepared a presentation that showed examples of the work they had done and during her presentation she answered the children’s questions. (LP2)

Challenges

*Character cannot be developed in ease and quiet. Only through experience of trial and suffering can the soul be strengthened, ambition inspired, and success achieved.* (Helen Keller)

**Teacher-related Challenges**

Organizing and managing the project became the main topic of discussion and reflection for both Megan and me during project phase II. A large portion of the challenges we experienced in organizing the project related to guiding students during project work. Both Megan and I noticed that some students required assistance during project work. These students often did not receive guidance, as we were occupied in managing the class and the project as a whole. “I wonder, with those children, what do they gain from this? I don’t think they gain enough, and how do I guide them, when at the same time I am running around trying to manage everything else?” (LR2). In supporting these learners, we were both struggling to avoid providing children with direct instruction, when what we really wanted to do was ask questions to encourage students’ own reasoning. “I am rushing them, I am giving them the answers, because whenever I feel they are not getting it I give them pointers too quickly, without letting them absorb it and giving them time to think” (MD2). Allowing students to come to their own
conclusions was made especially challenging, as Megan and I not only felt pressured by managing project work, but by other demands as well.

I feel the system is bogging us down with events, reports, blocked-off lessons, blocked-off responsibilities, and an overloaded schedule that does not allow for children to process information, make it their own, and apply it in a valuable way. (LR2)

For Megan, it was mainly the pressure to cover the curriculum and to administer assessment that generally prevented her from giving students time for deeper thinking.

I think we feel guilty not giving them the time to think because we always try to get assessment ... I’m teaching to assess. And it’s because that’s put on me. I need to see a number; I need to see a letter. (MD2)

I reflected on assessment because I was struggling to combine an assessment procedure that was process-based with a school system that largely focused on specific end products and learning goals set within predetermined timelines. As project work tends to be inter-curricular and to incorporate a variety of learning opportunities for students, I was overwhelmed with organizing assessment in a way that would suit the project, involve the students, and, at the same time, be purposeful for Megan’s upcoming reports.

There are so many things to assess in so many ways, where do I start? Do I focus on collaboration skills, research skills, critical thinking skills, content knowledge, performance or product? Do I try to do it all? Should it result in a grade? Can I use peer- and self-assessment? How do I organize all of this? (LR2)

Another challenge in organizing the project was using primary resources as a source of learning. As the project involved a topic for which neither Megan nor I had any expertise, we depended on the expertise of others to offer students insight about marketing concepts. Being dependent on other people, however, included being dependent on their schedules as well. “My contact is out of town and I need dates and times confirmed so we can arrange the bus” (LR2). The opportunity for students to learn
further depended on experts’ abilities to communicate with young children. During the field trips and the class visit, the children were faced with vocabulary that was beyond their age level. Despite informing experts about the children’s current level of understanding, the approach we had taken to project work, and what the children were interested in learning, preparing experts for their role was not enough to ensure a valuable learning experience for students. “The experts, even with your preparation with ‘you’re talking to Grade 5 students so you have to be really clear with your message,’ they just didn’t get it” (MD2).

Letting students take control over their own learning process was something with which both Megan and I struggled. As project work allowed for dialogue, for students to move around, and for students to work in groups, Megan felt she was losing the ability to see all activities going on in her class and feared not being aware of students who were misbehaving or were off-task. “I don’t feel good not having control over the class, and there are a lot of things that I missed and didn’t see and it’s unfortunate” (MD2).

Especially when it came to decision-making, Megan had a hard time including students and letting go of control. “I have to remind myself that I’m not going to tell them no, they need to understand why it is not going to work” (MD2). Although I shared Megan’s desire to be on top of everything, I believed this desire for control could take learning opportunities away from students.

I think sometimes we, as teachers, want things to be too perfect and we don’t trust the students to live up to it or let them make a mistake. We always try to prevent that but what if we just let them make a mistake and realize that ‘hey, no one knows we’re selling tickets right there, how come? What can we do to change it?’ (LD2)
As our combat with organizing and managing the project continued, I wondered whether the success of the project really depended on anyone else but Megan and me.

It’s funny, in the end I think it’s not going to be the children’s potential, motivation, and drive for quality that’s going to determine the overall success of the project, but our ability as teachers to create the environment for them to allow them to do so. (LR2)

Student-related Challenges

Although student-related challenges were discussed to a lesser extent than teacher-related challenges, students did bring their own trials. Students’ lack of self-regulated learning skills continued to be an issue during phase II of the project, whether it included students’ abilities in higher thinking skills, work habits, or their level of comfort with the project’s demands. Higher thinking skills like critical thinking activities seemed especially difficult for students. “They had to find out what persuasion techniques were used and find the hidden messages, even the ones that I expected … that had really sophisticated reflections, … had a lot of trouble” (LD2). During group work, students further demonstrated difficulties in delegating tasks, managing time, prioritizing actions, and solving problems.

Many students worked on one task with too many students instead of splitting tasks up and using man-force as efficiently as possible. Others started making drafts for posters or menus without doing some research and looking at examples or consulting the display in class to be reminded of lessons learned. Others still had trouble understanding the main attraction now is entertainment and brainstormed for ideas that did not reflect the main idea of the class. (LR2)

Other students seemed reluctant to take ownership over their learning as they failed to complete tasks or take initiative. “I have reminded the students to check for unfinished work on the sheet you [Laura] have provided for them. I feel that this is their responsibility. … I am not double-checking it for them” (MR2). Students appeared
particularly unsure of their active roles in their groups as decision makers and leaders. As Megan had purposefully put certain children in charge of groups as project managers, her decision to not choose the natural leaders of the class backfired. “The kids that I spoke with today were involved, but at times had difficulty with problem solving within their group, partially due to poor leadership with the weak leaders they have. It seemed like the leaders had difficulty making the final decisions” (MR2). Moreover, students were asking for help with tasks they could complete independently, like finding construction paper or hanging up posters. Observing this increased need for guidance, I wondered whether students’ challenges in working effectively and taking an active role in making decisions was as much caused by their lack in skills, as by students’ discomfort with the level of control the project offered them. “Some children were like, passive, you know, they question things all the time, things that they could have easily solved by themselves, which kind of surprised me” (LD2).

**School-related Challenges**

Megan believed parents of her students were particularly involved with their children’s learning. Megan repeatedly reflected on how she felt pressured by these parents to justify her actions as a teacher. “I’m dealing with a community that has the pressure of parents that want to know why you are giving them a certain grade, so I have to have a good assessment, right?” (MD2).

Juggling schedules with teachers, reserving spaces to work, and obtaining permission from the principal for aspects of the project were other issues that arose for Megan. “Just trying to get the great hall, trying to get the gym, it’s a very busy school” (MD2).
When I spoke with my principal regarding the project being run during the day, she did not feel comfortable charging the kids during school hours … I went back to her today and asked if we could perform at lunch hour and charge the kids money. She said that would be fine. It amazes me that even as a teacher, communication can be challenging. (MR2)

When I saw Megan’s balancing act with other teachers’ schedules and the pressure to justify our teaching approach to the broader school community, I realized how demanding it was for a teacher to organize project work.

To find that balance, to be really organized and be able to explain to everybody what you’re doing, and how you’re doing it, and how you’re going to assess it, and then at the same time giving it enough freedom to let it evolve the way it does, well, that’s hard. (LD2)

Time was a limiting factor for both Megan and me during this phase. I mostly reflected on how time-consuming coordinating, planning, and organizing the project was. “Meeting people, organizing these visits and trips, educating yourself on the topic, it takes an enormous amount of time” (LR2). Planning the project in a proactive manner was particularly challenging as I was often forced to wait for the next class discussion or observation to understand where the children were at and how their decisions were going to influence my planning. Megan felt the project consumed much of her in-class time, often more than she was comfortable to give. “We have a field trip on Thursday or Friday morning. … We leave first thing in the morning; say 9:00 am- 12:10 pm. Already for that day alone: 200 minutes used for the project just in one day!” (MR2).
Benefits

When love and skill work together, expect a masterpiece. (John Ruskin)

Teacher-related Benefits

As Megan and I were organizing and managing the project, our comfort with the emerging character of the project approach grew, particularly when students were starting to lead the project into a more specific direction of creating a restaurant. “Megan and I looked at each other; this was exactly what we had anticipated and what we were hoping for. I’m excited because I know there will be lots of opportunities with this concept” (LR2). Megan started to feel more pleased with her role as a teacher organizing a student-centered project. “It is not teacher-instructed. I’m not standing there telling them what to do, I’m questioning them, right? And there, it’s not, you don’t see a desk, it’s not military, right? You’re everywhere” (MD2). Seeing the children’s enthusiasm further caused Megan and me to feel more comfortable with our approach. “It’s funny; every time I get to work with the kids I’m totally energized and positive again” (LR2).

Megan and I became accustomed to using primary resources as well. Trying to provide students with the right amount of guidance, I had organized jobs and research questions for children to choose from and to take on our field trips. Modeling these questions and encouraging students to be active participants in collecting data for our investigation in marketing became a successful experience.

I didn’t know what they were going to ask and if they would get enough out of it, so I did it. Then they asked 10 more questions. So afterwards I felt really good because I thought ‘oh, so it’s OK to model that and give them something to work with, and then from there let them do it themselves and see what they come up with. (LD2)
Although a challenge to begin with, Megan and I became increasingly enthusiastic about using a more process-based approach to assessment. I especially felt that using a variety of assessment strategies, conducted on multiple occasions, helped us better grasp children’s understanding of marketing. “These were Minds into Marketing I hadn’t seen much evidence for in the portfolios. To me, that’s once again evidence that we limit ourselves in how we let students demonstrate their knowledge” (LR2). In dealing with stresses related to the upcoming reports, Megan was starting to utilize the project as part of her assessment requirements.

After our field trip to the fast food place on Friday, the kids can write a persuasive writing piece on ‘Why The Fast Food Place Is The Best Place to Eat Lunch’ (or on similar lines). The kids would also have to present their work, which will help me gain an oral mark for their report card. (MR2)

As Megan and I reflected continuously on the project’s process, we took note of lessons we learned as teachers in planning and enacting the project and used that information for our own professional development. Obviously, not planning the project simultaneously with report time became an important lesson for planning future projects. “My reports are due in 2 days. … Note to self: don’t start project work near reporting time” (MR2). Megan would instead plan project work at the beginning of the year and take several months to complete the project. I felt that combining the final event with the investigation phase was an efficient way to save time. “Now at least the end project is also part of the investigation phase; so throughout creating this event, they learn to apply their marketing strategies” (LD2). I further learned a valuable lesson during the in-class expert visit. To me, the last 15 minutes of the visit were highly effective as the marketing consultant visited the committees to provide students feedback on their own marketing project. “This [the expert visiting each group] allowed her to see the work of the children
and give them specific expert advice on what they were doing. … It also helped the children to ask relevant questions” (LR2). As Megan and I became more knowledgeable about how to organize and enact project work efficiently, we appreciated expanding our own knowledge on marketing as well.

I educated myself on grocery marketing strategies. It’s so much fun to learn about all this myself. Marketing is really in the little things we never even seem to think about. Nevertheless, it influences our minds and our choices. Becoming aware of that is quite an eye-opening experience. (LR2)

Megan mostly reflected on her developing her own role as a teacher during the project. Particularly, she felt she had learned to take a different approach in communicating with her students and encouraging students to use their own reasoning and problem-solving skills. “If anything, it makes me work on my questioning to them” (MD2).

**Student-related Benefits**

As I walked into the classroom I was greeted so enthusiastically by the children, you could tell they were excited to work on the project. I immediately had children around me asking me questions about the project. I noticed that many of them had been thinking about it and some had even worked on it at home. (LR2)

During the investigation phase of the project, the true motivational powers of project work revealed themselves to Megan and me. One of the reasons we believed project work engaged our students at a high level was because it used an approach that was inter-curricular and involved an authentic topic. “Otherwise it would have been taught like persuasive writing, as a thing in itself. Now, embedded in this project, it suddenly went from just a skill they had to learn in school, to something they recognized all around them” (LD2). Including students’ interests and ideas became another factor in motivating students for project work. Both Megan and I were taken by surprise as students’ initiatives evidenced their responsible behaviour, creativity, and thoughtfulness.
“There were so many ideas I hadn’t thought of myself, it really made me realize the value of letting students have a voice, something that seems so obvious but we so often forget” (LR2). Allowing students to work in groups, to move around the classroom, and to communicate with each other, caused some valuable moments as well. “When they got busy in their groups, I witnessed good communication amongst them, some delegating going on and some serious problem solving” (MR2). Although Megan felt overwhelmed by the noise level and movement in class at times, I felt all students were engaged in their project and on-task.

We put the children to work in their committees with well-defined responsibilities and a time-line. It was so neat to see the whole class engaged, all doing different things but all working hard. Some were doing research, others were brainstorming and debating, others initiated a survey, and some were consulting with other committees (LR2)

Although students’ level of ownership and active roles in decision making had seemed challenging for some students at times, students became more comfortable with their level of control and responsibility as the project progressed.

One group for example asked the class to vote on the logo and name of the event. They had come up with two options, and wanted the class’ opinion. I loved this, because it showed how much this is really the children’s creation and how much they take ownership over their project. It also forced them to reason with each other why they chose one concept over the other. (LR2)

Starting the project, Megan and I felt the students’ understanding of marketing was basic. “I could tell from the beginning, from the discussions, from talking, that they didn’t really know a whole lot. … They didn’t notice. It was like they have this tunnel vision” (MD2). As we embarked on field trips and class activities, however, Megan and I noticed how students were adding onto their knowledge and skills by applying their newly acquired knowledge about marketing to a specific concept of their own.
One student from the finance committee, for example, was working together with a person from the cuisine committee in order to estimate the costs for ingredients by checking the grocery store’s website. Others got a list from the registrar’s office to find out how many students each class has so they could figure out how to do the location layout and place a well-estimated food order. (LR2)

Particularly students’ higher order thinking skills seemed to be encouraged through project work as students were organizing, problem solving, researching, and debating. “I see the kids happily engaged, sharing ideas and opinions, researching, critiquing advertisements, developing their thoughts about why companies do what they do and recognizing techniques that they have already learned about. This is all positive assessment to me” (MR2). Students’ increased knowledge about marketing was demonstrated in their portfolios as well. “Their notes were more detailed, more relevant, and showed more insight into marketing strategies” (LR2).

