PROJECT - BASED LEARNING: 
READING TO FIND OUT

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Abstract

This qualitative research study investigated the observed behaviors and reported experiences of 5th grade students when project-based learning was implemented in place of traditional reading instruction. The study was conducted in a suburban school with 20 participants in an effort to increase motivation and engagement in reading. Data were gathered using surveys, teacher observations, questionnaires, reflective journals, rubrics, and student artifacts. The action research suggests that the use of project-based learning promotes student motivation, enthusiasm, and engagement in reading in the intermediate classroom. Further analysis indicates that planning, choice, collaboration, cooperation, and individual accountability are critical to the success of project-based learning.
Acknowledgements

Before I can tell you the story of my research I must acknowledge those who played behind the scenes. Though not every student was named in my study, their impressions, interpretations, and experiences are what have made this all possible. It is with heartfelt gratitude that I acknowledge my students and their parents for willingly and enthusiastically engaging in this experience with me. The smiling faces and light hearts of my students combined with their thoughtful insights have made this project more meaningful than I could have imagined. I am so lucky to have this record of the wonderful time we spent together.

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There is a man living in my house who I’m told I may be married to. Now that this study is coming to a close, I must thank my incredible husband who’s support and understanding have made it possible for me to be a student, a teacher, a mother, and a wife. All of these are passions and joys that I wouldn’t be able to pursue without his love and encouragement. Thank you, Jon, for letting me pursue these educational goals and for being such a wonderful husband and father during the long days and nights of research and writing. I promise, Mrs. Sherman will be home soon.

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# Table of Contents

Abstract.................................................................................................................................iii

Acknowledgements ................................................................................................................iv

List of Figures .........................................................................................................................ix

List of Tables ..........................................................................................................................x

Researcher Stance ...................................................................................................................1

Literature Review .......................................................................................................................6

  Introduction ..........................................................................................................................6

  Project-Based Learning .........................................................................................................7

  Student-Centered Classrooms ...............................................................................................10

  Motivation ............................................................................................................................12

  Best Practices .......................................................................................................................13

  Potential Challenges .............................................................................................................20

  Conclusion ............................................................................................................................27

Methodology ...........................................................................................................................29

  Setting and Participants .......................................................................................................29

  Procedure ............................................................................................................................30

  Data Collection Methods ....................................................................................................31

  Trustworthiness Statement .................................................................................................34

The Story of Us .........................................................................................................................38

  Getting to Know You .........................................................................................................40
<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Getting to Know All About You</td>
<td>48</td>
</tr>
<tr>
<td>Getting to Feel Free and Easy</td>
<td>50</td>
</tr>
<tr>
<td>Things We are Learning</td>
<td>53</td>
</tr>
<tr>
<td>Day by Day</td>
<td>69</td>
</tr>
<tr>
<td>Getting to Know What to Say</td>
<td>72</td>
</tr>
<tr>
<td>Data Analysis</td>
<td>74</td>
</tr>
<tr>
<td>Theme Statements</td>
<td>79</td>
</tr>
<tr>
<td>Research Findings</td>
<td>81</td>
</tr>
<tr>
<td>Next Steps</td>
<td>105</td>
</tr>
<tr>
<td>References</td>
<td>108</td>
</tr>
<tr>
<td>Appendices</td>
<td>113</td>
</tr>
<tr>
<td>A. HSIRB Approval</td>
<td>113</td>
</tr>
<tr>
<td>B. Principal Consent</td>
<td>114</td>
</tr>
<tr>
<td>C. Parent Consent</td>
<td>115</td>
</tr>
<tr>
<td>D. Presentation Rubric</td>
<td>116</td>
</tr>
<tr>
<td>E. Motivation for Reading Questionnaire</td>
<td>117</td>
</tr>
<tr>
<td>F. Reading Activity Inventory</td>
<td>121</td>
</tr>
<tr>
<td>G. Multiple Intelligence Inventory</td>
<td>125</td>
</tr>
<tr>
<td>H. Reading Attitude Survey</td>
<td>129</td>
</tr>
<tr>
<td>I. Efficacy Check-In</td>
<td>130</td>
</tr>
<tr>
<td>J. Mid-Study Check-In</td>
<td>131</td>
</tr>
<tr>
<td>K. Reflective Journal Prompts</td>
<td>132</td>
</tr>
</tbody>
</table>
L. Mini-Project Reflection ................................................................. 133
M. Assembly Reflection ...................................................................... 134
N. Presentation Plan ........................................................................... 136
O. PBL Post-Survey/Reflection ........................................................... 137
P. Observation Checklist ..................................................................... 139
Q. PBL Parent Letter ........................................................................... 140
R. Pennsylvania Department of Education Standards ......................... 141
List of Figures

Figure 1. Student Artifact - Posters .................................................................46

Figure 2. Poem - Our First Project .................................................................47

Figure 3. Sample Inquiry Lists ........................................................................53

Figure 4. Reflective Moments I ......................................................................61

Figure 5. Student Artifact - Doll ....................................................................64

Figure 6. Student Artifact - Poster .................................................................67

Figure 7. Reflective Moments II .....................................................................69

Figure 8. Student Artifacts - Totem Pole and Quilt ........................................71

Figure 9. Student Artifacts - Trifolds and Diorama ........................................71

Figure 10. Code Bins ......................................................................................79
List of Tables

Table 1. Motivation for Reading Questionnaire I.................................74

Table 2. Motivation for Reading Questionnaire II...............................75

Table 3. Reading Activity Inventory.............................................76

Table 4. Multiple Intelligence Inventory .......................................78
Researcher's Stance

My education began at a high-achieving, suburban elementary school here in Pennsylvania. I now find myself teaching at a high-achieving, suburban elementary school, but in a different Pennsylvania.

The Pennsylvania I grew up in was filled with farmlands and locals. Everyone in my town knew each other, where they had grown up, and what they were doing on any given night of the week. It was not a small town I grew up in, but it had the small town feel. Now, I am teaching less than 10 miles from that same town, but the community I grew up in is nowhere to be found.

The Pennsylvania I now teach in is filled with shopping malls and warehouses. The roads are filled with cars and people I’ll never recognize. This means that the school I am teaching in, though it has the same descriptors, is light-years away from the school I experienced as a child.

My elementary school experience was one that taught me to think for myself. It prepared me not only with knowledge, but with skills that I could transfer to my continued education and then eventually my adult life. Those same skills that my mother helped me hone on endless weeknights at the kitchen table are the skills I am longing for my students to embrace and apply as they venture away from elementary school and begin the difficult journey.
through middle school, high school, and beyond. It is with confidence, responsibility, and respect for themselves and their educations that I want to send my students forth into the world.

The school I teach at is comprised of grades K-5. Most students come from families that have at least one parent working in a nearby city with a lengthy commute. Many students come from families where moms and dads have very high expectations for their student outside of the classroom and want nothing but the best from them academically as well, but lack the awareness of appropriate involvement and often set unrealistic or inappropriate goals that their children have no hope of reaching. For example, a parent might expect their student to bring home top scores in all subjects but not want them to have any homework because homework interferes with their extra-curricular activities. Lots of my students are involved in more than one extra-curricular activity, and too often those are put before independent work or other educationally-related experiences.

Further, one-quarter of my students speak another language at home, and only one of those students is speaking Spanish. I have students in my class that are fluent in Greek and various Indian dialects. Some of their parents struggle to communicate in English and therefore rely on their child to communicate their own needs, which is a very difficult thing for most kids to do. There are many nice developments in the community surrounding my
school, but there are also a lot of town-homes, apartment complexes, and extended-stay hotels which increases the spectrum of socioeconomic stresses my students are exposed to.

The school I am teaching at used to be known for its small classes, high expectations, and high-performing students. That school is barely recognizable under the blanket of its current enrollment. Students are indolent and disrespectful. Exceeding standards is barely a priority, as often students are unwilling to put forth the effort needed to expand their own learning. Many students in my classroom would be perfectly content to read and regurgitate all year long. They simply want to know what is going to be on the test. I believe the old school can be awakened again, and that there is a way to help the students become more intrinsically motivated to learn and more involved in their own educations.

I am currently in charge of my own fifth-grade class, yet I have a heavy hand in the lives of the other fifth-graders as well. I work closely with two other fifth grade teachers to provide a controlled learning environment in which kids are not only studying, but also taking appropriate risks and developing as responsible humans. We encourage deep thoughts, and we believe we have high expectations for each student, regardless of background or ability. It is a shared belief on my team that every student can learn, and that it is our duty to find the best ways to do that.
This is not a task we can take on alone. As an experienced educator, I have found that it is the relationships you make with your mentors that have the most profound effect on your understanding. It is not simply through reading a book that we learn, it is the discussion of those books, the challenge of understanding, and the shared perspectives that create the most meaningful, transferable experiences. It is my hope that by engaging in project-based learning, my students will become motivated to read and learn for themselves and their own curiosity. My plan is to have the students engage in project-based learning in which they will develop their own line of inquiry that is meaningful to them, research and review their topics, then plan and prepare a presentation to showcase their learning.

Through the use of consistent one-on-one interactions, I hope to develop the confidence of my students as independent learners, which it is my belief will have a direct, positive impact on their own motivation and accountability in my class and beyond.