That’s [students’ persuasive writing pieces] when I could really tell where they got it. Because the persuasive part was really about how do, how do marketers catch you, what words are trying to persuade you? ... And I got a lot of those words out of them, so they started using them and thinking about it. (MD2)

School-related Benefits

Contrary to our feelings of being pressured to keep to regular curriculum activities, Megan and I experienced support from the broader school community during this phase of the project. “I expected some complaints from parents about exposing the children to fast food, but none so far” (LR2). Megan was getting positive comments from parents about their children’s engagement in the project’s topic, and parents wanted to be involved and signed up to take part in field trips.

We have added an extra stop to another restaurant. We will be stopping at Mike’s, this is a pub owned by one of my student’s parents. The family is happy to help with this project, and I look forward to the experience the students will have. (MR2)
Although Megan felt somewhat uncomfortable to ask for parents’ time and involvement, I believed having this parental involvement was beneficial to the project and the students.

It’s great having all that parent involvement early on in the project. … It’s so motivating to the children to have their parents involved. It’s a topic that can be discussed and explored at any household in any way. (LR2)

**Collaboration**

*Cooperation is the thorough conviction that nobody can get there unless everybody gets there. (Virginia Burden)*

Whilst the first project phase had merely been a factor of two educational professionals coming together, the second project phase implied working together as co-teachers and co-researchers. Naturally, having different cultures, experiences, and roles, this cooperation included some conflicts between Megan and me. Moments of frustration particularly involved having different views on decisions made by either one of us. For example, as Megan was the teacher of the class and knew the students best, I felt she had to make decisions about grouping students together. However, I disagreed with her decision to appoint project managers. I particularly doubted the value of choosing students who seemed uncomfortable being put in this leadership position.

Some children and people are natural leaders and some are not. I don’t think we need to make people into what they are not. I think encouraging children to become leaders has more to do with inspiring them to follow their dreams, investigate, take risks, question, and collaborate, than to put them in a position of being in charge of others. (LR2)

Megan had her moments of frustration as well. Feeling the pressure of time and accountability, Megan urged me to keep the project as manageable as possible. Many of the children’s ideas we had initially agreed upon were changed, because Megan feared these ideas would become troublesome to realize. Although I shared Megan’s desire to
keep things uncomplicated, I felt the project started to shift more towards our preferences and away from students’ ideas. When Megan suggested focusing solely on the entertainment aspect of the event, I opposed not letting students sell food and drinks, because doing so had been one of the first and main ideas of the children.

I would have cancelled, if I would have had it my way I wouldn’t have had the food, as an option, but we worked with the kids because you were like ‘OK, well, it’s not constructivist’ (laughs). The hell with constructivism right now! I was more like ‘Damn it, Laura!’ but, in the end, they got what they wanted out of it. It was a great idea. (MD2)

As Megan was forced to juggle the project along with other demands, I was forced to step back and let Megan spend time on other priorities. Although I understood Megan’s position and was grateful for any time the project could get, I could not help but feel frustrated when students did not have class time to work on the project.

I spoke with Laura yesterday to let her know we did not get a chance to discuss the project as a group. I sensed she was disappointed because she wants to get started on pre-organizing the planning process for the kids. I am sure she is frustrated at moments with this, but we did not have any time, and I had lots of students away. (MR2)

Megan and I had different views on assessing the project as well. Megan was not concerned about assessing students’ learning throughout the project as she believed she would not be able to use this information in time for the reports, and because she was already convinced that the children were learning. I too strongly believed the students were learning from our discussions and informal observations, but still felt the need for assessment.

I believe in the value of checking whether your intuition is right, in being able to back up why you teach a certain way, and in showing students you value team work, research, critical thinking, and creativity just as much as you do grammar and math. (LR2)
Conflicting views, however, did not stand in the way of our collaborating in a friendly, productive, and respectful manner. In fact, Megan seemed to enjoy having an extra person in class while I was thrilled to be back in a classroom and to interact with students. As the project was moving towards its concluding stage, both Megan and I were disappointed our collaboration would soon come to an end. Above all, we enjoyed how co-teaching allowed us to share our workload and teach more efficiently. “You come along, and part of me thinks, … if I had someone like Laura, to actually work with every day I would cut my wage in half, just to divide the weight” (MD2). Megan mentioned how pleased she was to share responsibilities on several occasions, especially when report time was approaching, and she felt pressured to complete her final assessments. “So I’ve been busy and frazzled, and you come in and you are helping me out, and I’m thinking this is probably the worst report period stress I’ve ever had” (MD2).

Although we were sharing the responsibility of organizing and enacting the project, Megan and I had separate tasks to fulfill. As the teacher of the class, Megan was in charge of decisions relating to our schedule, the school environment, and the students.

For you it was easier to say, ‘OK, now let’s take those ideas, this is going to work, this is not going to work’ because you’re in the classroom, you know the children, you know the school and everything else. So you’re able to envision it, whereas I am not. (LD2)

I, however, focused more on planning and organizing the project, preparing for activities and assessment, and ensuring the project was steered towards a student-centered approach. Although our different roles in the project conflicted at times, these differences mostly worked to our advantage.

What I liked about the combination of you and me. … You were the organizer and you had all the planning and all the ideas, you were getting all the information organized. And I was the one … I could visualize what all of that was going to
look like, and so when we came to an agreement to what it was going to look like, we were both comfortable with it, and we just fit it and it worked. (MD2)

In summary, the second phase of the project allowed students to investigate the topic of marketing through primary resources and experiences. Megan and I continued to be challenged by the students’ need for guidance, combining the project with curriculum demands, using primary resources effectively, and designing assessments. Furthermore, Megan was uncomfortable with the lack of oversight and control she had over and during project work. Students remained challenged by the lack of self-regulated learning skills and demonstrated limited comfort with their active role in decision-making. Megan further felt challenged to justify the project approach to the broader school community, by juggling schedules, resources, and spaces with other teachers, and by dealing with the time frame the project demanded. As the project progressed, however, Megan’s and my comfort level, understanding, and skills regarding the project increased as we practiced to use primary resources, to guide students, to design assessments, and to manage the project’s time. Likewise, students seemed to increase their level of comfort and ownership and increased their understanding and use of marketing strategies and higher-order thinking skills. As colleagues accommodated our needs and parents became involved, Megan and I came to perceive the broader school environment as a source of support. Differences in views, such as, how grouping should be done, what direction the project should take, how much time should be spent on the project, and what the assessment requirements should be, continued to create tensions for Megan’s and my partnership. Despite these tensions, however, Megan and I perceived our collaboration to be beneficial to our learning and working as it enabled us to share the workload of the project and allowed us to combine our unique strengths as teachers.
CHAPTER 6: RESULTS FOR PROJECT PHASE III (CULMINATION PHASE)

As the investigation phase became more focused on the final event, the project transferred into its last phase: the culmination phase. This last phase aimed for children to continue to gain knowledge in marketing concepts by applying this new understanding to a construct of their own. Additionally, the culmination phase allowed students to share their knowledge with others. Most importantly, this phase gave students an opportunity to assess and reflect on their own learning. At this point during the project, Megan and I worked together intensely, sharing in-class responsibilities and tasks.

Figure 5: Project Phase III

Class meetings were essential during this phase because Megan and I utilized these meetings to continuously refine the outline of the final event, steer the children’s activities where necessary, and encourage students to apply acquired knowledge about marketing to their products, such as, posters, menus, radio advertisements, and logos. During these class
meetings, the class decided to shape their ideas for entertainment into a class play and talent show and make money by selling tickets for the show. “It was awesome, … they had to use all the marketing strategies that we had talked about and that they had observed, and apply it to how they were going to sell themselves as a class” (MI3).

As the outline for the show was becoming clear to all students, committees went from brainstorming ideas to fulfilling their responsibilities, continuously drawing from the research and activities they had done during project phase II. Although each committee had different responsibilities, students were forced to collaborate closely because many decisions involved other committees as well.

Especially when organizing an event, things seem to change every day. The hall can’t be booked on the right date, students change their minds, the costs are too high … etc. Students will have to work together to come to appropriate solutions or recognize mistakes and draw lessons from it. (LP3)

During this phase, students started applying learned marketing strategies to their own products. The branding committee had the class vote on a logo and slogan, put word-of-mouth into action on the schoolyard, informed fellow students of the event through airing commercial-like morning announcements on the school radio, and selected prize winners of free tickets and popcorn. Posters were created and hung up at strategic places across the school. Polished invitations were made and distributed to parents by the Graphic Design Committee. The Cuisine Committee created a menu, organized all the materials needed for food sales, and provided volunteer bakers with recipes. Locations were reserved, furnished, and decorated by the Design Committee, while the Entertainment Committee was busy rehearsing the show to the point of perfection. In the meantime, the Finance Committee held a tight grasp on expenses made by all the committees, through their self-made bookkeeping system.
Dividing the class up into committees allowed students to choose a field of interest and talent within the concept of marketing. Each student was therefore able to apply and learn marketing strategies within a concept that was relevant and valuable to them. (LP3)

As winter weather caused fellow students to wish they could enjoy their recess time indoors, the class decided to organize the show during lunch hours. Students decided lunch time would be a good time to sell popcorn as well, because students would be hungry around this time and the popcorn’s scent would entice students to purchase. Additionally, students reasoned, many of their peers liked popcorn, and it would be cheap to produce. Students scheduled an evening performance to share knowledge with parents and family members. Because they thought adults had more money to spend, they doubled ticket prices for adults and offered tea and cookies for sale instead of popcorn. Tickets were sold every day in the week before the event at a brightly decorated ticket booth at the main entrance of the school, because students reasoned that that location held most of the traffic flow.

On the days of the event, all students had volunteered for certain jobs, for example: doormen to check for tickets, salesmen to offer taste samples to students, cashiers, popcorn bakers, decorators, and ushers. Popcorn and cookies were sold half an hour before the performance. “It was awesome to see popcorn bags with logos everywhere you could look. The enormous audience proved the marketing strategies the children had selected had done wonders” (LR3). The students presented their show, which included a play, several piano pieces, a violin piece, a dance performance, and songs, to the primary grades.
The first performance with the primary kids and kindergartens (in the gym) was a challenge. It was hard for the children to sit for the whole performance, and it was difficult for students to hear the play with the microphone breaking down. (MR3)

The second day of the event was a repetition of the first, but this time students performed their show in front of senior students.

I love how we spread it out over two days, so the children had the opportunity to get rid of some nerves and apply what they had learned yesterday. The performance went so much smoother, and they felt so proud performing in front of the older students. (LR3)

In the evening, students came in early to set up the same performance for their parents and family members. Students in charge of the food sale welcomed parents into the school, while making sure to collect tickets and offering parents a drink. Megan and I had decided to extend the evening performance to explain to parents how the show had come about as a result of students’ learning about marketing. “It was great hearing that many of the students had talked a lot about the project at home. I could tell the parents knew about the whole process we had gone through” (LR3). As the class had decided to give the proceeds of their marketing project to their school charity fund of Free the Children, Megan and I had created a short video of the intent of this organization and rehearsed a final song of John Lennon’s “Imagine” with the whole class. “Everything is done. I can’t believe it. Where to begin? It was a great success! All the performances went well. The last one, which was last night, was the greatest performance of all” (MR3).

I loved how this allowed the children to share their knowledge with peers and parents. I could tell how proud they were of their accomplishments and how exciting this stage of the project can be for them. It truly is a culmination of events. (LP3)
To involve students in assessing their own learning throughout the project, Megan and I asked students to fill out a rubric to assess a committee member’s collaborative skills. The children received these rubrics in a closed envelope and completed these assessments anonymously (see Appendix G). Next, committees were asked to fill out another rubric in which they indicated, as a committee, how they felt they had fulfilled their responsibilities and completed their final products. Along with my assessment of students’ portfolios, I took the children’s assessments and created individual project feedback cards for the children, providing individual comments for each child on her or his ability to recognize and identify marketing strategies, collaborate effectively and respectfully, and deliver quality work.

Children need to take ownership over their own learning and accomplishments and it’s not important whether I give them an A or C or 8 or 6. It’s their own knowledge about having challenged themselves, having overcome obstacles, having learned new things that will bring them their satisfaction … and allows them to become aware of their own limitations and strengths. (LR3)

Megan and I organized a final class meeting to celebrate our success as a class and reflect on the project as a whole. Students reflected on their individual work, group conflicts, learning moments, and, particularly, how they felt about their own specific role in the project. During this meeting, the Finance Committee presented the results of the class’ marketing efforts.

We raised up to $700, which is more than the whole school so far has raised for their charity. I could tell the children were impressed with how much money one class can make if they put their marketing in place. (LR3)

The children, however, did not spend too much time looking back as they started offering new ideas for future projects.
Organizing another show at the end of the school year seemed to be the favourite option among the students, particularly if this show would include all students in a play and they could use the proceeds for a school trip of their choice. “They keep asking, ‘Are we’re going to do that, are we going to do a play?’ So I said, ‘Well, we’ll see if we can get through the curriculum, and then in June, if we can pull it off’” (MI3). For now, however, Megan and I were content to end the project on a wonderful note. “This project was an amazing learning experience for my students and me” (MR3). Right now, I am simply happy it is over. It is fair to say that project work is exhausting. It just is, and there is no way you can ever do it right. However, I saw one child overcoming her anxiety and perform. I walked into a classroom where children did not even notice I was there. I saw students who wanted to stay inside during recess to work on the project or who drove their parents crazy with stories about what they have done and learned. That is what makes it all worth it. It just makes you say, in the end, ‘let’s do it again, and let’s do it better.’ (LP3)

Challenges

Success is not final, failure is not fatal: it is the courage to continue that counts. (Winston Churchill)

Teacher-related Challenges

As the project reached its final phase, Megan and I required more in-class time to complete preparations for the students’ final event. This requirement made it more challenging to complete other class work, compared to the previous phases of the project. “I found it hard, honestly, to balance it with curriculum goals, you know, media literacy is just a small component of language, right? So it took up a lot of our time” (MI3). The project did include reading and writing activities; however, these activities differed from Megan’s regular classroom routine. Although Megan wanted to take a more student-
centered approach, she felt uncomfortable letting go of her scheduled curriculum activities.

If someone came up to me during a guided reading thing, and we weren’t doing project work, and they said ‘We want to know how to advertise,’ I would say ‘Well you can do that at home’. Again, because of the system, this is the way I need to teach it, because this is what I’m being told about how to teach you. I’m not teaching you to be deep thinkers. (MD3)

I had trouble balancing students’ curriculum activities with the project for different reasons. Finding secondary resources that allowed students to read about marketing concepts on a child-appropriate level was particularly difficult. “There was only one book. I visited four, five libraries, and I found only one book about marketing that was appropriate” (LI3).

Megan and I were not only trying to balance the project with regular curriculum activities but with our personal lives as well. As the final event approached, our energy level noticeably went down. “Poor Megan and me, we’re both so exhausted; one is pregnant, the other not feeling well and overloaded with finishing reports” (LR3). Particularly balancing project work with personal priorities like those of marriage and family life made Megan wonder about incentives for teachers to enact project work in their classrooms.

We are salary-based, so whatever I do in a day, whether I work 24 hours a day, my salary does not change … People who have families usually put their families first. At least Laura and I both do. So project work depends on what teacher you want to be, and what your priorities are. (MI3)

As in the first two phases of the project, Megan and I were still having trouble dealing with the emergent character of the project. Because we preferred to have a steady plan, it became challenging for Megan and me to be flexible and continuously alter the project based on what was either more realistic or more responsive towards the children’s
interests. “I could tell Megan and I both felt overwhelmed today. I’m pretty good at
organizing events, but I feel things are changing so much within so little time” (LR3).
Only when the final event began to form itself into a well-organized event did Megan and
I start to feel more comfortable. “I found this part perhaps the most rewarding as your
worries are starting to fade away as you see it all coming together and you know you’ve
brought the project to an end successfully” (LR3).

Not having a well-paved path in front of us made it difficult for Megan and me to
guide students as well. Our constant struggle to respond to students’ interests and yet to
provide students with structure and guidance became evident in many of our reflections.
We fell short in assisting students sufficiently. “I feel what I could have done for some of
those kids, what I should have, is … I guess, accommodate them, but I didn’t” (MI3).

I had trouble distinguishing guiding students from instructing students. “I felt the
children needed more guidance than I initially was willing to give them. But, I was very
hesitant to structure it too much, because I didn’t want it to be teacher-directed” (LD3).
Later during the project, I considered whether or not instructing students could go hand-
in-hand with taking a student-centered approach to learning.

Well, and my conclusion now, I don’t know, I think now I look more at it as
something like, how much can these children handle, and adapting my role to that.
And within that space, you know, give them the freedoms they can have but with
limits … you give them what they can handle. (LD3)

Whereas I was getting more comfortable with taking control, Megan was having
trouble letting go of it, as she did not expect her students to deliver quality work and to
behave properly without directed instruction. “I have 26 kids, I can’t let 26 kids go and be
inquisitive without chaos, or losing somebody, or being responsible for them in the end”
During the last interview, however, Megan indicated it was more her own need for direction and oversight that caused her desire for control.

Near the end I wouldn’t even know what was going on, I was working with one group and Laura was working with another group … I just needed, I think, more directed teaching. With a big group of kids, it is sometimes more effective than allowing them to do their own thing. (MI3)

Megan’s need for controlling the process became evident in rehearsing the performance as well. The Entertainment Committee, in charge of organizing the actual show, received much direction from Megan, as she felt pressured to deliver the performance in a certain way and to certain standards.

Everyone has been very busy trying to pull this event together. I am concerned with getting the performance part down to perfection. I feel that if we are charging students and parents money to see a performance, that it needs to be done well. (MR3)

**Student-related Challenges**

In working with the students, Megan and I were challenged by the students’ lack of independence and need for assistance. Many students needed encouragement to be inquisitive, to do their research, and to apply marketing strategies to their products.

Before they created a menu, they needed to be encouraged to go online or to go to the pictures or get a menu and look at ‘OK, what happened here, how did they organize all that information?’ They didn’t have that natural thought of ‘OK, I need to do my research first of how this works and then apply it’, it was almost if they were skipping steps that way. (LD3)

A number of students had a difficult time communicating and problem solving without requesting the assistance of the teacher. “And you have some kids who come up and look at you like they’re stoned and ask you a very basic question” (MI3). Other students had the capability to perform well within a more complex task like project work, but lacked certain work habits to fulfill their responsibilities and complete their work.
That is what I found hard with the assessments too; here you have this portfolio that basically doesn’t show enough. … Not because he does not understand, but because he did not put any work into it. And that in itself is something to worry about and work on. (LD3)

Overall, Megan and I were especially surprised we had to model for students how to be inquisitive. “I feel that we really did have to give them cues and direction of what to look for, because a lot of them wouldn’t have made note ‘Oh, I did not think about using that colour’” (MD3). Often, Megan and I wondered if students’ need for teacher guidance had more to do with a lack of comfort than with a lack of skills. The last class meeting confirmed these thoughts as many children revealed they had found parts of the project challenging, particularly at moments when they did not understand what we expected from them. “I think that was interesting that they felt like, ‘Oh, do we have to sort all this out? Why is there not someone instructing me, telling me exactly what I need to complete?’” (LD3).

**School-related Challenges**

Working in a small classroom, separated from the main building, was particularly challenging during the last phase of the project. “You see everything, you can’t move around. If they were working in groups, they were still sitting next to each other, basically, so they didn’t have the space to really sit down quietly together to discuss it” (LI3). Megan and I required the main stage and the gym for the rehearsals and the actual performance, as our portable was too small for this purpose. Scheduling these spaces to be available, however, presented a wide range of challenges. “I found that I had to check, like, ‘Is this OK with this teacher? Can I take this teacher’s time?’ Or something would come up and it would totally interrupt our plan” (MI3).
As predicted in the first interview, justifying our approach to parents became another challenge. Although we had received nothing but positive feedback on the project, Megan reflected on one parent interview she had scheduled just after the project was completed. During this meeting, Megan felt she had to defend the fact that the project had taken time away from some of the regular curriculum activities for the past few weeks.

It’s just you get that odd parent who will just ruin it for you and it will feel like, it brings you back and you question your teaching abilities and then you think, pffft, I’m not going to do project work any more, because apparently parents just need the curriculum. (MI3)

I could understand why it was difficult to justify a student-centered approach, especially when you are still learning as a teacher how to organize and manage the project effectively in combination with other requirements.

You have to be damn sure what you are doing and why you are doing it, and have your argumentation for that ready, for those conversations. For you to put in all that work and effort and then not getting any credit for it in the end, you have to have a very strong case, a very firm belief, that this is the way to do it. (LI3)

Not surprisingly during this last phase, time became a pressing theme for Megan. “It just makes you realize, it’s not realistic that we would do this in six weeks. I would need more time” (MI3). For Megan, enacting the project in six weeks would be simply impossible to do on her own. “I would have to start in September to be done by June. To be real, I would have taken the whole year to do what we did” (MI3).
Benefits

We learn more by looking for the answer to a question and not finding it than we do from learning the answer itself. (Lloyd Alexander)

Teacher-related Benefits

At the final stages of the project, Megan and I went from growing more comfortable with our approach to enjoying it. We felt pleased with the project as it coincided with our core beliefs about how and what we should be teaching. For instance, although she felt challenged by not being able to follow a textbook, Megan appreciated using the real world as a source of learning. “It wasn’t academically focused. It was surrounding us, you don’t have formula to follow about what we’re learning, it was using your own common sense” (MD3). Megan especially enjoyed her role as a teacher in probing students to become more inquisitive. “We are always the ones thinking of questions … instead of just giving them time to think, and notice, and develop” (MD3). I enjoyed the project as it allowed me to focus on teaching life skills just as much as teaching academic skills. “With all the assessments that children are getting and everything, it is all about academics. The message that comes from that and is sent to the children is that we value academics more than everything else” (LD3). More exciting, in my mind, was how our approach to assessment included students in their learning process. “How do we encourage self-awareness if we never include their own voice in our assessments? I like this. It feels good” (LR3).

Reflecting continuously on the process of the project encouraged our own self-awareness as well.

I have so many ideas of how I can continue growing project work and just my approach to teaching in general. I think just forcing myself to reflect daily, no
matter how annoying sometimes, has helped me monitor my own teaching habits and change them where they conflicted with my philosophy on education. (LR3)

Megan too felt reflecting was beneficial for her own learning. “Normally, I am like, ‘OK, I’m going to teach this today, I’m going to hand this out, this is what I need to get through,’ whereas now I’m really having to constantly think” (MI3). Although Megan felt the project forced her to become more aware of her own teaching, she would not use a similar approach to reflecting for future projects.

I was not reflecting until the evening, so I had let time pass but then I was tired and I would screw things up. … I do not think I would reflect with project work the way we reflected. I would be doing the ‘make note to self: Do not do this again.’ (MD3)

Although Megan and I felt reflecting on a continuous basis was annoying from time to time and would change the format for future projects, we felt reflection helped us understand what was happening during the project and why. “It helps you identify issues during the process, so you can respond right away. In so many ways, we are learning so much as teachers that I’m wondering who gets the most out of this project, them or us?” (LR3). Megan and I took note from lessons learned throughout the project, such as; planning a minimum of three months for project work, encouraging research skills and group work in other types of lessons, and creating a plan for learners who need more guidance. Although Megan and I both mentioned how we were going to apply these lessons learned to future projects, Megan did point out several criteria for her to continue with project work.

I have to have my whole day, I have to have a good teaching partner, and I have to be organized and have something well thought out and be willing to put in the extra hours, to do it. But I would do it again if I had all that, absolutely. (MI3)
During the last interview, however, Megan indicated how the project had opened her eyes for how she could improve some of her regular teaching habits, like involving students’ community and real-life experiences.

I’ve learned that I live very close to a lot of resources that I could take my kids to and just go out of the box and teach them by getting out and getting them exposed into the community. That is one thing. (MI3)

For me, assessing the children’s learning in a process-based, formative manner had been a valuable learning experience that I was looking forward to applying to my general teaching.

I spent a lot of time thinking through different types of assessment strategies that I normally wouldn’t have used, and I really learned a lot of that and I am totally going to use that for the rest of my teaching, whether it’s project work or not. (LI3)

**Student-related Benefits**

Megan and I felt we had learned a lot as teachers; however, our reflections suggested students benefited greatly from the project as well. Megan and I perceived the project’s authenticity as motivating to students, particularly as the opportunity to apply marketing strategies to their own products seemed to increase their sense of ownership.

All the students who worked ticket sales or food sales seemed to really enjoy their responsibility. They all worked very well in a team environment. They all took their job seriously, and I was impressed with how most of the students were so enthusiastic with doing a sales job. When some students were having difficulty with calculating money or change, their peers stepped up to the plate to assist. (MR3)

As the project allowed students to explore interests and share their talents, Megan and I could see the children’s excitement grow. Moreover, as students’ excitement and ownership increased, they started to overcome some of the challenges they had
encountered. For example, one student with severe social anxiety decided to perform on the days of the final event.

Everybody was like ‘Yeah! (claps), I didn’t know she could do that!’ and she was beaming and it was such a … you know, when do we offer children with those types of talents to use that in the class or school, not too often, right? (LI3)

Megan and I were not only impressed with students’ enthusiasm and initiative, but with students’ learning as well. Megan and I especially felt the project allowed students to develop important life skills as we saw students becoming increasingly efficient in planning their time, organizing their activities, working together, and taking leadership. “I noticed how many students started to visualize the event, and with that, started to better identify problems, adjust their plans, prioritize their time, and ask relevant questions” (LR3).

My reflections especially show my appreciation for the project to include challenges in working together and problem-solving as learning opportunities.

What we tend to do every time there is a conflict or a problem we want to be on it, … but there is huge value in a moment where children actually have to deal with a group conflict … You will not see it in the curriculum and you won’t be able to check it off on your reports, but damn, that’s what I would want my students to walk out of my classroom with at the end of the year. If I can give them that, you know, those are the life skills. (LI3)

Megan and I felt the students reached a deeper understanding of marketing, especially in this last phase of the project. “I found the learning really started to evolve in these two last weeks, only because they could apply the learning, because how were we going to advertise ourselves?” (MD3). Apart from gaining a deeper understanding of marketing concepts, I believed the project allowed students to understand the essence of other types of knowledge and skills as well.
We could say, ‘We cannot use this poster for our project because there are like 600 spelling mistakes in it.’ … For them just not having that as a separate lesson, but within this project, embedded, I think there was lots of opportunity for academics. (LD3)

The last class meeting, in particular, demonstrated to Megan and me that the project had been a valuable learning experience for our students. The meeting made us validate reflecting with the children as a learning opportunity in itself as well. “It’s funny how I usually tend to skip that step, just because you’re already looking forward again and the event is over, but quite a bit came out of that discussion today” (LR3). As students were reflecting on the project as a whole, Megan and I were surprised by students’ ability to identify learning opportunities the project had offered them. “I thought that was a really good comment from Grade 5-ers to say ‘I found it hard to compromise’ and to acknowledge that” (LD3).

School-related Benefits

Overall, Megan felt supported by her principal and colleagues in organizing the project. “I had to rearrange schedules with people to get the great hall or to get the gym, … some of them came in to watch the show, you know, supported me that way” (MI3). Megan particularly liked how the project included the local community, whether it was by inviting guest speakers from local companies, going to the grocery store, going to the restaurants, or getting donations for the show. Sharing the performance, especially with parents, was a highlight for both Megan and me. “The parents lingered for a long time afterwards and talked together. I feel evenings like this really brings a community together and gives us an opportunity to show what happens in school and why” (LR3). It was satisfying to gain supportive comments from parents. “I had so many parents
approach me with positive feedback regarding the project, the performance, and the purpose” (MR3).

**Collaboration**

*And remember, no matter where you go, there you are. (Confucius)*

During the cumulative phase of the project, my role changed from being on the sidelines and focusing on the planning aspect of the project to taking a more active role in the classroom. I felt this change in my role was required, as we still needed to do much in preparation for the final event. I could sense Megan was worried about getting the project completed on time. She seemed overwhelmed by the many aspects of the project, and I felt obligated to help Megan as much as I could. My change in tasks, however, made it difficult for me to focus on anything else.