Though we all, students and teachers, live on the same earth, we have very different experiences on this earth. I believe that students are not taking school seriously because it is not exciting to them. Students need to be motivated to learn, not by rewards or incentives, but by intrigue and curiosity. It is my hope that through the use of discussions and conferences, I can help
my students set meaningful goals for themselves both as individuals and as learners.
Literature Review

Rather than leading the classroom through direct, teacher-led instruction, effective educators are allowing their learners to lead the way and embracing student-centered classrooms that provide more authentic and engaging learning experiences that are rich with literature and learning as well as supportive of individual needs and curiosity (Baker, Dreher, & Guthrie, 2000; Calkins, 2001; Davis, 2010; Guthrie, Wigfield, & VonSecker, 2000; Harvey & Goudvis, 2000; Pressley, 2002; Shanahan, 1997). John Dewey (1938), a proponent of experiential education, stated “every experience should do something to prepare a person for later experiences of a deeper and more expansive quality” (p. 47). Project-Based Learning (PBL) is a student-centered approach to investigative learning in the classroom (Diffily, 2001; Railsback, 2002; Fleming, 2000). Sometimes referred to as inquiry-based learning (Dreher, 2000; Memory, Yoder, Bolinger, & Warren, 2004), a project-based learning approach to literacy allows for more access to cooperative learning situations, affords students more choice and therein control of their own learning, and enables a more integrated, authentic approach to the literacy process as students work independently and collaboratively to answer meaningful questions about what they are experiencing in the classroom (Diffily, 2001; Hallerman & Larmer, 2011; Katz & Chard, 2000).
Deborah Diffily’s (2001) description of PBL suggests that it is not a theme or unit designed by a teacher with every activity planned in advance. It is not a product designed to answer specific questions posed by the teacher as a means to assess understanding. According to Diffily, project-based learning is individual or group projects that are designed by students to answer questions they themselves have about a particular concept or idea. Projects can even be designed to target specific standards by investigating a topic at length and in-depth (Hallerman & Larmer, 2011; Schlemmer & Schlemmer, 2008). Research suggests that teaching strategies, like project-based learning, that incorporate choice, collaboration, and ownership lead to increased motivation that ultimately translate to meaningful learning experiences and positive achievement gains (Bartscher, Gould, & Nutter, 1995; Diffily, 2001; Filippatou & Kaldi, 2010; Hallerman & Larmer, 2011; Pressley, 2002). This review of current literature describes project-based learning and student-centered environments, explicates student motivation and best practices in language arts, and provides solutions to challenges that may arise as teachers implement project-based learning.

**Project-Based Learning**

Project-based learning starts not with answers but with questions (Diffily, 2001). Students are introduced to a topic, then formulate their own queries and devise their own plan for retrieving information and reporting
what they have learned. A study by Guthrie, Wigfield, and VonSecker (2000) compared a project-based learning environment with a more traditional approach and concluded that students involved in the projects reported higher strategy use and curiosity for reading. In this particular study, which was designed to increase reading motivation among 5th grade students, the researchers relied on an integrated approach to instruction, where reading and writing were taught through the exploration of individual topics with little or no direct instruction. Students were introduced to an idea or concept and led through hands-on, observational activities meant to spark their curiosity. Once the students started questioning on their own, they were encouraged by the teachers to construct their own goals for gathering details, organizing information, and then communicating what they had learned. The projects culminated with a sharing of the constructed knowledge that the students had created. The method outlined in this study is referred to as CORI, concept-oriented reading instruction, which follows a similar framework as PBL in that students are observing, retrieving, comprehending, and communicating (Guthrie, Wigfield, & VonSecker, 2000).

Lillian Katz and Sylvia Chard (2000) suggest similar stages to project-based learning, but refer to them as “getting started” (p. 105), “field work” (p.115), and “concluding projects” (p. 129). Katz & Chard also suggest that when selecting a topic it must be somewhat related to children’s
experiences, or they will not be able to raise questions about the topic, which needs to be deep enough to be explored in depth for a length of time and from different angles, yet age-appropriate and not too controversial for in-school discussion (Katz & Chard, 2000; Memory et al., 2004).

Hallerman and Larmer (2011) suggest that PBL is among the best ways to prepare learners for the “demands of life, citizenship, and work in today’s world” (p. 8). According to their research, PBL accomplishes this by providing a practical way to teach/learn skills and content, creating a school environment that is more relevant and engaging, and preparing students for “21st century work”, which the authors state requires not just the knowledge and skills taught in traditional schools settings, but also “how to learn new knowledge and skills; to acquire, evaluate, and use information from a variety of sources; to work in teams; to solve problems and think critically; to manage complex tasks; and to communicate with others using a variety of media” (p. 9).

Katz and Chard (2000) go one step further and suggest that the aim of project-based learning is to cultivate the whole mind. They state that project work provides the opportunities necessary to grow not only academically, but socially and emotionally as well. When involved in projects students must make independent decisions, take leadership roles and show initiative, and
participate in group activities, all of which require understanding of the world beyond classroom content (Katz & Chard, 2000).

A sample project described by Hallerman and Larmer (2011) included shopping activities where second graders worked together to see where they could get the most for their money, then prepared a presentation on where to shop for which items and why. Another project centered on environmental issues in the local area and had students identifying sources of pollution in their town. Some fifth graders collected data and determined which cell phone plans would be best for their own families and then presented their conclusions to parents and classmates. Though the topic of each project was vastly different, the components of the projects were the same. There was a meaningful context, driving questions, choice, and a public audience (Hallerman & Larmer, 2011).

**Student-Centered Classrooms**

Project-based learning enables teachers to work more closely with their students, “acting more like a coach instead of a ‘deliverer of knowledge’” (Hallerman & Larmer, 2011, p. 16). What this translates to is a shift from teacher-directed to student-centered classrooms. In student-centered classrooms, the teacher is not often found at the front of the room addressing the whole class in a lecture. According to research done by teacher Laura Davis (2010), “the role of the teacher in the student-centered
framework was one of negotiation and mediation in developing student knowledge and skill through shared discourse” (p. 58). Student-centered learning gives the student opportunities to choose topic, direction, and presentation format of projects and assignments. Bomia, Beluzo, Demeester, Elander, Johnston, & Sheldon (1997) conclude that in this kind of learning environment, “the instructor’s purpose is to identify the learner’s needs in regard to motivation and design teaching plans that encourage self-motivation” (p. 17). They go on to suggest that teachers can achieve self-motivation in their students by using teaching strategies that include autonomy, interest, self-efficacy, and satisfaction (Bomia et al., 1997).

Above all, a student centered environment, which in this case would follow the PBL framework, is one in which students are given the resources, support, and time to implement reading strategies independently and then share what they have learned with others in the ways in which they are most confident (Katz & Chard, 2000). Observers in a student-centered, PBL classroom will likely see some students working together and others working alone. Some students may be working on a computer while others are reading and still others are writing. The teacher may be conferencing with individuals or groups about their progress towards common and individual goals or circulating the room in order to formatively assess the growth that is taking
place. In a student-centered classroom, everyone is actively engaged (Baker et al., 2000; Calkins, 2001; Harvey & Goudvis, 2002).

**Motivation**

Motivation is simply described as what makes a person want to do something. Intrinsic motivation is the desire “to do an activity for its own sake and out of interest and curiosity” whereas extrinsic motivation would be “doing an activity to receive a reward or other form of recognition” (Guthrie, Wigfield, & VonSecker, 2000, p. 331). In the case of schools, grades become the rewards and learners may be trained to recite for a test rather than explore in order to grow as individuals (Flaherty & Hackler, 2010; Pederson & Liu, 2003). Project-based learning fosters the intrinsic motivation of students by providing choice and allowing for collaboration and differentiation (Bartscher et al., 1995; Diffily, 2001; Filippatou & Kaldi, 2010; Hallerman & Larmer, 2011). Good teachers seek not only to teach students, but to motivate them to want to learn (Bomia et al., 1997). Project-based learning, when implemented utilizing best practices, can lead to a rich, meaningful, motivating, and memorable learning experience for all of those involved (Davis, 2010; Diffily, 2001; Flaherty & Hackler, 2010; Guthrie, Wigfield, & VonSecker, 2000; Hallerman & Larmer, 2011; Schlemmer & Schlemmer, 2008).
Best Practices

Engaging teachers produce motivated learners and positively influence reading achievement (Baker et al., 2000; Frager & Frye, 2010; Pressley, 2002). But what specifically can teachers do to bring learning to life and get kids excited about reading? In a study of effective classrooms, Michael Pressley (2002) found that the most engaging teachers allowed for cooperative learning, gave students the opportunity to make meaningful choices, made curriculum connections both in and out of the classroom, and fostered originality.

Choice can be a very motivating factor in the classroom (Bartscher et al., 1995; Fielding & Pearson, 1994; Guthrie, Wigfield, & VonSecker, 2000; Pressley, 2002). Recognized psychiatrist, theorist, and author, Dr. William Glasser (1992) went so far as to say that unless students have choice in the classroom, they will be unable to connect the experience of learning with the experience of living. He indicated that when activities are perceived to be voluntary, they become more attractive and students will work harder to attain success because they will make choices that make sense to them and that they can make personal connections to. These connections then translate to authentic learning rather than simple regurgitation or worse yet, complacency and non-participation. Glasser believed that all behavior is chosen and that humans act with the most concern in situations that satisfy
their basic needs, namely survival, belonging, power, freedom and fun. By limiting choice in the classroom, he suggests, the teacher becomes a boss rather than a leader (Glasser, 1992).

In her second-grade, private-school classroom, Davis (2010) found positive results when she allowed her students to take part in the decision-making process. She used literature circles, small-group instruction, mini-lessons, collaborative reading tasks, and self-directed learning periods for literacy instruction for ten days, then immediately switched to skills-based, whole group instruction for ten days. Her research aimed to answer the question, “How do student-centered and skills-based curricula affect students’ experiences of classroom literacy?” (p. 63).

Through the use of focus-group interviews, surveys, assignment evaluations, and observations, Davis was able to conclude that when students were given the opportunity to make choices and work collaboratively, their perceptions about reading were more favorable. Her students identified individual choice as a crucial element in their motivation to read. Davis’s study (2010) suggests that the collaborative process allows students to “share control of learning processes and outcomes” (p. 74) thereby increasing interest and engagement in reading.

Collaborative learning, in which students work closely with other students to attain knowledge both directly and indirectly related to
objectives, can also have positive effects on student attitudes and output (Bomia et al., 1997; Flaherty & Hackler, 2010). Collaboration allows students to meet academic and social needs simultaneously as they seek assistance or guidance from their peers (Flaherty & Hackler, 2010; Gambrell, Mazzoni, & Almasi, 2000). Higgins, Miller, & Wegmann (2006) state that “learning is social and collaborative” (p. 316) and that students need to be able to share what they have learned. John Dewey (1938) said, “development of experience comes about through interaction” (p. 58). Specifically in the area of writing, partnerships increase opportunities for feedback and boost the confidence of students as they work closely with other students on their level (Hsu, 2009). Researcher and writer Lucy Calkins suggests reading partnerships in which students can discuss what they have been reading independently in a safe, consistent environment. She warns that while discussions among peers promote comprehension and higher level thinking, they are not meant to be the only means of comprehension instruction. Mini-lessons and teacher modeling are important components of a balanced classroom (Calkins, 2001).