It’s hard right now to think as a researcher as I get so swamped with the project I just want to focus on that. I don’t even care about my study right now; I just want the project to go well for the children and Megan. However, I know that I am going to regret that later, so I will need to keep carrying two hats. (LR3)

As Megan was concerned with the class play being up to her standards, she turned her focus on the Entertainment Committee responsible for the show. While Megan was mostly rehearsing, I focused my attention on the other committees as they were organizing the other aspects of the event. “The performance is coming together and Laura has been supervising and organizing the other parts of the project. She is helping the other students make sure we have tickets, posters, announcements, supplies for snacks and drinks ready” (MR3). Working together at this level and intensity allowed Megan and me to combine forces and achieve more in the little time we had. “Oh, well, we wouldn’t have met the expectations of the project. No way by myself, absolutely no way.
… It wouldn’t have been done in the timeline that we needed it to be done in. That’s the difference” (MI3).

In general, Megan and I enjoyed working together so closely and felt the project benefited from our collaboration and differences in teaching styles or points of view. “The way that Laura approached it was really creative. … I wouldn’t have thought to do it that way, but she would. Having that other teacher’s perspective was helpful, I think … two heads are better than one” (MI3). My role in the project overlapping with Megan’s role, however, created some problems as well.

I make different decisions than Megan and it causes confusion amongst the kids. I should really back off and let her make all the major decisions, as she is the one that can understand the school climate, culture, schedule, and population best. At the same time, I want the children to be the decision makers as it is their project and I notice how this is becoming more and more teacher-directed because of time pressure. (LR3)

I felt Megan was taking control over the project, instead of letting the children live up to their responsibilities and ideas. Megan, however, did not seem confident the children would deliver quality work if she did not instruct children directly, particularly as she had noticed children behaving differently in class.

I did find near the end the behaviours were changing because they were working in groups, and we were giving them some trust and we were allowing them to do stuff, but it was like chaos, they couldn’t, they didn’t have the skills, the group skills that I thought they would have. (MI3)

I experienced the children’s behaviour very differently from Megan. As a Montessori teacher, I was used to children working on different tasks, doing group work, and moving around in the classroom. I did feel the small work space and the children’s lack of collaborative skills required more direct instruction, and sometimes reprimands;
however, I felt the children were being productive and organized and interpreted students’ behaviour more as signs of engagement and enthusiasm.

At one point I saw a child that was hopping through the classroom (laughs), but it was out of excitement, he was getting a ruler for his poster! So I see that as something positive … whereas you could also see that as a behavioural problem, right? I really enjoyed, at times it was loud, but they were all working! (LI3)

Although Megan and I had different perspectives in some areas, we both felt this diversity was a natural part of collaborating. “Laura and I worked really well together because we knew we were both frustrated at times and it wasn’t with each other, it was just the, ‘OK, how are we going to do this?’” (MI3). I too felt pleased with our collaboration as I felt it had contributed to my own learning process.

Working together with Megan has made me aware of certain things I do that I either do well, like planning and organizing, and things I need to improve in, like letting go of control, be more flexible, and utilizing my social network. It’s been a great learning experience. (LR3)

As our project came to an end, I realized, despite the stresses and hard work that accompanied the project, it would be hard for me to leave. “Tomorrow will be a long day with two performances to go. After that it will be another reflection circle with the class, finishing up assessments, and saying a heartfelt goodbye. I will miss it all, actually” (LR3).

Once the final event was executed, Megan and I were thrilled with the positive feedback we received from the parents. “So many parents commented on how their child was talking about marketing strategies at home and the process of the project itself” (MR3). Megan repeatedly mentioned how this last phase of the project had been the most intense but the most rewarding and exciting phase of the project as well. As she was beaming over the successes of the previous night, I was particularly happy to see Megan
rejoice in the project instead of feeling burdened by it. “I was so happy Megan enjoyed this part now that most of the stress was gone. She’s been amazing to work with, the kids adore her” (LR3). As I closed the classroom door behind me, I couldn’t feel anything else but gratitude.

I can’t believe she was willing to put in all this time and hard work when she really easily could have said ‘no’ to the whole thing. It’s teachers like that, that will make the change we need to see in education. Despite their overloaded schedule, their families at home, their own personal dilemmas, and their own ideas of education that have grown over the years, they are willing to try something new only with the incentive to improve their own learning and teaching, and, alongside, improving their students’ learning. (LR3)

In summary, during the last project phase, students reflected upon their newly acquired knowledge and applied this knowledge to a culmination event. Megan and I worked closely together as we struggled to balance curriculum goals with the project, to find appropriate resources, to deal with the project’s emerging character and intense workload, to guide students, and to let go of the need to control the final event. Students still seemed to lack the skills and comfort that was required to apply their knowledge to their products and to solve problems. Sharing space with other teachers was perceived as challenging, along with the pressure to satisfy and meet the expectations of the broader school communities and to deal with the pressure for time. Collaboration included benefits as well. We particularly believed reflecting throughout the project had been beneficial to our own professional development as Megan developed a strong appreciation for project work’s authenticity and its focus on deep understanding, while I developed a better understanding and appreciation of process-based assessments. Moreover, Megan and I started to apply these new views to our thinking about potential future projects. From Megan’s and my perceptions, students benefited as they overcame
challenges, developed important life skills, and increased their level of ownership. Bringing the broader school community together for the final event and the positive feedback Megan and I received during this time were perceived as supportive. Collaboration during this phase became more extensive. Differences in views remained, particularly about students’ group work and our role in decision-making for the final event. Furthermore, Megan’s and my roles for the project became more blurred, causing tensions between my goals as a researcher and my goals as a teacher. Collaboration, however, was seen as a way to increase my self-awareness as a teacher and to use our time efficiently as well. Furthermore, as the students concluded their final event, Megan and I strongly agreed that the results of our intense collaboration during this phase had brought the project to a successful and rewarding conclusion.
CHAPTER 7: DISCUSSION

While project work has gained a prominent place in educational research, teachers have not been convinced to provide project work with a similar place in the elementary classroom (Fallik et al., 2008; Rogers, Cross, Sommerfeld Gresalfi, Trauth-Nare, & Duck, 2010; Tse, Lam, Lam, & Loh, 2005). To encourage and support teachers in their efforts to practice project-based learning (PBL), we need to understand what motivates teachers to initiate PBL in their classroom, the challenges they face in doing so, and what supports teachers require in overcoming these challenges. The current study examined the lived experiences of a classroom teacher (Megan) and me, while we collaboratively planned, enacted, and reflected upon a student-centered, whole-class project about marketing in Grade 5. This chapter discusses the study’s key findings of benefits and challenges of enacting the project as perceived by us and connects these findings with existing literature on project-based learning. Subsequently, the collaboration between Megan and me in relation to the project is discussed and compared with existing literature on teacher learning. I end this chapter by discussing the limitations of this study along with recommendations for future research and practice.

Project work is like parenthood. It is filled with boogers, tantrums, fevers, and fights. Filled with moments you long for simplicity, or just a night of sleep. You will be worried, you will be challenged, and you will make mistakes. What helps is; learn as you are doing it, doing it together, and seeing your children grow into those independent, caring, and capable citizens you aspire them to become. (LR4)
Challenges and Benefits of Project-Based Learning

There is only one way for project work to gain a place in the elementary classroom and that is by teachers enacting it (Blumenfeld et al., 1991; Hmelo-Silver, 2004, 2006; Krajcik & Blumenfeld, 2006; Meyer, Turner, & Spencer, 1997). Megan’s and my marketing project demonstrates how teachers can find many reasons for initiating project work in their classrooms but face many challenges when doing so.

You’ve got to be so organized, so sure of what you are going to do as a teacher. To find that balance to be organized and be able to explain to everybody what you’re doing, how you’re doing it, how you’re going to assess it, and yet at the same time letting it evolve the way it does, well that’s … jeez. (LD2)

Going through all three phases of the project revealed challenges encompassing the organization and management of project work, control, students’ motivation and learning, broader school community, and time. Although these challenges were perceived as discouraging at times, they provided important learning opportunities for both students and teachers. Moreover, many of these challenges were overcome through experience, collaboration, and systematic reflection.

Organization and Management

The most challenging aspect for Megan and me was managing and organizing the project. Challenges included finding and exploiting appropriate primary resources, dealing with the emergent character and intense workload of the project, and creating process-based assessment procedures. Connecting the project with the curriculum was particularly difficult. Although we were able to connect the concept of marketing with curriculum targets, these targets did not coincide with the students’ curriculum agenda and upcoming reports. “Grades need to be given before the report comes out and the focus is not on what children are doing and learning for the project. How do you balance
these two different approaches?” (LR2). Further challenging us to a great extent was guiding students adequately throughout the project. This was particularly the case for the students who seemed lost in the project’s demand for higher thinking skills. At times, these students’ increased need for guidance, along with organization of project activities, became a demand that, for Megan and me, was difficult to meet.

I worked with various groups to help them problem solve. The entertainment group needed to change the agenda slightly and once that was done, some of the boys became off task and needed more direction, which was hard to give when other kids needed answers from me. (MD2)

Challenges like these are not uncommon. Connecting standards with project work can be complex, especially as the order in which project topics emerge might be very different from the order they are presented in curricula (Schneider, Krajcik, & Blumenfeld, 2005; Sherin, Edelson, & Brown, 2004). Many teachers, as they are moving away from direct instruction, lack the expertise in guiding and scaffolding students’ investigation and can feel challenged in providing the space and structure students need to construct their own knowledge (Avargil, Hersovitz, & Dori, 2011; Hmelo-Silver et al., 2006; Schneider, Krajcik, & Blumenfeld, 2005; Mergendoller & Thomas, 2001; Polman & Pea, 2001; Schneider, Krajcik, & Blumenfeld, 2005; So & Kim, 2009; Van der Valk & de Jong, 2009).

As Megan and I dealt with these challenges over the course of the project, our understanding and appreciation for project work’s characteristics increased and our skills in enacting its concepts improved. For example, we became more aware of opportunities to connect the project with curriculum and assessment demands. “I would like to develop a writing piece that I can assess for the upcoming reporting period and that would tie in nicely with the project. I am thinking of getting them to do a persuasive writing piece”
Although we felt challenged to provide students with the guidance they needed, we started to appreciate our role as facilitators.

I love being able to walk around with my eyes and ears open and then respond to what is happening in front of me. It really does feel in every way, that learning is taking place and I am merely observing, responding, and guiding that process. (LR2)

Megan and I were able to improve our understanding and skills in guiding students’ learning over the course of the project. Megan became more skilled in asking students guiding questions instead of providing them with answers. “I find there are more questions fired back at them” (MD2). I became more comfortable in adjusting the level of guidance I provided to students’ needs. “I found at the beginning I was almost scared to model anything. Now, I see it more as providing students with that modelling and scaffolding to get to the next step, whatever that step might be” (LP2).

Other challenges transformed over time as well. My understanding and appreciation for process-based assessment, for example, increased. “I feel good about providing this type of assessment. It’s tons of work but, overall, I think it’s so worth it” (LI3). Furthermore, Megan and I gained a better appreciation and understanding of how to use primary resources effectively.

I felt really good about putting the groups to work and her visiting the groups. It was a great way for her to understand where the children were at, how we were approaching the topic, and to give relevant feedback. I also found it helped the children to ask more relevant questions. Next time, I will take that as a lesson learned and try to organize visits around the work of the children. (LR2)

**Control**

Students’ active role in designing the project, along with its emergent character, meant that Megan and I did not have complete oversight of what was going to be learned. This lack of oversight and control created anxiety for me as the desire for the project to
be successful (for Megan and for the children) weighed heavily on my shoulders and fueled my desire to control the project. “It’s just hard to let go of control when you don’t know what’s going to happen if you do” (LR2). My previous experiences in project work reminded me to trust students’ ability to make responsible decisions. “I know if you put these children in charge they can surprise you” (LR2). Megan, with no experience in student-centered project work, lacked this trust and frequently interfered with students’ decision making. “I wonder if you didn’t though, what would have come from it” (MD3). Her desire for control became particularly evident during group work.

I found that very hard because the physical environment is different in terms of instruction and dialogue. How they communicate with each other is different because you’re working in groups, so it’s not having a question, two people raising their hand and having a debate in front of the class, there’s always dialogue amongst each other. (MD2)

Megan’s desire for control was not surprising as the student-centered approach of project work is incongruent with the teacher-directed practices of most teachers (Borko & Putnam, 1996; Brooks & Brooks, 1999; Park Rogers et al., 2011; Thomas, 2000; Li, 2011). Teachers, therefore, especially ones new to project work, tend to be uncomfortable in providing students with the control to make their own decisions (Marx et al., 1997).

While Megan obtained a high level of control, over the course of the project she did become more at ease with students taking ownership. “I’m not showing them what they have to do. They’re figuring that out. The way that they set things up and organize information was not how I would have done it, but that doesn’t mean that they’re wrong” (MD2). Similarly, Megan came to understand and appreciate the value of movement, group work, and dialogue. “I feel we don’t sit as much and we do different things. All the raw data, all the people coming in, it was very useful to the kids; I loved it” (MD2).
Furthermore, as students started to lead the project into a clear direction, both Megan and I became more comfortable with student autonomy. “The project is moving. I can’t even tell you how that makes me feel! I know I should just trust my experience, but it’s hard to do sometimes” (LR2).

**Student Motivation**

Megan and I were not the only ones intimidated by project work’s student-centered approach. Students seemed troubled by the level of control they were offered as well. “I see several children who just don’t seem comfortable with having such a big role in decision making, as if they don’t want that ownership” (LR3). Project-based learning contains complex concepts without clear-cut solutions or answers. Furthermore, it requires learners to problem solve and work with others. These characteristics can make students feel unsure, especially when these requirements contradict with the teacher-directed environment to which they are accustomed (Blumenfeld et al., 1991; Ertmer & Simons, 2006; Marx et al., 1997; Mills & Treagust, 2003; Prince & Felder, 2007; Wrigley, 1998).

Students’ comfort with and appreciation of project work increased over time. “Especially the second field trip the children seemed to be more comfortable with their responsibility as primary investigators. I was absolutely amazed by many of the additional questions the children asked” (LR2). This comfort encouraged students to overcome initial insecurities and reach new levels of ownership. “We should be really proud of them. They stepped up to the plate. If you saw where we started out and then at the end being able to do such a good job. We raised over 700 dollars” (LI3).
Apart from increasing students’ comfort, ‘Minds into Marketing’ demonstrated how project work motivated students and engaged them in learning. In fact, Megan and I realized how project work brought students’ engagement to high levels. Allowing the students to learn in an authentic, real-life manner, for example, helped them to understand the value of what they were learning, particularly as students got to apply their knowledge of persuasive marketing strategies to their own products. “I was impressed with how most of the students were so enthusiastic with doing a sales job” (MR3). Furthermore, the project’s responsiveness to students’ interests, ideas, and talents engaged students and inspired them to be persistent and overcome obstacles. Megan further noticed how moving around the classroom and having dialogues with peers inspired students to come up with new ideas, engaged them in learning about marketing, and encouraged them to stay on task. “Some were so disappointed when we needed to stop for lunch. Great sign” (MR2).