In order for a student-centered environment to be successful, there must be an element of modeling (Calkins, 2001; Harvey & Goudvis, 2000). Timothy Shanahan (1997), former president of the International Reading Association, states that “there is more to learning than just doing, or we could profitably abolish schools and put children to work” (p. 18). Mini-lessons,
short, single-topic or small group instances of direct-instruction, are a crucial part of any student-centered classroom (Shanahan, 1997; Calkins, 2001).

Higgins et al. (2006) describe mini-lessons as “concise lessons that focus on one specific skill, strategy, or procedure. They usually last 10 to 15 minutes and can occur any time...” (p. 311). If a teacher is going to be truly in tune with what is going on in the classroom, he or she must engage in meaningful dialogue with the students and then be able to translate that dialogue into action (Hsu, 2009). When the needs of individual students overlap, teachers can form small groups to review or re-teach skills and concepts (Calkins, 2001). Frager and Frye (2010) suggest that good teachers “design mini-lessons to teach higher-level skills and strategies that address their students’ weaknesses” (p. 58).

The students are then released back to their independent work and apply those skills as necessary. There needs to be a balance between guidance and discovery in the student-centered classroom, and teachers must clearly communicate goals in order for each student to be successful (Calkins, 2001; Railsback, 2002; Shanahan, 1997).

Just as students find motivation in choice, they find motivation in ownership as well (Wigfield, 2000). Moriarity, Pavelonis, Pellouchoud, and Wilson (2001) expressed the importance of student/teacher interdependence in the classroom in their study of second- and fourth-grade students at a midwestern elementary school. These researchers set out to increase
motivation in the language arts classroom by implementing three specific strategies: cooperative learning, goal setting and personal reflection, and integrated activities. They concluded that students were more motivated to learn when they had a “personal stake in what they are learning” (p. 21) and the results of their study show positive changes in student (and parent) attitudes towards learning and school and also increased academic success.

It is a sense of power over their learning that motivates students to become more active participants in classroom activities (Morrow, 2002; Glasser, 1992). Involving students in the goal-setting process at the beginning of a new book or project helps give them a sense that what they think matters all the time, not just when it’s in response to a direct question (Johnson & Johnson, 2004). Shanahan (1997) states that “without a clear conception of the desired learning outcomes, it is impossible to plan, teach, or assess in powerful ways” (p. 16). Teachers should be the ones in charge of “identifying the specific skills or concepts that the student will learn, forming clear academic goals, and mapping out how the goals tie into school, state, and/or national standards” (Railsback, 2002, p. 15). However, making the students part of the project-devising process is a means of giving them ownership over the learning process and making the learning more meaningful (Margolis & McCabe, 2004; Railsback, 2002; Schlemmer & Schlemmer, 2008). Sue Flaherty and Rhonda Hackler (2010) suggest that when work is too easy, students
don’t see the value in it and that through differentiation, or individual goal setting based on student need, students are more likely to attempt activities that have increased benefits.

Paolo Freire’s (1968) model of the banking approach to education, where knowledge is “deposited” by teachers and “the scope of action allowed to the students extends only as far as receiving, filing, and storing the deposits” (p. 72) is where many of today’s teachers have found themselves due to the pressures of high-stakes testing. In the banking model, the teacher knows what is going to be taught and teaches it without regard to interest or ability of the students involved. Project-based learning would be the opposite of that. Teachers that utilize PBL work alongside students to cultivate their skills and foster the independent function and application that signifies a successful learning experience.

In a description of successful reading programs by Slavin, Chamberlain, & Daniels (2008), students were motivated to work hard because they had set their own personal goals (in collaboration with teammates and teachers). The students kept personal logs of their progress, strengths, and weaknesses and used them to identify skills they still needed to master. Slavin et al., also concluded that the students were motivated to keep working when they saw they were being successful. In a student-centered classroom teachers can
recognize individual and group success by providing frequent, specific feedback (Slavin et al., 2008, Hallerman & Larmer, 2011).

Marzano, Pickering, and Pollock (2001) also conclude that “students can effectively provide some of their own feedback” (p. 99) by keeping track of their performance or accuracy with regards to a new skill. Marzano et al. explain three other effective uses of feedback in the classroom as well. First, they suggest that “feedback should be corrective in nature” (p. 96). For comments to be most effective, teachers need to recognize not just what the student is doing correctly, but what he or she is doing incorrectly as well and what needs to be done to rectify the discrepancy. Second, Marzano et al. state that “feedback should be timely” (p. 97). When there is a long delay between action and correction, the effectiveness of the response is diminished. Conversely, if the feedback is given too soon, it also loses effectiveness as students need time to process activities and information in order to make meaning of it. Last, “feedback should be specific to criterion” (p.98). This kind of recognition gives students a sense of where they are in reference to the targeted skill or content.

Project-based learning provides teachers with the opportunity to incorporate many of these best practices. In PBL settings, students choose topics that interest them, set personal goals, take ownership of their learning, and work collaboratively on their own instructional level to meet expectations.

**Potential Challenges**

When the components of project-based learning, student-centered environments, cooperative learning, and integrated learning experiences, come together, they create a powerful learning environment that increases the intrinsic motivation of the learners involved and produce active thinkers and problem solvers (Davis, 2010; Diffily, 2001; Flaherty & Hackler, 2010; Guthrie, 2000; Hallerman & Larmer, 2011, Hsu, 2009). Getting those components to come together in an effective way can be somewhat of a challenge. At the forefront of many teachers’ minds in the 21st century is the issue of standardized testing and what is attached to the test scores. According to a study of teacher attitudes about student-centered learning by Susan Pederson and Min Liu (2003), “One concern teachers raised about using student-centered activities was that they are not necessarily helpful in preparing students for standardized tests” (p. 69). Teachers generally felt that the tests were measuring factual information, and the student-centered learning activities would take away from teacher-directed lessons that focused on the factual knowledge (Pederson & Liu, 2003). Many teachers get bogged down by the weight of standardized test-pressure and resort to test preparation rather than meaningful learning (Higgins et al., 2006).
Hallerman & Larmer (2011) suggest that teachers attempting project-based learning can meet necessary standard requirements by “designing projects that focus on important content standards” (p. 8). They believe that projects allow for deeper exploration of concepts and therefore increase transfer and retention. Rather than rush through the year trying to “cover” content, teachers using project-based learning are “uncovering” topics by employing necessary skills and strategies (Katz & Chard, 2000).

Another concern teachers expressed, according to Pederson and Liu (2003), is that of being able to meet the needs of diverse learners. Teachers in their study claimed that “for students who read below grade level, it is difficult for them to use rich text resources independently. They are unable to find the information they need without support” (p. 71). Pederson and Liu (2003) share additional concerns about students with special needs who lack the ability to initiate learning and make decisions about their own work. Some teachers predicted that student-centered learning environments would in fact be detrimental to students who struggle to work independently, though most did believe that student-centered learning would be beneficial to all students though some may require extra support (Pederson and Liu, 2003).

When support is not available, students’ individual learning needs can be reached by differentiating instruction (altering content or learning goals per individual student needs) within the project framework. Phil Schlemmer
and Dori Schlemmer (2008) offer a step-ladder over this hurdle by identifying what teachers should differentiate and how they can do so effectively. They divide what to differentiate into three categories: content (what students are expected to learn), process (how they will learn it), and product (how they will show what they learned). They also divide how to differentiate into three categories: readiness (what prior knowledge the students bring to the project), interest (what intrigues the student individually), and learning profile (the strengths and weaknesses each student has as a learner). Differentiation can occur in one or more of these areas in order to provide worthwhile experiences for authentic learning (Schlemmer & Schlemmer, 2008).

Level of prior knowledge is another factor that must be considered when planning a student-centered classroom because students will most likely be operating in a differentiated environment (Frager & Fry, 2010; Memory et al., 2004). In a study by Lutz, Guthrie, and Davis (2006) students who received a greater amount and assortment of scaffolds, or connections to prior knowledge, showed greater gains in reading comprehension than students who did not. Frager and Frye (2010) state that, “Good teachers design before-reading activities that motivate students, activate their prior knowledge, introduce new vocabulary, and develop an awareness of the questions, issues, and debates that frame the text students are reading” (p. 57). Guthrie, Cox, Knowles, Buehl, Mazzoni, and Fasulo (2000) also suggest
the use of modeling, pre-reading, and discussion to activate prior knowledge. In order to ensure these kinds of connections will occur, the topics chosen for projects should be relevant to the lives of the students involved (Hallerman & Larmer, 2011; Katz & Chard, 2000).

Memory et al. (2004) and Shanahan (1997) agree that student-centered instruction requires expert guidance, which can prove to be a challenge for classroom teachers. Shanahan specifically communicates a need for balanced instruction in the areas to be integrated. He states, “maximum cross-curricular benefits would result only if both reading and writing received instructional attention” (p. 16) and continues that not every subject can be suitably integrated, so teachers must integrate carefully to suit their students’ needs. His research indicates that when students take part in a meaningfully integrated language arts curriculum, their motivation increases as well as their understanding. Dreher (2000) also supports the merging of instruction and states that integrating content areas with language arts not only boosts students’ literacy, but also provides necessary content knowledge. In a study by Morrow, Pressley, Smith, and Smith (1997), students who participated in an integrated reading/language arts approach with science texts performed better in literacy and science than those students who did not have the content integration (as cited in Dreher, 2000).
Content integration is also a possible solution to another key issue teachers face whether using project-based learning or a more traditional approach: time (Memory et al., 2004). Grant (2002) recognizes that more time spent on projects means less time spent on other content curriculum. Along with integrating projects across content, Grant (2002) also suggests that in order to meet necessary standard requirements within specified timeframes, PBL should be integrated slowly, one project at a time, so that teachers can design projects to meet the needs of their students and the standards.