Previous research findings confirm how project work’s authenticity, along with its opportunity for control and collaboration, can be important aspects of increasing students’ level of engagement, self-confidence, and intrinsic motivation to learn (Howard, 2000; Meece, Anderman, & Anderman, 2006; Ryan & Deci, 2000).

**Student Learning**

Where some students were able to overcome their initial discomfort with the project, others were still challenged by project work’s demand for higher thinking skills.

I do see some students that are having trouble with those higher thinking skills, monitoring themselves, time management, planning ahead. It drove me insane because they just waited constantly, waiting for someone else to tell them what to do; they just sit there. (LD2)

As some students got lost in the complexity of the project, their need for assistance
increased, which, in turn, increased our difficulties to guide students effectively, as well as our desire to control the project more rigorously. “It was too difficult because everybody is coming to you to ask questions. What can I do, can I do this? And in that area, you just realize many of them just can’t think for themselves” (MD3).

Megan and I realized that students’ knowledge about marketing was shallow. “The limited answers that some of the kids have given me, makes me realize they have lots to discover regarding marketing and critiquing” (MR2). Furthermore, Megan noticed how students lacked the collaborative skills the project required. “The project involved a lot of group work, a lot of the kids had a difficult time communicating and problem solving without assistance. As a teacher, I realize that this is a weakness of my class” (MR3). Project work demands higher thinking skills, such as, planning skills, critical thinking skills, problem solving skills, and collaboration skills. Students, especially when they are used to a more traditional approach to learning, are not always ready to meet these demands (Barton, 2001; Krajcik et al., 1998; Seiler, Tobin, & Sokolic, 2001; Tobin, Roth, & Zimmermann, 2001).

Collecting our reflections over the course of the project revealed that the emphasis of project work on students’ higher thinking skills and collaborative skills helped students to develop and improve those skills as well. “During the project I noticed how many students started to visualize the event, and with that, started to better identify problems, adjust their plans, prioritize their time, and ask relevant questions” (LP3). The project seemed to encourage students to develop higher thinking skills by providing them with the opportunity to apply such skills to their learning. Students’ critical thinking skills, for example, allowed them to detect persuasive marketing strategies that had previously gone
unnoticed. “One of the students said ‘Well, I go to that store every day, I know everything about it,’ but now I see her working on these posters and she’s totally applying all the marketing strategies. It’s cool to see that growth” (LD2). As students became better at identifying persuasive marketing strategies, they became able to apply these strategies to their own products, deepening their understanding of these strategies even more.

I noticed how many of the children came with comparisons and ideas from what they had experienced at the fieldtrips. Whether it was about how they would locate the main bar, what furniture would be appropriate, or what type of entertainment would draw people in. (LR2)

Other higher thinking skills were encouraged as well. Students’ ability to self-reflect, for example, was required during class meetings, for portfolio tasks, and for group work.

One student said she found it challenging to make compromises when different committees wanted different things. I thought it was so great she came to this conclusion. This self-awareness will now enable her to understand what is happening during the group process and find efficient ways to compromise where needed. (LR3)

Throughout the course of the project, students were able to construct deeper understandings of marketing concepts through hands-on experiences and observations and through applying their knowledge in a real-life context.

We created a logo and we made errors along the way. We should have had the class vote on the logo because that logo was not really consistent, some people did a different type of star, but from there we got to understand we needed one straight, specific looking thing that needed to be applied everywhere. (MD2)

A substantial body of research confirms that, when students are engaged in complex tasks similar to project work, the development of higher thinking skills is encouraged (Brown & Campione, 1996; Krajcik et al., 1994; Perry & VandeKamp, 2000,
Perry et al., 2004, 2008; Pintrich, 2000; Zimmerman, 1990). Additionally, project work allows students to value the content they are learning and apply that knowledge in different contexts (Gültekin, 2005; Rivet & Krajcik, 2004). Furthermore, project work encourages students to develop collaborative skills as they are required to communicate, work together, resolve conflicts, listen to others, and coordinate efforts within their teams (Hmelo-Silver, 2004; Holst, 2003; Katz & Chard, 2000; Schmidt & Moust, 2000). Megan and I noticed how students’ collaborative skills became more efficient in time. “Different from the last time I saw the children work in groups, the children were taking turns, listening to each other’s ideas, making sure all ideas were agreed upon and noted down before selecting the best idea through a vote” (LR2).

**Broader School Community**

I perceived involving the broader community as one of project work’s benefits. “It all worked out great! Megan got the parent letter out and lots of parents (especially dads!) were interested in coming along to the restaurant field trip. It’s great having all that parent involvement early on in the project” (LR2). As the teacher of the class, however, Megan did not feel the broader school community facilitated her to implement tasks like project work. In fact, she felt pressured to justify her approach to others, especially to parents. “I had a hard time defending myself. So, that’s what stressed me. It’s ridiculous, what parents expect” (MI3). Megan did feel supported by colleagues; however, she discussed this support mostly in a passive sense, as teachers not opposed to the project rather than them supporting it: “My principal (laughs), she was supportive, I barely saw her” (MI3). Sharing resources and the physical space inside the school was challenging as well. Being in a portable and having to share many of the school’s spaces
with other teaching activities and classes limited Megan’s and my abilities to create an optimal learning environment for students: “They didn’t have the space to really sit down quietly together to discuss it” (LI3).

Many teachers do not feel supported by the broader school community to implement tasks like project work (Lam, Cheng, & Choy, 2009). Instead of focusing on deep understanding and following students’ interests, teachers feel pressured to cover curricula and improve test results (Dresden & Lee, 2007; Helm & Beneke, 2003). Parents can be “skeptical of change, wondering what the new approaches mean, how they will affect student test scores, and how to interpret alternative assessments” (Marx et al., 1997, p. 354). Practical constraints like gaining resources and space can further prevent teachers from enacting project work effectively (Edelson, Gordin, & Pea, 1999).

Although challenges persisted for Megan, she did develop a greater appreciation for project work’s tendency to involve the broader school community, especially as she received much parental approval in the final stages of the project. “I had so many parents approach me with positive feedback regarding the project, the performance, and the purpose. So many parents commented on how their child was talking about marketing strategies at home and the process of the project itself” (MR3). Megan started thinking about involving her colleagues as well. “I could get my teaching partner in the afternoon to administer some of the project work during her instructional time. I will need to touch base with her to collaborate” (MR2). Even though the physical environment remained challenging, Megan’s colleagues provided help as we worked to the final performance. “I had to rearrange schedules with people to get the great hall or to get the gym. Some of them came in to watch the show, you know, supported me that way” (MI3).
Time

As the project required blocks of time that otherwise would have been spent on formal lessons, Megan felt challenged to combine project work with her regular teaching schedule. “I can factor library into my literacy block, but that still is not enough math instructional time. I feel that I need to cut some minutes from the project. I just wish I had more time!” (MR2). I realized that the planning time the project demanded was extensive. “Today I spent quite a while on educating myself on grocery marketing strategies … That’s the tricky thing with these projects, … I can see how a teacher can spend a great amount of time educating him or herself on this topic” (LR2). Teaching agendas determined by school districts often do not take into account project work’s focus on deep understanding, nor the extensive time project work requires for students to investigate and for teachers to observe, reflect, and plan according to students’ learning and interests (Krajcik et al., 2008; Schneider, Krajcik, & Blumenfeld, 2005). Consuming school- and district-mandated curricula placed on teachers’ shoulders can cause teachers to be discouraged from trying out new approaches to teaching such as project work or prevent them from enacting project work in such a way that it encourages students to examine concepts in depth (Blumenfeld, Krajcik, Marx, & Soloway, 1994; Hertzog, 1994; Nelson & Slavit, 2008). I was particularly frustrated about not having more time for the students to really investigate marketing concepts in depth. “I feel frustrated that there is not enough time for the children to get to the right decisions. The pressure for time often resulted in Megan making decisions, or me just doing it for the children” (LR3). Time pressure over the course of the project remained high, although Megan did gain a better understanding of how future project work would fit in with her teaching
schedule and how she could offer students more time investigating concepts. “If I were to incorporate project work again, I would decide on a project at the beginning of the year based on students’ needs and have it develop all year long” (MR2).

Collaboration

In their discussion of how to promote project-based science, Marx et al. (1997) explained that, to truly understand project work, teachers should enact it within their own personal context. In fact, the authors stated: “teachers, like students, construct understanding; they need to collaborate with others, try things out, reflect on the results, modify their attempts, and try again” (pp. 355-356). Furthermore, the authors recommended teachers should work together, be involved in the planning for enactment of project work, see what project work looks like in the field, and hear other teachers’ experiences of challenges and successes. Despite these recommendations, many studies on project-based learning do not apply the constructivist ideas they wish to be enacted in classrooms to their research designs. While some researchers make efforts to include teachers’ perceptions, these perceptions often relate to using pre-packaged project-based material or include expert university members who provide teachers with explicit guidance in their enactment of project work (Fallik et al., 2008; Thomas, 2000). The few studies that include teachers as reflective professionals who have valuable insights in enacting project work on their own, tend to collect these experiences through questionnaires, observations, or interviews. For example, Mergendoller and Thomas (2001) described classroom management techniques recommended by teachers who were experienced in enacting project-based learning. They did so by asking 12 teachers 43
questions in one-hour long telephone interviews. While these studies provide valuable insights into ways we can support the enactment of project-based learning, they give limited insight into teachers’ lived experiences in initiating and enacting project-based learning (Thomas, 2000).

In contrast to these studies, the current study’s design was based on participatory action research (PAR). This approach implied Megan’s and my active involvement and shared ownership in planning, enacting, and reflecting upon all three phases of the project in the context of Megan’s classroom. This mutual involvement allowed for many benefits. In fact, Megan reported the study’s very existence was based on the opportunity to collaborate.

With group projects there is always a process, organizing the information, and trying to figure out what you’re going to do. It takes a lot of time. So, by Laura saying, ‘Let me help you,’ let’s develop something on a bigger level than I would normally do, made me want to do it. (MI1)

Megan and I perceived our partnership during the project as helpful and positive as it allowed us to share the workload and combine our strengths.

Megan is working out the project inside the class; she debriefs to me what is working, where is the project going, what are the new insights and questions. I take that info and continue to connect with people and plan activities and trips that will encourage the children to further learn about the topic. Working fulltime by yourself, it would be a daring task. (LR2)

Megan felt particularly pleased about working together, as trying a new approach to teaching made her feel unsure at times. “After Laura left my house from planning, I felt better. I felt that I had a better idea of where we were going with the kids, even though it is ultimately up to them in the end” (MR2). Previous research findings confirm how collaboration can allow teachers to support each other in learning new approaches to teaching (Ballet & Kelchtermans, 2009; Snow-Gerono, 2005).
The study’s findings further reveal how collaboration facilitated professional growth in our understanding and appreciation of project work and our comfort and skills in enacting its concepts. Collaboration, for example, ensured Megan and I reflected upon our experiences on a regular basis, which, for Megan, was not always an easy task. “My challenge with the reflection component of it, was, you know, work all day, running around at home, and then ‘oh, yeah, I have to reflect’ (MD3). Reflecting systematically through regular planning meetings, discussions, and diary exchanges, enabled us to make decisions mutually, share observations of student learning, discuss how the project aligned with the underlying principles of project work, and become thoughtful in designing and enacting the project.

Tomorrow, Megan and I decided to start with very specific tasks for people, not directing those tasks, but more like; the posters need to be coloured and hung up for the graphic design committee, who’s going to work on that? I feel that the majority of the children have trouble understanding the concept of time management and how the amount of time available should affect their decision making. (LR2)

Richardson (1990) explained that giving teachers control over their own learning process instead of primarily working from predetermined activities encourages teachers to think about their practices and connect these practices to their ideas and beliefs about education. Similarly, collaborating and reflecting encouraged Megan and me not only to become more thoughtful about our practices but to become more self-aware of how these practices coincided or contradicted with our views on learning and teaching.

I also think the language on my rubrics might have been a bit too complicated for some students. Still, I feel good about providing this type of assessment. Children need to take ownership over their own learning and accomplishments … it’s not important whether I give them an A or C or 8 or 6. (LR3)
Megan’s and my prior experiences with project work differed significantly. Our views of the project and how it should be enacted, therefore, differed as well. For example, Megan and I disagreed on how to best assign leaders for groups, the purpose of assessments, or giving students time to work on the project. These differences presented us with challenging moments, especially as the pressure we felt to succeed and our eagerness to control the project was strong. The success of the project, however, depended on our joint commitment and responsibility. Therefore, Megan and I were forced to find common ground between our views.

The activities this week are more formal than we initially planned, but Megan needs to get some assessments done and she can relate these activities with the project. In the end, I need to find a way to make the project work for her and her class in the system they are used to. (LR2)

Finding common ground between our different views encouraged us to re-examine and adjust these views, as well. “Maybe, I think sometimes, it’s our society and our system. We are the ones always thinking of the questions instead of saying ‘ok, go and look around, what do you notice and what do you think?’” (MD3). Our different perspectives of the project, therefore, did not prohibit us from moving forward, but, quite to the contrary, helped us progress to the next level. Similarly, research demonstrates how collaborative discussion and reflection can challenge teachers’ beliefs, assist teachers in developing their ideas of project work, increase their understanding of project work’s potential, help them find ways to overcome challenges, and lead the way to a change in teacher beliefs and practices (Borko, 2004; Erickson et al., 2005; Fallik et al., 2008; Holst, 2003; Marx et al., 1997; Nelson, 2008; Schifter, 1996). Working with Megan reminded me of the challenges project work can present to teachers, pushing my views of how project work could be enacted to become more realistic.
At the beginning of the project I was very sure. … this is the best way to teach ... I kind of had forgotten about all the disadvantages of project work and all the challenges that it comes with. Instead of taking an either/or approach, project work and a more traditional approach can go hand in hand. (LI3)

**Conclusion**

Findings of the current study demonstrate how teachers can recognize many benefits project work brings for students. Megan and I perceived our students’ engagement to reach high levels, allowing them to overcome challenges and stay on task. Furthermore, we saw students add onto their knowledge about marketing and develop important life skills, such as, critical thinking skills, collaboration skills, and self-awareness. Megan and my perceptions are supported by many studies examining the effectiveness of project work on students’ learning and motivation (Belland, Ertmer, & Simons, 2006; Blumenfeld, Krajcik, Marx, & Soloway, 1994; Brush & Saye, 2008; Gültekin, 2007; Rivet & Krajcik, 2004; Schneider, Krajcik, Marx, & Soloway, 2002). The study demonstrates the challenges teachers can face in enacting project work as well. Megan’s and my story demonstrates how managing and organizing project work is complex; letting go of control is intimidating, guiding students is challenging, and finding the support and time you need to do project work is difficult. These findings have been described in many other studies (Blumenfeld et al., 1991; Brooks & Brooks, 1999; Clark, 2006; Dori, Tal, & Peled, 2002; Marx et al., 1997; Taitelbaum, Mamlok-Naaman, Carmeli, & Hofstein, 2008). In addition to these findings, however, the current study demonstrates how going through PAR’s continuous cycle of planning, enacting, and reflecting not only can overcome many of these challenges, but how essential these challenges are in providing opportunities for professional growth. Megan’s and my
understanding and skills in connecting the project with curriculum demands and the classroom schedule, designing process-based assessments, and guiding students increased. We became more comfortable and appreciative of project work’s inclusive and authentic character; its focus on students’ self-regulated learning skills, collaborative skills, and deep thinking; and the opportunities project work offered students to control their own learning. Moreover, taking a collaborative approach allowed Megan and me to support each other in enacting a new approach to our teaching: to combine our unique strengths as teachers, to overcome challenges, and to become thoughtful in designing project work according to its underlying principles. Furthermore, collaborating allowed us to reflect systematically, which encouraged us to become aware and examine our views of project-based learning. As we were forced to find common ground between Megan’s views and mine, we were able to adjust these views and create ideas for future projects according to our newly acquired thoughts and knowledge about project work.

The study’s findings are significant for educational research as they respond to a need for research on teachers’ lived experiences while enacting project-based learning in their classroom. Megan’s and my lived experiences can create more awareness of the complexity of enacting project work. The study is particularly relevant as it demonstrates how PAR can be a way of supporting teachers in overcoming challenges. Findings demonstrate how my role as a participant in this study and the context in which we taught facilitated our professional development. Taking this holistic approach is contrary to much research on teacher learning that often includes the examination of a professional development program and the teacher as learner, but rarely includes the facilitator and the context in which this professional development takes place (Borko, 2004).
The findings are particularly relevant to teachers. As teachers read our experiences, they can gain insights into what a student-centered project work might look like in the classroom and assess whether and how project work would be useful in their classrooms (Marx et al., 1997; Sarason, 2002; Thomas, 2000). Rather than taking challenges away from teachers by implementing predetermined project curricula and materials or depending on outside guidance and expertise, teachers should experience and reflect upon project work in collaboration with their colleagues. Teachers can empower themselves, along with their students, and increase their understanding and skills in project-based learning, merely through their willingness to experiment, their ability to collaborate, and their courage to reflect critically upon their practices and views.

**Limitations and Recommendations for Future Research**

The current study is limited in four major ways. First, data collection only included teacher self-reports. Broadening the study’s sources of data could have strengthened the study. This larger data collection would have allowed the context in which we enacted the project to be included. Objective measures, for example, could have included the school’s support in terms of available resources, time, and professional development opportunities, as revealed through school- and district-level policies. Other self-reports could have included colleagues’, parents’, and students’ views of the project. Future research would therefore be encouraged to broaden the scope of data to understand teachers’ thinking and practices of student-centered project work and how these are influenced, supported, or contradicted by the context and community in which they teach.
Second, Megan was participating in the study in addition to her regular teaching responsibilities. In contrast, my only focus was on the project and the study. “I have the luxury to now solely focus on this project and to take a step back, something I could never do as a teacher because you’re so overloaded with work” (LI1). Findings, therefore, might be different from teachers who have to prepare activities, coordinate events, and find materials in addition to their full-time jobs as teachers. Future research that includes several teachers who enact project work alongside their regular teaching responsibilities would contribute to further understanding teachers’ perceptions of enacting a student-centered approach to project work in their classrooms, exploring how collaborative learning can assist in this process, and identifying other elements of support needed to encourage teacher learning.

Third, the success of a participatory action research project is best measured by changes in the lives of the participants (Kidd & Kral, 2005). It takes time and continuous support to make these changes in beliefs and practices (Nelson, 2008; Nelson & Slavit, 2008; Thomas, 2000). In fact, some studies demonstrate that classroom teachers are not likely to adopt project work for their classroom without this support (Ertmer, 2005; Joyce & Weil, 1996; Lam, Cheng, & Choy, 2009). For example, Marx et al. (1997) noted how their experience in working with teachers enacting project work had taught them it took almost three years for teachers to understand the underlying principles of project work and to master its concepts. Our study did not provide the continuous support and time for Megan and me to persist in changing our practices and beliefs toward project work. It is questionable, therefore, whether or not our experiences led to a change in our beliefs and practices. Future longitudinal research could support teachers in their efforts to adopt
project-based practices and examine how collaborative, reflective practices of project work can transform into an overall change in teachers’ approaches to teaching.

Finally, the study was limited by its design. Basing the study on participatory action research included my active participation in designing, enacting, and reflecting upon the project. As the principal researcher, I was further responsible for collecting, analyzing, and interpreting the data. Subjectivity, therefore, played a major role in our study’s results. As McMillan and Schumacher (2010) note:

In participatory research, the inquirer includes in the data his or her own actions. The complicated dual role of researcher and participant requires scrutiny of both the role and the resulting data. This is not an easy task, nor should it be taken lightly. (p. 333)

Reflexivity, as a way to apply this scrutiny and account for bias and subjectivity, therefore, became an important matter of concern. According to Pillow (2003), reflexivity can be enacted by a) demonstrating a high level of personal self-awareness and scrutiny, b) allowing for participants to use their own ‘voice’, c) being determined to gain accurate understandings of the data, and d) accounting for one’s own subjectivity. To increase reflexivity and enhance validity, multiple ways of data collection were selected, These strategies, aligning with Pillow’s suggestions, promoted my self-awareness, allowed Megan to use her voice, permitted member checking, and acknowledged Megan’s and my roles in the interplay and partnership between us. Diary keeping, for example, enabled me to include my own emotions, not only as a participant, but as a researcher (Glesne, 2006).

It’s difficult to enter this project with two objectives; wanting the project to succeed for the children, and getting valuable data on our reflections as teachers. Basically you’re the teacher and the researcher at the same time. What seems good for the project or us as teachers might not be based on the constructivist framework. Seeing that’s the whole objective of the research, we will need to make choices that might feel uncomfortable or unnatural to us. (LR1)
Recording the interviews and discussions and collecting written diary entries allowed me to use Megan’s voice when analyzing, describing, and interpreting the data. I ensured that Megan gained an opportunity to review transcripts and preliminary data analysis, as well, to member check. I decided to describe the interplay between Megan and me by acknowledging the collaboration between us as a part of the study (Berg, 2008; McMillan & Schumacher, 2010). These measures ensured that, instead of trying to eliminate subjectivity, it was monitored and utilized to contribute to my study (Glesne, 2006; McMillan & Schumacher, 2010). The current study demonstrates this approach might not always result in major shifts in teaching and learning; however, it does demonstrate how powerful learning experiences can encourage teachers to develop new conceptions and allow them to thrive, alongside their students, while learning to master the project approach. Additional research that bases its concept on participatory action research by allowing teachers and researchers to be involved in planning, enacting, and reflecting upon project work in the unique context of teachers’ classrooms is encouraged.

**Recommendations for Future Practice**

For teachers brave enough to initiate project work on their own, several lessons can be learned as a result of Megan’s and my experiences, of which I highlight four.

**Dare to Experiment**

As Megan and I enacted the project, we made mistakes. Megan, for example, felt unsure about how to organize project work and uncomfortable with the level of control it required from students. She was, therefore, frequently tempted into making decisions for her students. I felt unsure of how to assess students’ project work and spent many hours
designing rubrics that, ultimately, were too complicated for students to understand.

Neither Megan nor I intend that our project be read as a perfect example of project work. Instead, we encourage teachers to risk these feelings of uncertainty and discomfort, and recommend they embark on a student-centered approach to project work in their classroom and experience this approach, with all the mistakes, obstacles, rewards, and little miracles with which it comes.

**Collaborate with Others**

Working together allowed Megan and me to support each other and share the intense workload of trying out a new approach to teaching. Collaboration further allowed us to discuss our experiences, to share our observations, and to challenge each other in our ideas and practices of project work. This collaboration was as essential to the project’s success as to our learning about project work. Collaboration took other forms as well. For example, Megan and I utilized the expertise of our broader teaching and school community by involving parents with experience in marketing as primary resources for students’ investigations, and other teachers as they supported us by linking their subject area with project activities or providing us with the space we needed for the final event. It is thus recommended that teachers utilize their broader teaching community and collaborate with other teachers in the enactment of project work.

One thing that is important to remember with project work, like, you shouldn’t be working on it alone. You should be working on it with people in your environment, your community, and, like we did, with other teachers. I don’t do that naturally, I feel I’m putting a burden on other teachers, … but I think that is one of the benefits of project work … and a way of doing it well. (LI3)
Reflect Systematically

Megan and I reflected systematically throughout the three phases of the project through regular planning meetings, discussions, and diary exchanges. Doing this reflection helped us to make thoughtful decisions about how we organized the project. “I’m very comfortable writing; writing it out for me organizes my head” (LD3).

Furthermore, reflecting systematically encouraged us to discuss our views and practices of project work and become more self-aware of these views and practices. Although reflecting became essential for our professional growth and understanding of project work, doing it systematically was not an easy task. For example, although Megan felt reflecting was beneficial to her learning and had initially preferred to type her diary reflections, she realized during the course of the project that she did not enjoy writing down her thoughts after the fact. “You might, because you enjoy writing, but I am just being a normal person trying to get through the day. Typing is not fast for me, so for me it would have been a more efficient way during project work, but that’s good to know!” (MD3). Teachers should find ways to structure reflection into their teaching schedules in ways that feel most comfortable to them. Megan, for example, suggested using a recorder for future projects. “It’s so funny, I don’t know why we are not using them more … because I was sitting at the doctor’s office and after each patient he’s recording. He records everything because it saves time and the thoughts are right there; they are current” (MD3).

Trust the Process

Finally, initiating project work in the classroom requires a good measure of trust in students’ ability to step up to the plate. Megan was skeptical of her students’ ability to
make responsible choices. The pressure she felt to justify our approach to others 
discouraged her from providing her students with control over the project. Due to my 
previous experience, I had more faith in the power of project work but was challenged by 
the project’s emerging character, which forced me to wait for students to steer the project 
before planning new activities. Over the course of the project, however, Megan and I saw 
how the process of project work eventually encouraged students to take ownership and 
bring the project to a success. “I see the involvement, excitement, communication, and 
problem-solving … due to this project. I feel the students really love it. We seem to be 
running out of time, but I also know it will still be successful in the end” (MR2).

I am so relieved the project is moving into this direction and the children really 
are stepping it up. Now I can see the excitement, the potential for a deeper 
learning experience, for creativity and critical thinking. I’m angry at myself for 
not trusting the process and the children more. I should know by now this is what 
project work does. I just had to see it again. (LR2)

Although developing this trust takes time and experience, teachers need to trust in the 
process of project work and let their students take ownership, so teachers and students see 
learning take place in unforeseen ways. “If we would just give them a chance, they can 
do amazing things all by themselves” (LR2).
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APPENDIX A: LETTER OF INFORMATION

DATE: June 27, 2010

LETTER OF INFORMATION

A Study of/about Project Work in the Elementary Classroom

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1. This study was granted clearance by the General Research Ethics Board for compliance with the Tri-Council Policy Statement: Ethical Conduct of Research Involving Humans, and Queen’s policies.

What is the purpose of this study?
I am an elementary school teacher who has engaged students in project work for over eight years. During these years, I have learned that, although students greatly benefited from project work, organizing and enacting project work is not an easy task. Therefore, I wish to better understand the process of project work and improve my teaching practices regarding its concept. I am looking for a teacher who would like to do the same. If you decide to participate in this study, we would be working together as action researchers in planning, enacting, and reflecting upon a whole-class project. The focus of this project will be to organize and adapt your existing project plans to a constructivist and student-centered approach. A constructivist approach emphasizes learning through discovery and hands-on experience. Throughout the process of the project, we will record our experiences and attempt to find answers to three investigative questions; 1) how did we plan the project according to constructivist principles, 2) what did we perceive as the challenges as well as the advantages of organizing project work according to constructivist principles, and 3) how did the process of organizing project work in this manner impact our perceptions and use of project work?

What will happen during the study?
If you decide you might be interested in participating, I will set up a time for a classroom observation and an informal interview. This interview will take about an hour of your time. The interview allows me to get to know you a bit. During the meeting we will discuss our teaching practices, experiences, and interest in project work. I will also ask you for some demographic information like your age and education. Likewise, you can ask me questions you might have about me. If you are still interested in participating after this meeting, I will ask you to sign a consent form. You are, however, under no obligation to participate in the study at this, or any other, time during the study.
My study is based on the concept of participatory action research, which means you will take part in the study as a researcher yourself. Apart from organizing the project, as you would normally do, we will record our experiences during the process of the project. We will do this in a variety of ways: First, a fellow graduate student will interview (one hour each; two hours in total) us both to discuss our expectations and predictions for the project. This interview will be recorded and take about an hour of your time. Throughout the project, we will reflect on our experiences during the course of the project by writing and sharing our experiences down in a diary (one hour a week; 6-8 hours in total). During weekly planning meetings (one hour per week; 6-8 hours in total), we will plan the project based on a structured planning journal, which will guide us in planning the project according to constructivist principles. Together, we will look at running records capturing moments of you and your students at a time you are engaged in project work. At a time convenient to you, we will reflect on the running records during post-observational discussions (one hour each; three hours in total). The discussion will focus on how constructivist teaching techniques and dialogue helped students’ learning. If you are not comfortable with the way data are collected, we can change or adapt these means according to your preference. No data will be collected from the students.