Research points to a loss of focus during independent work as a potential time-eater and added challenge to the successful implementation of a project. Frustration levels and anxiety can be difficult barriers to overcome according to Margolis and McCabe (2004) and can lead to “dysfunctional but unavoidable avoidance reactions: refusal to start or complete work; off-task dawdling; unthoughtful, careless responses; distractibility and fidgetiness” (p. 242). The teacher’s role in a student-centered classroom is crucial to avoid possible miseducative experiences that inhibit the positive growth of further experiences. According to John Dewey (1938),

It may be a loss rather than a gain to escape from the control of another person only to find one’s conduct dictated by immediate whim and caprice; that is, at the mercy of impulses into whose formation intelligent judgment has not entered. (p. 65)
Pederson and Liu (2003) call behaviors such as this “floundering” and describe them as a loss of direction or failure to develop a productive plan. According to Pederson & Liu (2003), some teachers felt that this loss of focus would waste too much time and diminish the effectiveness of the project while others felt that it would actually benefit the student. These benefits were described as such; first, students would actually become better problem solvers as they reflected on their difficulties and developed new plans for success; second, students would be forced to address their frustrations which would ultimately lead to growth in their sense of self-efficacy; and third, learning from mistakes gets to the heart of inquiry and students can learn from wrong answers as well as right ones (Pederson & Liu, 2003).

Finally, assessing project-based learning challenges many teachers as well. Traditional testing alone would be an inaccurate measure of the depth of learning that has occurred (Grant, 2002). Therefore, having students create projects just to take a test would not be a clear assessment of knowledge and skills gained. Research states that assessments should be “authentic to the objectives of the assignment” (Grant, 2002, p.3) and “balanced” (Hallerman & Larmer, 2011, p. 47). Hallerman and Larmer (2011) call for a balance between the assessment by the teacher of individual content knowledge and by the student of team skills (as they apply to the project). Knowledge and skill use can be assessed using rubrics, which both Grant and Hallerman and Larmer
agree on. When teachers create rubrics to evaluate projects, they are also communicating expectations thereby articulating early on how projects will be evaluated (Grant, 2002, Hallerman & Larmer, 2011, Schlemmer & Schlemmer, 2008).

Schlemmer & Schlemmer (2008) outline the rubric creation process and provide suggestions for successful practice. First, one should consider the content standards and curriculum guidelines that may be set by states and school districts. Once those are identified, the areas to be assessed can be determined based on how the project will be implemented and completed and explained in detail. Schlemmer & Schlemmer suggest holding a class meeting to discuss the creation of project rubrics as a way to increase ownership and identify levels of quality that help to establish clear expectations before the project begins. They also suggest that posting the rubric in the classroom and referring to it throughout the project helps students stay focused on their progress and modify their work as needed.

Each area of the rubric will need to be explicataed using a predetermined scoring system. Schlemmer & Schlemmer (2008) suggest a four-point system, where four exceeds the standard, three meets criteria (and therefore must be articulated most carefully), two indicates that work has been completed, but does not meet expectations for the standard, and one reflects insufficient evidence of understanding or achievement. Schlemmer &
Schlemmer warn that no matter where on the rubric a student’s work falls, the teacher must assess based on evidence, not opinion, and the teacher’s perception of student effort should not effect the assessment.

Though there are potential challenges to the implementation of project-based learning in the classroom, research provides suggestions to combat them and make project-based learning a positive environment for student learning (Hallerman & Larmer, 2011; Pederson & Liu, 2003 Schlemmer & Schlemmer, 2008).

**Conclusion:**

Engaging young readers is a key component to success in the classroom (Baker, et. al, 2000). Best practice research suggests that the most engaging teachers allow students to make choices about what they are learning and how they will attain and display that knowledge (Davis, 2010; Glasser, 1992; Pressley, 2002). Engaging teachers allow students to take ownership over their learning by making them a part of the goal-setting and monitoring process and providing specific, corrective feedback that helps students evaluate and assess their own progress and direction (Calkins, 2001; Glasser, 1992; Marzano et al., 2001; Moriarity et al. 2001; Morrow, 2002; Railsback, 2002; Shanahan, 1997; Slavin et al., 2007). Collaborative learning also engages learners and provides much-needed socialization in the classroom (Bomia et al., 1997; Calkins, 2001; Flaherty & Hackler, 2010; Hsu,
Project-based learning is a teaching approach that incorporates these best practices by providing authentic learning experiences that incorporate 21st century skills with meaningful, collaborative experiences in the classroom directly influenced by student interests and curiosities (Bartscher et al, 1995; Diffily, 2001; Filippatou & Pearson, 1994; Grant, 2002; Hallerman & Larmer, 2011; Katz & Chard, 2000; Railsback, 2002; Schlemmer & Schlemmer, 2008).
Methodology

Setting and Participants

The school where I teach is one of sixteen elementary schools in a district that serves a large urban/suburban area in eastern Pennsylvania. The class described in this study was comprised of 9 girls and 11 boys, all aged ten or eleven at the time. The class was assigned to me by my building’s administrator and was designed to include students of varying ability levels. There is one child with a gifted IEP, and one with a 504 plan for speech and language support. Four of the students in my class this year were considered economically disadvantaged in that they qualified for free or reduced lunch. This population is typical for the school building as school-wide the population demographic includes 371 students, 176 girls and 195 boys. Our school is located in the suburban area of our district, but the school-wide rate of free or reduced lunch is 15%.

The students at this school are predominantly Caucasian (77%), with the largest sub-group being Asian/Pacific Islander (14%), then Latino/Hispanic at 6%, and Black/Non-Hispanic at 3%. That demographic is mirrored in my class, which is comprised of sixteen White/Non-Hispanic students (80%), one Latino/Hispanic student (5%), one Black/Non-Hispanic student (5%) and two Asian/
Pacific Island students (10%). Though none of the students in my class are considered English Language Learners or ESOL, there are five that speak languages other than English at home, including Spanish, Indian dialects, and Greek.

**Procedure**

In an effort to consider multiple perspectives on the data that were collected for this study several collection methods were implemented. These methods were selected to increase the validity of the study by providing ample opportunity for cross-checking and corroboration. The research story was framed using the following: student surveys, reflective journal entries, and individual conferences as well as researcher-collected field notes and assessment rubrics. The student surveys were used to provide a measure of student motivation before, during, and after the study. Also, short surveys were taken to gather student perspectives on methods of instruction used in the classroom. The reflective journals and conferences acted as a means for the students to voice their opinions and observations of the transition from teacher-directed lessons to student-centered projects. The implementation of project-based learning ultimately resulted in an oral presentation of what they had learned along with a visual aid such as a poster or slide show. The final presentation and the steps leading up to its fruition were assessed using a
rubric aligned with student-centered environments (Appendix D).

**Data Collection Methods**

First and foremost, the students were asked to complete a survey that was going to be used as a pre- and post-study record of their motivation towards reading. This “Motivation for Reading Questionnaire” (Appendix E) developed by Guthrie, McGough, & Wigfield (1996) measures student opinions on the subject of reading both in and out of school. Students were also asked to convey their likes and dislikes in regards to particular genre of reading in a Reading Activity Inventory (Appendix F). Once things got rolling with the study, the students were asked to give their own honest responses to a Multiple-Intelligence Survey (Appendix G) that was later used to help group them with their peers. These surveys, all multiple-choice, allowed me to assess the strengths and weaknesses of the individual learners in the class as well as measure the needs of the students as far as their attitudes towards reading. Student attitudes were also gathered using short open-ended surveys about preferred methods of instruction (Appendix H), classroom efficacy (Appendix I), and progress (Appendix J). At each stage of the project, students were asked to respond to journal prompts as well as answer a few questions orally about their experiences.

Less formal than the surveys and inventories, the reflective journal
entries had a more open feel and therefore afforded students a more comfortable place to express their interpretations and observations. In the journal entries (Appendix K), students were asked to respond to one of several possible stems. These stems were designed to elicit meaningful responses that provided me with an accurate picture of each student over time. The attitudes and ideas that were collected in the questionnaires and inventories were also evident in each student’s reflective journal entries. Trends became apparent in the way a student was responding to the prompts that supported the conclusions made based on survey responses. Students also completed separate reflections for each stage of the study, the mini-project (Appendix L), the large-group assembly (Appendix M), the preparation of their project (Appendix N), and their overall experience (Appendix O). Both the student surveys and the reflective journals presented me with authentic student responses and interpretations, therefore providing ample opportunity for corroboration.

For the duration of the study, I also kept a journal. This type of low inference descriptor allowed me to gather observations of student engagement and also comment on and consider the implications of what had been observed. The journal also included an observation checklist (Appendix P) which had been designed to assess participation and engagement. I began
utilizing these methods at the start of the school year in an effort to make preliminary assessments of student motivation and achievement before official data were collected. By beginning the observation process before the new strategy was implemented, I was able to become more fluent in the observation/journaling process and also identify any potential problems that may arise as I got to know this new class at the start of the year.

The rumination process of the reflective journal inevitably led to further questions as I reread and reviewed what was happening in my classroom. These reflective moments were recorded as codes and themes that became apparent as the study unfolded. Through the use of individual interviews, I was able to ask a few simple questions that sparked a conversation about a particular theme or idea. The notes from these interviews were recorded and were compared to the field notes taken during the transition process. This comparison of my observational notes to the student/teacher dialogue provided additional data that supplemented the analysis of student perceptions as well as my understanding of what may be transpiring.

The goal of this study was to observe and report the experiences of students and teacher when implementing project-based learning in the hopes of increasing intrinsic motivation for reading. In order to do that, the students had to attempt a project. The nature of the study had the students
transitioning from a teacher-directed classroom to one that was student-centered. Student achievement for the project-progression was measured using project-based learning rubrics. Though the rubrics themselves were not student-generated, the specific means of achieving each benchmark were discussed as a group and agreed upon by the class. The rubrics were introduced at the beginning of the group project and the individual projects. The use of the rubric as formative assessment allowed me to help keep the students on track as the same rubric was used summatively at the end of the projects. These assessments were analyzed as a means of determining student achievement throughout the study.

The data collection methods selected provided snapshots of student attitudes and achievement before, during, and after the implementation of project-based learning. The snapshots were then analyzed, organized, and arranged to tell the story of project-based learning in the fifth-grade classroom.

**Trustworthiness Statement**

As a teacher researcher, it is of the utmost importance that my students be authentically and ethically represented as participants in my study, which has been approved by Moravian College’s Human Subjects Internal Review Board (HSIRB) and my building administrator (Appendix A).
shared my research question with my principal and the parents and legal
 guardians of my fifth-grade class at open house and provided a consent form
 for both parties (Appendices B and C). These forms not only described the
 nature of my research, but also assured confidentiality and provided contact
 information for all related individuals at my school and at Moravian College.
 The consent form also provided parents with the opportunity to decline
 participation or withdraw children from the study at any time without penalty.

 All documents, sources, data, etc. were kept in a secure cabinet to
 insure the confidentiality of my students and the integrity of my results. This
 collection of data was available only to those directly involved with the further
 completion of my study.

 Once consent was obtained, I shared the purpose of my research with
 my class. The most crucial means of data collection was my field log, a digital
 notebook I used to record my observations and interpretations of what was
 going on in my classroom. To insure the validity of my observations, I needed
 to establish an open line of communication with my students. Cher Hendricks
 (2009) suggests using “member checks” (p. 114) to insure that researcher
 interpretations of students’ actions and motives are accurate. By checking in
 with my students throughout the study, I was able to confirm my conclusions
 and be sure that what I was reporting is reliable.
Another source of reliability can be found in the triangulation, or varied methods, of data collection. Triangulation, according to Hendricks (2009), provides more credibility in that multiple sources of data are in line to support findings and conclusions. The data I gathered fall into three categories: artifacts generated by the participants, observational data recorded by myself as the study unfolded, and inquiry data that answers specific questions about attitudes and experience (Hendricks, 2009). The majority of the artifacts in this study were student-generated pieces such as reflections and assignments. The inquiry data collected included surveys, written reflections, observation checklists, annotated field notes, and rubrics. The range and style of data collection varied such that I was working alongside the students in reporting what was going on in the classroom as my study unfolded. Students provided answers to journal prompts and survey questions that were in their own words. Where my observations and their responses intersect was where the most reliable conclusions could be drawn.

The study took place over a period of ten weeks, allowing for prolonged observation of the implementation of project-based learning. This prolonged observation insured that the reactions and effects I am reporting are, in fact, related to project-based learning. For the duration of the study, I was also involved in an ongoing discussion about my research as a member of an inquiry support group made up of fellow researchers. The chance to
“debrief”, according to Hendricks (2009), helped solidify interpretations, eliminate possible bias, and helped clarify the direction of my study.
The Story of Us...

The story of my research starts well before my dance with current literature had its first steady steps. While participating in discussions centered around the direction of American education, the question had begun to arise in my head, “When (and why) did we stop teaching kids to think?” I’d like to believe it was a trend that started well before I set foot into a classroom in any kind of leadership position. But the fact remains that I am now in the position of teacher and hold the impressionable young minds of many children in my hands each day.

I am teaching in an educational climate rife with storms of standardization and clouds of accountability, concepts I whole-heartedly support. However, the application of high-stakes testing as an umbrella to assess the competency of students and teachers, I feel, is negating the progress we have made as a creative, independent, confident nation. Teachers and students alike are becoming more and more afraid to explore curiosity in place of teaching to the test. It is my belief that when we take the curiosity out of learning, we are taking the light out of life.

Student-centered learning allows the student to follow his or her own path in the classroom with the teacher acting as a facilitator, rather than as a lecturer. In project-based learning, I felt, the students would be curious about
the topics at hand and would want to know more about something that they, in turn, could share with the class. Essentially, instead of choosing the topics of study myself, the kids would choose what they wanted to read about and then share what they learned with the class.

A traditional approach to reading instruction would have had the whole class reading the same book or story, discussing the plot, characters, main ideas, etc., then answering questions that would provide evidence of synthesis of skill and comprehension. This read and regurgitate approach to reading instruction has left many a student less than inspired to read independently and allows little opportunity to become more actively involved in the classroom.

The grand idea I had planned to get my students excited about reading was based on a Native American theme unit the fifth-grade had already been doing for a few years. In the past, my team partners and I had split the kids into leveled reading groups, each reading a novel with a Native American theme. We utilized a chapter of the social studies book for teacher-led whole-group reading lessons, and then watched a Native American-themed movie to wrap up our experience. We began our Native American unit the same way this year but added the project-based learning component as well.
Getting to Know You

Before we started the unit of study, I felt I had to get to know my students a little bit better as learners and individuals. This study took place at the beginning of the school year so I had only spent a few short weeks with this class before we started the projects. I began the data collection process with a Reading Activity Inventory and a Motivation for Reading Questionnaire (MRQ). I did this so that I could get a better idea of what my students’ attitudes were about reading. Did they see reading as an enjoyable activity? Did they read on their own? Was reading something they shared with their family or was it merely something they did for a grade? What these surveys told me was that they did, in fact, read on their own at home, and a majority of them responded that when reading topics they found interesting, they were likely to read more about it. This survey also told me that the majority of my students did not see reading as a social activity; fewer than half of them shared what they were reading with friends or family on a regular basis. More than half of the class saw reading as mostly a scholarly endeavor with reading as a means to improve their grades.

The results of this survey also told me that the kids in my class were not interested in reading at school per se but, rather, were more interested in the grade they would get for reading. I had a feeling that the majority of the students in my class would prefer a classroom where they could read, test,
read, test all year long because test grades are a concrete indicator of progress and achievement.

This myth was precisely what I was attempting to dispel with the implementation of project-based learning. Now, I knew the kids were reading what they wanted in school already because we had a 20-minute silent reading block each day and the kids were reading during this time, but it was not reading that was shared with the class other than we were all reading at the same time (including myself). The Reading Activity Inventory I had asked them to complete surveyed them on what they liked to read specifically and how often. I found it interesting that while the majority of the kids preferred sports and young-adult fiction, mystery books were what they were reading almost every day. While the information was thought-provoking, it wasn’t really relevant to the study. I decided to go in another direction, and rather than start off with what was interesting to them as individuals, I went for what motivated them to read.

According to the MRQ, 17 of 19 students liked to help their friends with schoolwork in reading. The strength of that response prompted me to attempt a mini-project with the students to see how they worked independently as well as collaboratively. The students were placed in groups of six, and given the task of reading a short fictional biography of a tall-tale character. The group was then to create a poster that illustrated both the
physical and affective character traits of the main character of their story. The
groups were created based on current reading levels and class averages.
There were three groups; above-level, on-level, and approaching-level. (The
word “level” in this case refers to books written at, above, or approaching the
fifth-grade level as aligned by the reading series.)

The students appeared to be enthusiastic about the projects and were
eager to get into their groups. I, too, was excited to get started and see what
they were capable of doing without me dictating their every move. Boy, was I
in for a surprise! In seven years of teaching, I have rarely seen groups get so
little done in such a long period of time. The students were given roughly 20
minutes together in their groups to get started. At the end of the 20 minutes,
only the above-level group had finished any significant amount of reading.

The below- and on-level groups were uncooperative and borderline
argumentative. When one student reminded his group to get on task, he was
met with inappropriate comments. A few kids were even seen hitting each
other with their books. The top three phrases I heard kids saying included
“Sorry”, “Stop it”, and “Where are we?” I almost fell off my chair as this
scene unfolded, but I remained an observer (only interjecting to remind them
that the books were for reading, not sparring). “Why didn’t I get up and whip
them into shape?” I ask myself now as I sit here reliving that fateful first day.
If I had intervened, would it have been teacher-directed learning once again? I
was trying to transition the students from a room where I had to dictate their
every move to a room where they felt confident to make decisions about their
own learning. I knew that it would make for a great conversation the next
day.

And it did. At the end of that first (crazy) session, I had the students
complete a quick reflection sheet. Before we began, I explained a little bit
about the reflection process and how reflections were for the writer of the
reflection to learn from as well as the reader. Then I let them write. I wanted
to know how they felt their time had been used during reading, so I asked
them to explain something that happened during reading that they were
proud of, something they felt they were struggling with after today’s reading
time, or something interesting they had learned that day in reading. It was
satisfying for me as their teacher to see how many students expressed
frustration with the lack of progress they were making as a group. I was glad
that they at least recognized that they were, in their own words, “wasting
time” and “fooling around”. On the other hand, I was a little disappointed
that only one student was able to suggest a way to avoid these behaviors in
the future. I considered that perhaps this was part of the reflection process
they were unable to grasp at this point, so I started the next day’s lesson with
a discussion about what they had shared on their reflection sheets.
As a class, they were able to come up with two ways to self-correct off-task behaviors. The first was to encourage each other to get back on task, and the second was to ignore the rest of the group and continue working on their own. I was pleased to see that they began applying these strategies right away and that the next lesson included more encouragement and less “Stop it”s. As the students finished the reading component of the projects, they became increasingly more motivated to work. I believe this is because they were creating a poster, which was a more creative means of expressing themselves than simply answering questions. The students eagerly got into their groups each day, but as I circulated the room with my checklist to discuss the characters and monitor their comprehension and involvement, I couldn’t help but notice a few students weren’t pulling their weight.