Although the timing of the project will depend on the children’s interests and your availability, the assumption is that the project will take approximately 6-8 weeks. I will only be present in your class when you are indeed working on the project. The content, design, and representation of the project will depend on your (and your students’) interests, schedule, curriculum goals, as well as availability. Although the planning, organization, and reflection of all aspects of the project will be done through collaboration between you and me, the actual enactment of the project in terms of evaluating students’ work, guiding children through dialogue, and organizing circle-time (amongst other aspects), will remain your responsibility. After all, you know the children, their interests, their levels, and their social backgrounds and can therefore be more responsive to students’ individual needs. Also, it will be less intrusive to the students’ normal routine to be taught by their own teacher.

Throughout the project we will continuously reflect upon our experiences in order to guide the students where necessary. Recording, transcribing, and analyzing the data will all be my responsibility. However, I will ask you to review interpretations and transcripts to make sure they accurately reflect your words (four hours in total). At the end of the project, a second interview will be planned (with the same interviewer) to discuss our overall thoughts and reflections on the project as a whole.

In total, you will have to reserve an additional 21-25 hours for the study. This calculation does not include time spent on the project (approximately three hours a week) as project work would be carried out regardless of the study.

**Are there any risks involved in participating in this study?**
The risks involved in participating in this study are minimal. You may feel uncomfortable with the means of data collection, in which case they could be adapted.

**Are there any potential benefits in participating in the study?**
This particular study will benefit you directly as you will a) get extra support in organizing a whole-class project, which you were going to organize regardless of the study, b) actively get to participate in a research study as a researcher, c) gain a better understanding of the process of project work, its challenges, and its benefits in your own classroom, d) increase your professional expertise in teaching in a constructivist, student-centered manner, and e) gain knowledge and expertise in using a variety of resources that help you plan, guide, and organize future projects.

**Who will know what I said or did in the study?**
You are participating in this study confidentially. I will offer you to choose a pseudonym if you prefer not to use your name. I will make strong efforts not to include any other information that would allow you to be identified. I will lock all data transcriptions safely in a cabinet; no one but me will be able to access data. I will encrypt digital communication or protect with a password. All data will be available for you to be reviewed before it is used in the final study results. All data collected will solely be used for the purpose of the study. After the study is completed, I will destroy all data, with the exception of an archive of the data, which will hold no identifying information and will be locked and stored for a mandatory amount of five years, after which it will be destroyed.
What if I change my mind about being in the study?

Your participation in this study is voluntary. It is your choice to be part of the study or not. If you decide to be part of the study, you can decide to stop (withdraw), at any time, even after signing the consent form or part-way through the study. If you decide to withdraw, there will be no consequences to you. In cases of withdrawal, any data you have provided will be destroyed unless you indicate otherwise.

How do I find out what was learned in this study?

Although careful not to overload you with data analysis, I will ensure you get the opportunity to review all themes, categories, patterns, and interpretations of data. I expect to have this study completed by approximately May, 2011. Naturally, you will be provided with a copy of the final thesis.

Questions about the Study

If you have questions or require more information about the study itself, please contact me. This study has been reviewed by the Queen’s University Research Ethics Board and received ethics clearance. If you have concerns or questions about your rights as a participant or about the way the study is conducted, please contact:

Queen’s General Research Ethics Board
Telephone: (613) 533-6081
c/o Office of Research Services
E-mail: chair.GREB@queensu.ca
APPENDIX B: LETTER OF CONSENT

Name (please print clearly): _________________________________________

1. I have read the Letter of Information and have had any questions answered to my satisfaction.

2. I understand that I will be participating in the study called Research in Action; Taking on a Project Approach. I understand that this means that I will be asked to participate as a co-researcher in examining the design, enactment, and reflection upon a constructivist, whole-class project conducted in my own classroom. I understand this participation will include several interviews, post-observational discussions, planning meetings, and recording my reflections on the project in a diary.

3. I understand that my participation in this study is voluntary and I may withdraw at any time.
   I understand that every effort will be made to maintain the confidentiality of the data now and in the future. Only the principal researcher Laura Jansen will have access to this area. The data may also be published in professional journals or presented at scientific conferences, but any such presentations will be of general findings and will never breach individual confidentiality. Should you be interested, you are entitled to a copy of the findings.

4. I am aware that if I have any questions, concerns, or complaints, I may contact Laura Jansen; jansen.laura@queensu.ca; thesis supervisor, Dr. John Freeman (613-533-6000 x 77298); freemanj@queensu.ca; Dean of the Faculty of Education (613-533-6210) or the Chair of the General Research Ethics Board (533-6081) at Queen’s University.

I have read the above statements and freely consent to participate in this research:

Signature: ______________________________ Date: _______________________


APPENDIX C: INTERVIEW QUESTIONS

Semi-structured interview prior to the project

Interviewer: Third party (M.Ed. fellow graduate student)
Participants: Classroom researcher and researcher
Duration: One hour

1) What made you decide to participate in/initiate this study?
   Have you ever done/conducted/taken part in a research project?
   What are your thoughts and feelings about approaching this project as a researcher?
   What are you hoping to discover or find out in this study?

2) Tell me about your experience with project work so far.
   Have you implemented it; if so, how did you do this?
   Tell me about one specific project. How was this project successful and what was challenging?
   What do you consider to be criteria for a good project?

3) What do you expect from this project?
   How do you think this project will be different from projects you have organized in the past?
   Based on your previous experiences with project work, how do you think the students are going to react to this project? How do you expect the larger school community to react to this project?
   What skills and abilities do you hope your students attain after they have left your classroom?
   This project will take a constructivist approach. What does a ‘constructivist approach’ mean to you?
   What are you most nervous about?
   What are you most excited about?
Semi-structured interview after completion of the project

Interviewer: Third party (M.Ed. fellow graduate student)
Participants: Classroom researcher and researcher
Duration: One hour

1) Tell me about your experience with the project since the last time we met.
   What was done for the project; what was it about?
   How did the project develop?
   What, if anything, did you learn about project work that you didn’t expect to learn?

2) How did you start the project? Please describe the different phases.
   What was done first? What did you notice about this phase?
   What was done second? What did you notice about this phase?
   What was done third? What did you notice about this phase?

3) What influence has this project had on how you teach?
   If I were watching you use these strategies, what would I see? Please describe 2-3 scenarios.
   How did teaching children who have differing abilities look when implementing the project?
   How, if at all, did the project impact the way you help children meet curriculum standards? Please describe.
   How, if at all, did the project impact the way you manage challenging behaviors?

4) How did organizing the project work in combination with your
   Environment?
   Daily and weekly schedule?
   Content?
   Parent involvement?
   Guidance techniques?
   Teaching style?

5) What are the pros of implementing project work? What are the cons or downsides of implementing the Project Approach?

The second interview questions have been adapted from: Beneke, S., & Ostrosky, M.M. (2009) Teacher’s views of the efficacy of incorporating the project approach into classroom practice with diverse learners. Early Childhood Research and Practice, 11(1).
APPENDIX D: PRINCIPLES FOR A CONSTRUCTIVIST APPROACH TO PROJECT WORK USED FOR SEMI-STRUCTURED DISCUSSIONS

1. Encourage and accept student autonomy and initiative
2. Use raw data and primary sources, along with manipulative, interactive, and physical materials
4. Allow student responses to drive lessons, shift instructional strategies, and alter content
5. Inquire about students’ understanding of concepts before sharing our own understanding of concepts
6. Encourage students to engage in dialogue, both with the teacher and with each other
7. Allow for wait time after posing questions
8. Encourage student inquiry by asking thoughtful, open-ended questions and encouraging students to ask questions of each other
9. Seek elaboration of students’ initial responses
10. Engage students in experiences that might engender contradictions to their initial hypotheses and then encourage discussion
11. Provide time for students to construct relationships and create metaphors
12. Nurture students’ natural curiosity through frequent use of the learning cycle model (experience/discovery, concept introduction, concept application)

(Adapted from: Brooks & Brooks, 2001, pp. 103-118)
## APPENDIX E: RECORD OF ACTIVITIES

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>November 3</td>
<td>Informal Observation Grade 5 and Conversation with Megan</td>
</tr>
<tr>
<td>November 8</td>
<td>Explore topic ‘Follow a Song’ Create anticipatory wordweb</td>
</tr>
<tr>
<td>November 17</td>
<td>Interview</td>
</tr>
<tr>
<td>November 22</td>
<td>Word webbing 3 anticipatory media literacy topics; music, news, &amp; advertisement</td>
</tr>
<tr>
<td>November 23</td>
<td>Find literature related to Media literacy in educ. Library. Add on to wordwebs, identify &amp; map potential of each topic.</td>
</tr>
<tr>
<td>November 24</td>
<td>Attend media workshop</td>
</tr>
<tr>
<td>November 25</td>
<td>Start coding interview</td>
</tr>
<tr>
<td>November 28</td>
<td>First planning meeting; determine potential topic according to classroom researchers’ interests and prediction of children’s interests &amp; needs.</td>
</tr>
<tr>
<td>November 29</td>
<td>Write first phase in planning journal, relating preferred topic to language and media literacy curriculum goals</td>
</tr>
<tr>
<td>December 1</td>
<td>Work out first lesson (send off to Megan); initial discussion with the children. Draft letter of information for parents. Set out contacts for media companies, potential guestspeakers.</td>
</tr>
<tr>
<td>December 2</td>
<td>Read into ‘Selling Chocolate’, meet with supervisor.</td>
</tr>
<tr>
<td>December 3</td>
<td>Connect with Megan to plan time for + discuss lesson. Attend Coll. – Amanda Balys; Flow theory and solitude Plan details lesson; get materials</td>
</tr>
<tr>
<td>December 6</td>
<td>Plan out responsibilities</td>
</tr>
<tr>
<td></td>
<td>Get further contacts in marketing</td>
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<tr>
<td></td>
<td>Write in planning journal, phase I</td>
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<tr>
<td></td>
<td>Prepare for planning meeting</td>
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<tr>
<td>December 7</td>
<td>Initial discussion with children in class Planning session</td>
</tr>
<tr>
<td>December 11</td>
<td>Planning Session</td>
</tr>
<tr>
<td>December 15</td>
<td>Contact Marketing Consultant Poutine Place Contact Megan to confirm post-observational discussion</td>
</tr>
<tr>
<td>December 16</td>
<td>Plan out class activities for investigation phase</td>
</tr>
<tr>
<td>December 19</td>
<td>Post-observational discussion</td>
</tr>
<tr>
<td>December 24</td>
<td>Continue listing out potential activities for investigation phase, including details for assessment, connections with curriculum, connections with children’s questions.</td>
</tr>
<tr>
<td>December 31</td>
<td>Plan out week 1 in detail, select appropriate activities, select appropriate timing</td>
</tr>
<tr>
<td>January 2</td>
<td>Planning meeting Megan; plan activities, share ideas, prepare portfolio, prepare parent letter, prepare material for focusing activities</td>
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<tr>
<td>Date</td>
<td>Activity</td>
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<tr>
<td>January 3</td>
<td>Re-intro discussion with children; what is marketing? Intro to homework –</td>
</tr>
<tr>
<td></td>
<td>keeping track of advertisement</td>
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<tr>
<td>January 3</td>
<td>Prepare Tuesday’s activity on Advertisement reflection</td>
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<tr>
<td></td>
<td>Go to library, research grocery marketing strategies. Get books, read into</td>
</tr>
<tr>
<td></td>
<td>the subject, select main points as preparation for Friday’s fieldtrip</td>
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<tr>
<td></td>
<td>Contact Prof. W. (expert in marketing and advertisement) make appointment</td>
</tr>
<tr>
<td></td>
<td>Read up on advertisement strategies</td>
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<tr>
<td>January 4</td>
<td>Call Supermarket to get permission for field trip Friday</td>
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<tr>
<td></td>
<td>Meet with Prof. W.</td>
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<td></td>
<td>Confirm contact SmallWorldMedia; Vanessa</td>
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<td></td>
<td>Write out grocery store marketing strategies</td>
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<td></td>
<td>Debrief data from homework chart, graph results</td>
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<td></td>
<td>Do the magazine newspaper reflection</td>
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<tr>
<td>January 5</td>
<td>Commercial reflection (same questions) + CocoAdvertismart (Marketing</td>
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<td></td>
<td>exercise computer)</td>
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<tr>
<td>January 6</td>
<td>Discussion to prepare for field trip</td>
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<td></td>
<td>Walk to grocery store</td>
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<td></td>
<td>Grocery store visit</td>
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<td></td>
<td>Debrief discussion</td>
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<td></td>
<td>Planning meeting</td>
</tr>
<tr>
<td>January 7</td>
<td>Fieldtrip Grocery Store</td>
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<td></td>
<td>Planning meeting</td>
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<tr>
<td>January 9</td>
<td>Call owner Poutine Place</td>
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<td></td>
<td>Email Marketing consultant</td>
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<tr>
<td>January 10</td>
<td>Introducee persuasive writing</td>
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<tr>
<td>January 11</td>
<td>Slogans and Jingles worksheet</td>
</tr>
<tr>
<td>January 12</td>
<td>Collect pictures and magazines, deliver to Megan</td>
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<tr>
<td></td>
<td>Planning Journal</td>
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<tr>
<td></td>
<td>Get material; buy clipboards</td>
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<td></td>
<td>Guided reading: Made You Look</td>
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<tr>
<td></td>
<td>Persuasive writing</td>
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<tr>
<td>January 13</td>
<td>Plan out jobs, questions, topics for field trip</td>
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<td></td>
<td>Call Marketing Consultant</td>
</tr>
<tr>
<td></td>
<td>Call Cindy</td>
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<tr>
<td></td>
<td>Call owner of restaurant</td>
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<tr>
<td></td>
<td>Have students work on bulletin board</td>
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<td></td>
<td>Guided reading/Persuasion writing</td>
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<td></td>
<td>Discussion about field trip and project</td>
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<tr>
<td>January 14</td>
<td>Field trip restaurants</td>
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<td></td>
<td>Reflection + Discussion</td>
</tr>
<tr>
<td>January 16</td>
<td>Public library find restaurant books</td>
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<tr>
<td>January 17</td>
<td>Find library books restaurant TRC + Education library</td>
</tr>
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<td></td>
<td>Plan organization committee restaurant</td>
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<td></td>
<td>Planning meeting</td>
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<tr>
<td></td>
<td>Finish reflection field trip</td>
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<tr>
<td></td>
<td>Assess portfolios</td>
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<tr>
<td>Date</td>
<td>Activities</td>
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<td>----------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| January 18 | **Persuasive techniques activities**  
Guided reading  
Persuasive writing (write example + write own)  
Have pictures developed + take to Megan  
Pick up and drop off portfolios |
| January 18 | **Persuasive techniques activities**  
Guided reading  
Persuasive writing (write example + write own) |
| January 19 | **Persuasive techniques activities**  
Guided reading  
Persuasive writing (write example + write own) |
| January 20 | Plan week 1 committees  
Plan discussion with children  
Assessing portfolios  
**Persuasive techniques activities**  
Guided reading  
Persuasive writing (write example + write own) |
| January 21 | Discussion with children about restaurant  
Group work brainstorming  
Decision making discussion  
Divide students in committees of interest |
| January 24 | Contact Marketing Consultant for visit (Vanessa)  
Call Megan to plan for upcoming week(s)  
Planning Journal  
Plan Week 1 responsibility chart  
List out group discussion ideas  
*Finish Guided Reading Centre (Advertising activities)* |
| January 25 | Assessment for PBL research |
| January 26 | Create draft for assessment plan |
| January 27 | Plan assessment – create rubrics  
Prepare group portfolios (get material for it too) |
| January 28 | **Committee Project Work**  
Planning meeting |
| February 1 | Plan class meeting and create new responsibility chart  
Contact marketing consultant to confirm next week’s visit |
| February 2 | **Class meeting and committee work** (Cancelled, snow storm) |
| February 4 | **Class discussion**  
**Committee work**  
Planning meeting |
| February 7 | **Committee Work**  
Planning Meeting  
Copy Centre for Advertisement  
Writing Parent Letter/Invitation  
Plan Committee Work  
Contact and confirm visit expert |
<table>
<thead>
<tr>
<th>Date</th>
<th>Activities</th>
</tr>
</thead>
</table>
| February 8 | Committee Work: Preparing questions for consultant  
Call Megan to plan and confirm schedule  
Prepare for next day of committee work (to do list) |
| February 9 | Class meeting  
Rehearsal  
Committee Work  
Observation Committee |
| February 10| Committee work  
Group assessment (rubrics peer assessment)  
Rehearsal (entertainment group/whole class) |
| February 11| Committee work  
Rehearsal (whole class)  
Collect + Assess individual portfolio’s  
Post observational discussion part I |
| February 13| Post observational discussion part II  
Planning meeting |
| February 14| Class discussion  
Rehearsal  
Committee Work  
Set Up  
*Lunch Event 1 (Primary Grades KG-4)*  
Clean up  
Planning |
| February 15| Class discussion  
Rehearsal  
Committee Work  
Set Up  
*Lunch Event 2 (Intermediate Grades 4-8 + other KG group)*  
Clean up  
Planning – preparing slide show Free the Children, getting groceries  
Set Up  
*Evening Event*  
Clean up |
| February 16| Finish assessment portfolios  
Prepare reflection meeting |
| February 17| Class meeting as reflection  
Product Self-Assessment  
Post-observational discussion  
Finalize assessment feedback cards, email to Cindy |
| March 7-12 | Last Interview with Jordan |