In an effort to gather some student perspectives on their own work ethics and those of their peers, I asked them three questions in a quick reading attitude survey that I had composed myself. I wanted to know if they preferred to read with someone, with the whole class, or alone. The class was evenly split between working alone or with someone so I felt as if the projects we were doing were aligned with at least some of their interests. I also asked them if they preferred to do projects alone, in a group, or with the whole class. This time, there was a distinct majority who preferred partner work, so once again, I felt validated in my choice of mini-projects as they were able to
work with small groups. Finally, I asked them if they preferred to work on projects at home or at school, and the overwhelming majority preferred at school, mostly due to the accessibility of resources and supplies. Although this quick survey supported my assumption that I had assigned a project aligned with their preferences, I couldn't help but have the feeling that somewhere I had missed the mark. Only a small number of students were really committed to the project, and others seemed only to contribute to the group when I was in close proximity. Their reflective journals this time turned out more positive remarks than frustration, but I'm not convinced we are all working on the same objective.

Upon completion of the posters, my concerns about equal effort on the part of group members took a sideline to the fact that two out of three groups did not attain the learning objective. The students were supposed to be able to describe the physical and affective character traits of the main character of their story through their poster and presentation. On presentation day, the students hung their beautifully drawn posters on the front board to share with the class, then proceeded to stand up there and stare at their audience. The groups were supposed to be able to tell us about their person, but none of the groups were able to answer any questions that I, or their classmates, had asked.
That tiny red flag had been waving around in my head for a few days. I knew the kids were excited about drawing their posters, but I hadn’t seen or heard much talk about the learning objective. In hindsight, I see now that the project hadn’t truly been student-centered because I had told them what their poster was supposed to be about. When reviewing their project reflections, it became apparent that their focus had been on the artistic component rather than the reading component because they were more interested in the creative process than they were in discussing tall-tale characters. This project wasn’t something about which they particularly cared. (Something I should have realized after reading their first Reading Activity Inventories—there is absolutely no mystery in a tall tale!) As we embarked on our individual
projects, I knew that I was going to have to really take a step back, pique their curiosity, and let them follow their own paths.

Their feelings about this project became glaringly evident in the final round of reflections. I arranged their own words to tell the story of my interpretation of the first project and theirs.

Our First Project

I thought it was a lot of fun
I hope no one goofs off ever again.

Today in reading,
in our
groups
I didn’t have a lot of talking
We could make this happen again by working hard.

I’m proud of my group today
Getting to work
It is so fun.
It was still fun to color and trace
That’s something I’m proud of
We got to start our people things
We don’t have to fight anymore
You can make it happen again; If we stay off topic we won’t make progress
because they worked really good today
We got to go over the questions and trace

The project we are doing right now is so fun
Mostly work; I got a really nice compliment about my drawing
When our group was tracing
and coloring
I hope we do a lot more of these projects.
They are fun.

Figure 2. Poem- Our First Project
Getting to Know All About You

I was really glad to be going through the research process alongside my students because I felt like there were a lot of experiences I had as a researcher that I could share with them. For example, the inquiry support group I was a part of at the time was a place I could go with my research roadblocks and questions. My group members were there to help me get past the points when I felt like I had lost direction or purpose. These groups serve a dual purpose, I am sure, in that they give the researcher another means of support other than the teacher (or professor). In order to help 20 kids get through the research process, I knew I was going to need some help! I decided to mirror the inquiry support group experience with my class and have them form groups that could act as intermediary support in the times that I could not be there for them.

In an attempt to avoid some of the off-task behavior I had witnessed during the leveled groups, and the behavior I knew from experience would occur if I let them choose their own groups, I had decided to use the Multiple Intelligence Inventory to get a handle on their strengths and weaknesses as individuals before hopefully grouping them with students who possessed different strengths. Before they started the inventory, I talked to them a little bit about what the idea of Multiple Intelligences was, and encouraged them
to answer as honestly as possible without skewing their answers for intelligences they think they do, or would like to, posses strengths in. In retrospect, the inventory I chose was a little above the students’ reading level. I would, in the future, use an abbreviated or modified version of the inventory.

While I feel that the use of the inventory was critical to the formation of successful groups, I can’t help but question the reliability of their responses. Many students had to ask for clarification of words on the survey (i.e. rational, vernacular, flaws, vivid). This leads me to believe that the results of their inventories may have been different if it had been more appropriately worded for their reading level.

The groups I formed using the inventory consisted of four students, each possessing strength in a different intelligence. (I did have to do a little finagling to keep a few students apart from each other as I knew that their social interactions would overtake their classroom achievement.) Each student in the group would be responsible for creating their own independent project. Once the groups were formulated, I had them move their desks so that they were all facing each other in what we referred to as their “tribe”. I explained to them that each “tribe” was an inquiry group, and that inquiry was a fancy word for question.

I told them that they were going to be helping each other answer and report on their own research questions. I explained that even though they
were now part of a group, each member was responsible for formulating his/her own question, performing their own research, organizing their own presentation, and sharing their own findings. I let them know that I grouped them with people who had strengths in different intelligences than their own. For example, someone who showed strength in the musical intelligence might be working with students who are stronger in the spatial, logical, and kinesthetic intelligences. Then I asked them how they thought this might help them complete their project more thoroughly.

Student responses were insightful and included “because they are good at some stuff you aren’t good at so they can help you with it” and “you could share things from different perspectives”. When I heard that student use the word “perspectives”, I nearly fell over with pride! “He gets it,” I told myself. “But do they all?” So I asked them why perspectives are important, and another student really nailed it. He said, “They see something in a different way than you see it”. The conversation was so motivating! I was really glad I stopped to discuss this before we started researching. I just hoped that they remembered to utilize each others’ perspectives to help expand and solidify their research.

**Getting to Feel Free and Easy**

I began the Native American Unit the way I had done it in the past. We read a chapter from the social studies book together and took notes using a
graphic organizer provided with the textbook. I had photocopied the graphic organizers for each lesson in the chapter and stapled them together with a cover page for each student. I wanted them to utilize these packets as their notebooks for the beginning stage of PBL.

Though the PBL model I was attempting does not exactly align with the Concept-Oriented Reading Instruction (CORI) developed by John T. Guthrie at the University of Maryland, I felt the stage names used in the CORI process would give my students a clearer picture of the what they were attempting at each step along the way to completion of their projects (Guthrie, Wigfield, & VonSecker, 2000). The first stage is Observation and Personalization, the second is Search and Retrieval, the third is Comprehension and Integration, and the fourth is Communication.

I wrote out the names of the stages on sentence strips, laminated them, and put magnets on them so that I could put them up on the board as we progressed through each stage, though I told the students that these were the stages of project-based learning. I wanted the kids to have a visual reminder of the steps we were taking. I told them we were going to be learning about a Native Americans together (Stage 1), and that they were going to be given the opportunity to pick a topic they were interested in to do research on (Stage 2). I let them know that each student needed to create a presentation (Stage 3) and report on their findings (Stage 4). Essentially, each
student was going to have to read, write a presentation, create an
appropriate visual aid, and make a 3-5 minute presentation to their class.

Observation and Personalization was what we were doing with the
textbook. The students were being introduced to Native American cultures
from across the United States and hopefully becoming curious about the
tribes and their ways of living. As we read and discussed, I encouraged them
to ask questions about what we were reading. When a student finally asked
me a question I couldn’t answer by looking back at the book, I got very
excited (and let them know it) and asked the student how we could go about
answering the question. Not surprisingly, the first response was “Google it”,
but I asked the class if there were other resources we could consult to get our
answer. With some guidance, they finally came to searching in books and
encyclopedia. I had wanted to make the point that computers can’t be our
only answer for research. Though computers can be used as tools that make
our research a little easier, students do not have equal or constant access to
technology in our classroom, so as researchers we were going to have to be
creative with our resources and help each other out.

As more and more of these questions began to pour out of their heads,
I encouraged them to write down their queries and things they found
interesting on the inside cover of their notebooks. That way, later, we could
use these questions and facts to help us get started on our projects. We
called these questions our “Inquiry Lists” (see Figure 3). I cannot begin to describe the sense of pride I experienced when the students started adding questions and thoughts to their lists without asking me first. At one point, I even overheard a student exclaim, “Oooh! I’m gonna put that one on my list!”

![Image of inquiry list]

**Figure 3. Sample Inquiry Lists**

Due to the unavoidable interruptions of a typical school week; assemblies, instrument lessons, assessments and activities, the observation and personalization process took us longer than I had anticipated, but I didn’t want to rush through it. I wanted to be sure the students had enough background to connect to as they started working independently and were enjoying the process of uncovering interesting facts about Native Americans.

**Things We Are Learning**

Once we completed the chapter, I introduced the next stage, *Search and Retrieval*. At this point, I had to have the kids pick a topic or question to guide their research. They looked over their inquiry lists and talked to their
tribes about how their projects might take shape. (Not very surprising that every student wanted to make a *Power Point* presentation.) I did advise against spending too much time planning their presentation at this point. I wanted them to allow their research to unfold before they started any serious plans for their presentations. After the near train-wreck that was the mini-project, I wanted to make my point clear that the objective of these projects was not to create a fancy presentation but, rather, to read and learn and report on what they had learned using their own words. I did not want their attachment to their desired finished product to inhibit the natural flow of questioning I was hoping to foster.

As the students chatted with each other, I circulated the room and conferenced with each student to get an idea of where they were headed with their research. I asked the students what it was that they were interested in finding more information about. Without passing judgement or making suggestions, I let the student control the conversation.

*Teacher:* So, *Olivia,* tell me what it is you want to know more about?

*Student:* I really think that igloos are cool.

*Teacher:* What’s so cool about an igloo, aside from its temperature.

*Student:* Well, I really think it’s cool that they can stay warm inside a house made of ice. And I think that they sometimes build fires inside and I wonder how they can have a fire and not melt the igloo.
Teacher: Wow! That’s a really good question. What are some key words you’ve been thinking about using to start your search?

Student: Well, I think I’m going to start with igloo. Maybe Eskimo would work, or that other word we used, Init [sic].

Teacher: Oh, you mean ‘Inuit’.

Student: Yeah! That’s the one. I saw it in the social studies book. There was a neat drawing of an Inuit tribe and they had igloos, I think.

Teacher: So how can we get you to go from “thinking” to “knowing”?

Student: I guess I’ll have to look it up.

When we started, there were a lot of students who were interested in finding out the particulars of teepees, longhouses, totem poles, and igloos. How the different tribes used the buffalo was also a popular question. I did not discourage them from doing the same topic as one of their classmates because I did not want to interfere with their curiosity in any way. I did find it interesting that one student selected her topic, in my observation, based on what one of her tribe members had chosen.

This particular student, Santana, had moved to my school at the beginning of the school year. Though her move was from another school in my district, she has been struggling to keep up with the expectations for homework and independent assignments that are considered routine at my school. Though Santana has shown instances of thoughtful, meaningful
learning and skill, they are few and far between. She is more often than not just hanging out in my classroom. She is quiet, but doesn’t do much work either. She is not an enthusiastic learner and does not put much effort into any kind of work. Her homework is often missing or incomplete, and she has a high rate of absenteeism. Santana is one child whose home life interferes with her ability to function in the classroom. In my estimation, she does not receive adequate, consistent support at home and splits her time between two houses as the result of her parents’ separation. I was not surprised when she chose to do the same topic as one of her tribe members, and I could only hope that she would step up and show me some of the great reading and writing I know she is capable of. My worst fear was that she would try to ride the coattails of her seat partner who I knew would be too reserved to say anything until after the fact.

The first day of research went smoothly. Students were starting to find out that they had to ask more than one question to get the information they needed to truly report on their topics. Also, by the end of our first day, I had a couple of kids who were unable to “find anything”. I don’t believe they couldn’t find anything about their topics... I believe that they didn’t find it on their first attempt. Rather than reframe their research questions, what these students chose to do when they saw their classmates “getting notes” was change their topics without telling me. It was hard for me to step back and let
it go, but if this was truly going to be a student-centered classroom I had to let
them do what they were most comfortable with. It was also hard for me to
accept that I would not be able to guide each and every student through this
process individually.

This first day was a flurry of questions that were all directed at me. It
wasn’t until after the lesson that I thought to myself “Duh! That’s why we
created these tribes! Have them consult their tribe members first!” The
questions students were asking me were not the kind that their classmates
couldn’t help them find the answer to. They ranged from “Where’s the T
encyclopedia?” to “How do you spell Algonquian”. In retrospect, these were
questions that many could have probably answered on their own, but it was
easier to ask me. I made a mental note to avoid answering these kinds of
questions in the future. At the end of the day, though it was a crazy day,
everyone had found something interesting to make note of so I considered
that a success.

My school is lucky enough to have a laptop cart with 16 laptops that
were purchased by our PTA. The whole school shares this cart, and teachers
can sign it out as needed. With the help of my teaching partners, I had signed
out the laptop cart for the fifth grade every afternoon for three weeks. The
other fifth-grade teachers were also taking their classes through these
projects so that all of the students would have the chance to present a project
for this unit and take part in the culminating activity. This meant that the 16 laptops on the cart had to be shared amongst 65 researchers. I am lucky to have six computers in my classroom already, so with the five more I got off the cart each day, it meant that my students were able to research on the computer every other day. I had also checked out every non-fiction book about Native Americans from our school library, wrangled up three sets of encyclopedias, and had a set of retired social studies textbooks for the kids to use as reference. I had spoken to the Academic Integration (AI) teacher who teaches the kids computer skills and the librarian about how they might support what was going on in the classroom. The librarian did a short unit on key word searches and reference materials and the AI teacher reviewed safe and appropriate web surfing tips.

After the topic-switching incident on day one, I considered how I might make the research process more clear and also get the commitment out of the students that would help them stay motivated. After consulting some PBL handbooks I had found when reviewing the current literature, I decided to write another letter to the parents reminding them what was going on in the classroom and asking for their support. I used a letter from *PBL in the elementary grades: Step-by-step guidance, tools, and tips for standards-focused projects* (Hallerman & Larmer, 2011) as a template for my parent letter (Appendix R), and I also attached the rubric included in the book that we
would use to guide the development of the projects and assess their completion. I did this in order to clearly convey the expectations for student work and the products they were being expected to complete. I wanted to be sure the parents were on board with this because while we devoted a serious amount of class time to the research and development of the projects, the students were inevitably going to need support at home in the way of help with research, supplies for projects, and practice with their presentations. The rubric described the components of the projects and how they would be assessed. I reviewed the letter and the rubric with the students before I sent it home to once again support the understanding of expectations for their projects.

On day two of research, we started out strong. I had one student ask if she could keep reading the book she started with yesterday. I was floored! This student, Jennifer, is another quiet student who doesn’t usually put much effort into her work. Add to that, she is chronically disorganized. I had anticipated more of a struggle to get her to buy into these projects. Jennifer appears to have a creative spirit, her outfits alone tell you volumes about her imagination. One day during this process, she came in with a hot-pink leopard-print shirt, black lace gloves without finger tips, and black knee-high boots. She looked like a mini-Madonna (circa 1984). While I am sure Jennifer takes great care with her outfit selection, she is often content to just do the
bare minimum in school. She is a very social student and is often more satisfied to spend class having a laugh rather than thinking deeply and discussing the topics at hand. The fact that Jennifer was so interested in a book about buffalo told me that there was hope in student-centered learning environments. Though I celebrated her commitment to her research, on the inside I couldn’t help but think “How long will this last?”

The students were beginning to share interesting facts with their tribes, which I had hoped they would do. My initial thought was that it would help if their tribe members knew a little bit about each others’ topics so that when they got stuck later on, they had a clue what their tribe-members were talking about. I also thought it might be motivating to hear someone other than me say “Oh, cool!” in response to something they had found in a book or online. Sharing what they were learning also helped their tribe-members beef up their own presentations as many of their topics overlapped. That’s not to say this was a floundering-free experience, though. I did have to spend some time with the kids on computers letting them know that while they were eventually going to need pictures for their presentations, spending the majority of their computer time on Google Image was not going to be very productive in the long run. They were enjoying their freedom, and I wanted to let them enjoy it, but the task-master in me knew that we were going to run short on research time very quickly if we didn’t keep our priorities in line.
I had planned to spend about a week on the Search and Retrieval stage of the projects, so I did a quick reflection with them to see how things were going. As I had anticipated, the majority of the students chose to tell me something interesting they had learned in their research, but a few expressed frustrations instead. With each reflection we did, the students became more contemplative and took a little longer to answer. Those who chose to write about their frustrations all had an honest and appropriate solution to their problems, the majority of which were that they weren’t finding what they wanted so they just had to look harder or in a different place. To me, this signified a move toward understanding the power of the reflective process and that they were actually using it as a learning tool. Figure 4 illustrates the key moments shared in the reflections that expressed frustration. Every time a word was repeated in a reflection I added it to the word cloud, so the larger words express the feelings shared by more of the class.

![Figure 4. Reflective Moments I](image-url)
In another attempt to keep the group focused on the information, rather than the presentation, I posted the relevant history standards from the Pennsylvania Department of Education on our objective board. The list of related standards for these projects is more than three pages long (Appendix Q) so I chose to only post the history standards. To me, the history standards most closely pinpointed the focus of their projects at this stage.

Our research progressed nicely for about a week. During research time, students were taking notes in their notebooks, talking about their topics with their tribe members, working on computers to type and research, reading books, sharing resources, and moving appropriately around the room. Some chatted informally as they passed their classmates, but most were eager to get to work. Often when they stopped to chat, I would overhear comments about their progress such as, “I’m working on my writing” and “I need to finish my last paragraph”. Computers were snatchèd up the moment they become available so it seemed there was a revolving door at the computer table.

The majority of the students were able to conduct their research between home and school with little help from myself. I did a quick check-in with each student during research time and only found one student, Lisa, who was expressing frustration. I don’t believe it was Lisa’s lack of effort that was
holding her back. I feel it was her attachment to a very specific question/topic, and the fact that she was having a hard time finding information to report on it. Lisa is a very creative student who loves to be in the spotlight. She is a natural performer and was very much looking forward to presenting in front of the class. When I reviewed her notes with her and saw how little information she had in comparison to many of her classmates I, too, became a little worried for the success of her project.

After talking with Lisa about the different methods of research she had used (home, school, internet, books) and the key words she had employed (Iroquois dress, clothing, accessories, garments, traditions), I was a little stumped. Then it dawned on me... her research wasn’t telling her anything new, so it must be time for her to stop! This conversation brought back the words of my own inquiry group. When we all wanted to know when to stop our own research, we were told by our professor to stop whenever the fieldwork wasn’t showing us anything new. I felt like those words applied to Lisa’s situation as well. She had been researching diligently and wasn’t able to find anything new, so it was time for her to move on to the next stage.

Rather than talk to her about new words or topics to look up, I talked to Lisa about ways she could present what it was that she had already found.
She told me she was planning to make some clothing for a doll she already had that would showcase the Iroquois style and then make a little poster or Power Point that would explain the key components. I asked her if she had enough information to get started on that. She said that she did, so I suggested that maybe she was ready to progress to the next stage of our process, Comprehension and Integration where we would take what we learned and start turning it into something new.

While Lisa’s problem was easy enough to solve, there were two other problems I found difficult to deal with. The first problem was time. There simply wasn’t enough. With assemblies and instrument lessons, pull-outs, and testing, not every student was getting enough time in school to work on their projects. I had sent the letter home to parents asking for their support, and while many told me they were working on their projects at home, I wondered how many really were. To get a better feel for this, instead of doing the regular reflection this week, I had them complete something I called the “Mid-Study Check In”. When reviewing this check-in, the majority of the students stated that they were working at home, did feel like they were learning, and were enjoying the process.
What ended up being most useful was seeing what questions they still had about their topics. From these questions, I took the most popular topics and spent some time linking resourceful websites to my own school homepage to maximize search time for the remainder of the week.

Lisa had felt like she didn’t have enough information to get her project rolling. On her check-in, she made a little note on the bottom that said “I’m confused. It’s not going the way I wanted it to”. But when we talked about the kind of project she was going to do, it turned out to be just the right amount of usable, relevant details. There was another student, Mark, who had a similarly scant notebook but not a clue what he was doing with it.