*Italics* = in-class time
APPENDIX F: ANTICIPATORY WORD WEBS PROJECT PHASE I

Anticipatory Mind Map ‘World of News’
- Journalism
- Television
- Broadcasting
- Radio
- Internet
- Print
- Photography

Potential Assessment Strategies
- Portfolio: selected news & reflections
- Creating a product; presenting, story writing, editing
- Written-reflection on Field Trips and Visits
- Self-reflection, peer-reflection

Writing:
- Developing, organizing, using knowledge to apply
- Reflecting

Media Literacy
- Understanding Media
- Text & Forms
- Creating media texts
- Reflecting on media
- Creating and presenting
- Reflecting, Responding, and Analyzing
- Exploring Forms and Cultural Contexts

Journalist:
- Go to broadcast
- Newspapers (different countries, cities, languages)
- Newspaper company
- Internet newspaper
- Photography exposition
- Editor

Potential Directions
- ‘World of News’

Potential Primary Resources

Potential Activities/Products
- Interview
- Make television broadcast
- Create a newspaper/webpage
- Create observer chart for new reflections
- Story finding, story writing
- Editing

Potential Questions
- What is news, what is not?
- Who decides what is news?
- What are ways of getting news?
- What are ways of bringing news to the people?
- How is news important?
- How is a story created and prepared for publication?
- How is news printed or broadcasted?
- Who works in the world of news and what are their jobs?

Anticipatory Mind Map ‘Minds into Music’
- Composing music
- Dance/Drama
- Instruments
- Interpretation and significance
- Use of music (advertisement, movies)
- Culture and music
- Songs and songwriting
- Radio

Potential Assessment Strategies
- Portfolio: creating a product; dance, song, instrument
- Written-reflection on Field Trips and Visits
- Self-reflection
- Narratives of Class Discussion

Language:
- Understanding and
- Listening
- Writing:
- Developing, organizing, using knowledge to apply
- Reflecting

Media Literacy
- Understanding Media
- Text & Forms
- Creating media texts
- Reflecting on media
- Creating and presenting
- Reflecting, Responding, and Analyzing
- Exploring Forms and Cultural Contexts

Music:
- Creating and recording a song/music
- Making a music video
- Creating instruments
- Write biography of composer
- Create a dance and teach
- Reflections on lyrics, songs, or music

Potential Directions
- ‘Minds into Music’

Potential Primary Resources

Potential Activities/Products
- Creating and recording a song/music
- Making a music video
- Creating instruments
- Write biography of composer
- Create a dance and teach
- Reflections on lyrics, songs, or music

Potential Questions
- How is music created?
- How does music become famous?
- What are different types of music?
- What makes a ‘good’ song?
- Is music important?
- How does music get played on the radio?
- Why do different people like different types of music?
- How do you write music?
APPENDIX G: ASSESSMENT PROCEDURES

FOR ‘MINDS INTO MARKETING’

Product Group/Peer Assessment


Name of committee: …………… Project Manager: ………………………

This rubric is going to be used to assess your end-product for your committee. You will use this rubric to assess your own product as a committee. Make sure everybody can agree on what you choose to circle or check off.

<table>
<thead>
<tr>
<th>Expert</th>
<th>Practitioner</th>
<th>Apprentice</th>
<th>Novice</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Quality</strong></td>
<td>The product is complete, creative, attractive, professional, and well-organized</td>
<td>The product is complete, attractive, and well-organized</td>
<td>The product is complete and attractive. Needs work to make it look more professional and organized</td>
</tr>
<tr>
<td><strong>Applies to Target Audience</strong></td>
<td>The product reflects the topic very well and attracts the intended audience</td>
<td>The product reflects the topic and attracts the intended audience</td>
<td>The product reflects the topic, but needs work to be geared towards attracting the intended audience</td>
</tr>
<tr>
<td><strong>Promotes Sales</strong></td>
<td>The product applies several well thought-out and creative marketing strategies to promote the event</td>
<td>The product includes several well thought-out marketing strategies to promote the event</td>
<td>The product includes marketing strategies to promote the event but needs work to include more efficient strategies</td>
</tr>
</tbody>
</table>

E = Expert (Innovate and informed. Applies knowledge/experience appropriately and shows evidence of critical thinking; work is completed above satisfactory levels)

P = Practitioner (Informed. Applies knowledge/experience appropriately and completes work on a satisfactory level)

A = Apprentice (Shows evidence of becoming informed. Has applied some knowledge/experience. Work is completed and progressing in quality)

N = Novice (Does not provide evidence of being informed. Knowledge/experience has not been applied. Work is not completed, or not completed on a satisfactory level)

Scoring criteria: Expert (min. 4E, 1P), Practitioner (4 E/P, 1A/N), Apprentice (4E/P/A, 1N), Novice (2N)
Collaborative Skills Peer Assessment


Name of committee: …………… Project Manager: ………………………

This rubric is going to be used to assess your collaborative skills. You will use this rubric to assess your own team members at the end of our group work. You will not have to put your name on the rubric, and you only show and hand in the rubric to your teacher. Make sure you read the standards you need to achieve to become expert marketing managers and team players.

<table>
<thead>
<tr>
<th></th>
<th>Expert</th>
<th>Practitioner</th>
<th>Apprentice</th>
<th>Novice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of Work</td>
<td>Provides work of the highest quality</td>
<td>Provides high quality work</td>
<td>Provides work that sometimes needs to be checked or redone by others</td>
<td>Provides work that usually needs to be checked or redone by others</td>
</tr>
<tr>
<td>Contributions</td>
<td>Always comes with useful ideas, puts in a lot of effort, takes initiative and works hard</td>
<td>Usually comes with useful ideas, puts in a lot of effort and works hard</td>
<td>Sometimes comes with useful ideas and completes what needs to get done</td>
<td>Rarely provides useful ideas and can refuse to participate or complete what needs to get done</td>
</tr>
<tr>
<td>Time Management</td>
<td>Routinely uses time well and gets things done on time. The group does not have to adjust deadlines because of this person</td>
<td>Usually uses time well, but may have procrastinated on one thing. The group does not have to adjust deadlines because of this person</td>
<td>Tends to procrastinate but gets things done in the end. The group does not have to adjust deadlines because of this person</td>
<td>Rarely gets things done on time and the group has to adjust deadlines because of this person</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>Actively looks for and suggests creative solutions to problems</td>
<td>Suggests and supports solutions suggested by others</td>
<td>Does not suggest solutions, but is willing to support solutions suggested by others</td>
<td>Does not try to solve problems or help solve problems. Lets others do the work.</td>
</tr>
<tr>
<td>Attitude</td>
<td>Never is publicly negative about other people’s work and contributions. Has a positive attitude towards the project and tasks</td>
<td>Rarely is publicly negative about other people’s work and contributions. Has a positive attitude towards the project and tasks</td>
<td>Occasionally is publicly negative about other people’s work and contributions. Usually has a positive attitude towards the project and tasks</td>
<td>Often is publicly negative about other people’s work and contributions. Can have a negative attitude towards the project and tasks</td>
</tr>
</tbody>
</table>

E = Expert (Innovate and informed. Applies knowledge/experience appropriately and shows evidence of critical thinking; work is completed above satisfactory levels)
P = Practitioner (Informed. Applies knowledge/experience appropriately and completes work on a satisfactory level)
A = Apprentice (Shows evidence of becoming informed. Has applied some knowledge/experience. Work is completed and progressing in quality)
N = Novice (Does not provide evidence of being informed. Knowledge/experience has not been applied. Work is not completed, or not completed on a satisfactory level)

Scoring criteria: Expert (min. 4E, 1P), Practitioner (4 E/P, 1A/N), Apprentice (4E/P/A, 1N), Novice (2N)
## Individual Understanding and Critical Thinking Assessment


NAME OF STUDENT: …………………………………

<table>
<thead>
<tr>
<th>Critical Thinking</th>
<th>Expert</th>
<th>Practitioner</th>
<th>Apprentice</th>
<th>Novice</th>
</tr>
</thead>
<tbody>
<tr>
<td>(portfolio 1, 2, 4, 6, 9, 10)</td>
<td>Accurately identifies and interprets evidence, graphics, questions. Thoughtfully analyzes and evaluates points of view and draws warranted conclusions</td>
<td>Usually identifies and interprets evidence, graphics, and questions accurately. Analyzes and evaluates points of view and draws warranted conclusions</td>
<td>Identifies and interprets clear evidence, graphics, and questions accurately, but has trouble with more subtle evidence. Analyzes and evaluates points of view and draws warranted conclusions</td>
<td>Does not identify or interpret evidence, graphics, and questions accurately. Does not analyze nor evaluate point of view, does not draw warranted conclusions</td>
</tr>
</tbody>
</table>

| Exemplifying and Classifying             | Accurately classifies and exemplifies several clear, as well as hidden, marketing strategies | Accurately classifies and exemplifies several marketing strategies | Classifies and exemplifies several marketing strategies, but needs help in doing so accurately | Does not classify and/or exemplify marketing strategies |
| (portfolio 3, 5, 8, 10)                  |                                                                                           |                                                   |                                                                                           |                                                                                                         |

| Reflecting                               | Provides evidence of self-knowledge and understanding and selects learning strategies that are most effective | Provides some evidence of self-knowledge and understanding and selects learning strategies that are effective | Provides growing evidence of self-knowledge and selects specific learning strategies | Provides little evidence of self-knowledge and does not select specific learning strategies |
| (portfolio 6, 7)                         |                                                                                           |                                                   |                                                                                           |                                                                                                         |

| Explaining                               | Uses sophisticated explanations that justify reasoning and conclusions                      | Uses explanations that justify reasoning and conclusions | Explains reasoning and conclusions, but needs work in doing so | Does not explain reasoning and conclusions |
| (portfolio 1, 3, 4, 8, 9)                |                                                                                           |                                                   |                                                                                           |                                                                                                         |

| Completion and overall quality of work   | Work is of the highest level of quality and completed on time                                | Work is of a high quality, and completed on time   | Work is of a satisfactory quality and completed on time | Work is not completed, or not completed on a satisfactory level |
| (portfolio 1-10)                        |                                                                                           |                                                   |                                                                                           |                                                                                                         |

E = Expert (Innovate and informed. Applies knowledge/experience appropriately and shows evidence of critical thinking; work is completed above satisfactory levels)
P = Practitioner (Informed. Applies knowledge/experience appropriately and completes work on a satisfactory level)
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Scoring criteria: Expert (min. 4E, 1P), Practitioner (4 E/P, 1A/N), Apprentice (4E/P/A, 1N), Novice (2N)
### Individual Assessment ‘Minds Into Marketing’

#### FEEDBACK CARD

**Project:** Minds Into Marketing  
**Collection Period:** Jan. 3, 2011 to February 14, 2011  
**NAME:**

<table>
<thead>
<tr>
<th>Evaluation</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding &amp; Critical Thinking Skills</td>
<td></td>
</tr>
<tr>
<td>Collaborative Skills</td>
<td></td>
</tr>
<tr>
<td>Product</td>
<td></td>
</tr>
</tbody>
</table>

#### Final Self-Assessment

1) This project really helped me to learn to…

   ![Comment](#)

2) I would like to get better at……

   ![Comment](#)

3) That’s why next time I would……

   ![Comment](#)