Mark is a perpetually happy student who gets Cs with a smile. Mark visits the reading specialist three times a week for extra support and has been doing so since first grade. Mark’s home life consists of video games and playing with his brothers, and he will tell you about it with abandon. He is a willing participant in school and loves to please his teachers, but his ability to work independently is heavily reliant on his peers. When he is surrounded by students who are on task, Mark is on task. When given the freedom to wander, Mark will wander. Similar to Santana, Mark is the kind of student who needs constant direction. I began to fear the PBL scenario would not be the best opportunity for Mark to shine.
Each day I would stop by Mark’s workstation and ask him to tell me something new he learned about the way Native Americans used buffalo. With great enthusiasm, he would tell me the same facts he had told me the day before, but in a new way. When I would ask him another question about his topic, one that I felt his classmates might naturally ask during his presentation, he would show me his “whole page” of notes and tell me he was “just going to look that up”. I didn’t ask him the same question each day, but I did begin to stop by his workstation more often throughout the week. I didn’t want to be guiding his research, but I didn’t want him to fall too far behind either. I knew that he wasn’t going to be doing much work at home, so I wanted him to get as much from his school time as he could. Really, I wanted him to want to get as much out of this as he could, but I didn’t know how to convey that to him without passing along my own judgements and biases.

Mark never filled out his mid-study check in, even after several requests on my part, but he did fill out the efficacy check-in I devised for the end of the week. This check-in was designed to help them assess how productive they were being in class, prepare for the weekend, and help them put the remainder of their workload in perspective. I didn’t want them to feel like they had to scramble at the last minute, so I gave them this check-in to fill out before we concluded our project time for the day, and I asked them to
complete a Presentation Plan taken from the *PBL in the elementary grades*: Step-by-step guidance, tools and tips for standards-focused K-5 projects (Hallerman & Larmer, 2007) over the weekend to help them keep their projects moving along appropriately.

Ultimately, even with these scaffolds in place, Mark’s presentation consisted of him reading his “whole page” of notes and gluing a picture of a buffalo to the back of the notebook so that his classmates “had something cool to look at while I talk”. In student-centered learning, the experience becomes what the students make of it. I had to accept that his experience was what he was making of it, and that I had done all I could to try and encourage him to do more.

Before the students prepared their final presentations, I had a presentation to share with them. I had arranged with a local Native American Heritage group to come and do a short presentation for the fifth-graders. The presentation was centered around the Leni Lenape tribe that is local to our area, but I had given the kids the objective of watching as presenters as well as learners. I wanted them to focus on how the presenters spoke, conducted themselves in front of the group, utilized their visual aids, and engaged their
audience. Though they weren’t going to be learning anything specific that they could add to their research, giving an appropriate presentation was part of the final project stage, *Communication*.

The assembly was very engaging for the students, and I think very motivating as well. They were able to get up and touch some Native American artifacts and interact with the presenters readily through questioning and participation. The students appeared very excited throughout the assembly. They were smiling, laughing, participating readily, and I wanted to catch their excitement first hand, so I asked them a few questions about what they experienced with a quick reflection. The students responded enthusiastically that they had, in fact, enjoyed themselves and learned something, but the majority did not feel it was helpful with their own research projects. I chalked this up to the fact that I had asked the wrong question. I should have asked if it helped them prepare to give a presentation. The importance of aligning questioning with objectives is so important. In retrospect, I did not ask them what I wanted to know. Some students did remark that the assembly made them feel “excited” and “good” about their presentations and others said that “they were excited already” so this assembly didn’t do much for them.

The students’ reflections for the last week of project preparation showed a lot less frustration than in previous weeks, and they were beginning to express excitement for the presentations.
The students would be making their presentations in two scenarios. The first would be in an open-house format, and the other would be formally in front of their individual homeroom. I had created a flyer to send home to parents inviting them to our “Native American Heritage Museum”, which would be an open-house for students to share their presentations/research with their families and also with other classes. Teachers from around the building signed up to bring their classes through the exhibit as well. The museum exhibit was set up the day before the in-class presentations to give the kids a chance to talk about their projects and show off their visual aids before presenting to the class. That way, if they had to make any last-minute adjustments, there was time, and they could work out any nerves beforehand.
These presentation days were scheduled with my principal well in advance, and the students were aware of these days as our final deadline from the very beginning. Expectations were clearly outlined, and they were reminded of them often: they had to have a visual aid of some sort and they had 3-5 minutes to present their information.

On the museum day, the students did not have to do their formal presentation. I let them know that they could practice if they wanted, but that this was a chance for them to just talk about their topics with each other and the visitors to our museum.

I was a ball of nervous energy the morning of the museum. I was worried that kids would be unprepared and that none of their parents would come in. We had been talking about this day for so long, and it was finally here! When the students began to arrive for school that day, I nearly burst with excitement. The projects they brought in really knocked my socks off! One student had created a totem pole that was as big as he was, and another had an authentic Lakota quilt and jewelry he had borrowed from a family member (Figure 8). Other students had beautiful trifold posters, dioram,as, or well-organized Power Points (Figure 9). Some students had more than one visual representation of their topic.
Thankfully our school has the laptop carts we do because we used about 20 laptops for presentations that day! As I circulated the museum, I saw kids smiling and laughing, sharing their own research stories, and what they had learned about their topics. Students were describing how they put their projects together and were genuinely enjoying themselves. We had
about 85 parents and family members attend our exhibit, and each one was as impressed as I was. Several parents stopped to thank me for doing something that they could be a part of. Even now, as I write about this months later, the excitement of that day makes me smile.

**Getting to Know What to Say**

Overall, 99% of the students were more than prepared for their presentations the next day. There were two in particular about whom I was worried. One was Mark, and the other was Santana. They both had very little to share during the museum exhibit, but I was hopeful that after seeing what they other students were preparing they would make some adjustments to what they had for the next day.

My hopes for these two were unfortunately not the reality. As I shared before, Mark’s presentation consisted of a single page of notes, which he read for the class. Santana’s had a little more to it. She had printed some pictures off Google, but she, too, had very little information to share. She was unable to answer any of her classmates’ (legitimate) questions about her topic but didn’t seem fazed by it at all. Mark had the same results at the end of his presentation. He was unable to answer any questions but was also generally unfazed. Their classmates on the other hand, hit it out of the park. I saw some minor adjustments made to projects from yesterday’s exhibit and each student appeared calm and prepared (though on the inside, I am sure they
were not as calm as they seemed). Most students hit the 3-5 minute mark without difficulty. Students were engaged in the presentations and questioned their classmates appropriately. Everybody wanted to go next! Unfortunately, after about an hour of presentations (about ¾ of the class) students did start to become less engaged and began to put their heads down. I am sure it was because we had been sitting for so long. We took a little break, and they seemed refreshed for the last few presentations.

Overall, the students were extremely well-prepared and knowledgeable about their topics. After the last of the presentations, the students completed the final round of surveys and reflections. There was a post-project reflection that gathered their thoughts on the overall process and another round of the MRQ. Once we were done with all of the formal surveys, I spent a few days talking with students one-on-one to clarify interpretations I had begun to make about their experiences. I am very excited to share this story, and I am looking forward to trying PBL with other topics in our curriculum.
Data Analysis

Data were collected in a variety of ways for this study. Each method of collection was designed to help expose the true feelings, confidences, capabilities, and motivations of the students in my classroom. When these sources were reviewed, I was able to see more clearly how the PBL experiences impacted my students.

While student surveys were administered at several points throughout the study, they completed one survey at both the beginning and end of the study. This survey, the *Motivation for Reading Questionnaire* (MRQ), gave me a picture of what role reading played in their personal lives. Students were asked to compare themselves to each question, and mark whether they agreed or disagreed with each statement. Table 1 illustrates the first set of questions which measured their motivations for reading.

Table 1

*Motivation for Reading Questionnaire I*

<table>
<thead>
<tr>
<th>Reading for...</th>
<th>Pre Survey</th>
<th>Post Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Reasons</td>
<td>51%</td>
<td>46%</td>
</tr>
<tr>
<td>Curiosity</td>
<td>68%</td>
<td>73%</td>
</tr>
<tr>
<td>Grades</td>
<td>89%</td>
<td>87%</td>
</tr>
<tr>
<td>Recognition</td>
<td>76%</td>
<td>81%</td>
</tr>
<tr>
<td>Competition</td>
<td>66%</td>
<td>56%</td>
</tr>
</tbody>
</table>
The most significant change in these results occurred in the category “Competition in Reading”. Before the implementation of PBL, 66% of the students reported that they liked being the best at reading and liked getting better grades than their friends. Post-PBL, fewer students (56%) felt the need for competition in reading. This change contrasts with an increase in a desire for recognition in reading, such as getting complimented on their reading by a teacher, family member, or friend. Before PBL 76% of the students were looking for recognition in their reading skills and abilities, and 81% were looking for it after.

Table 2

Motivation for Reading Questionnaire II

<table>
<thead>
<tr>
<th></th>
<th>Pre Survey Agree</th>
<th>Post Survey Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Efficacy</td>
<td>74%</td>
<td>71%</td>
</tr>
<tr>
<td>Reading Involvement</td>
<td>64%</td>
<td>68%</td>
</tr>
<tr>
<td>Classroom Compliance</td>
<td>68%</td>
<td>69%</td>
</tr>
<tr>
<td>Reading as a Challenge</td>
<td>79%</td>
<td>84%</td>
</tr>
<tr>
<td>Importance of Reading</td>
<td>95%</td>
<td>82%</td>
</tr>
<tr>
<td>Reading Work Avoidance</td>
<td>45%</td>
<td>39%</td>
</tr>
</tbody>
</table>

The second part of the MRQ asked questions in regards to how the students felt about their own reading abilities and how they applied themselves in the classroom (Table 2). The most notable change in this more personal assessment of ability occurred in the “Importance of Reading” category. Before PBL 95% of the students felt that it was important for them
to be good readers, but after only 82% felt the same way. Similarly, there was also a drop in the category of “Reading Efficacy”, though the 3% drop is barely significant. The 6% drop in “Reading Avoidance” shows that students were more willing to apply themselves when the going got tough which coincides with the increase in agreement with application of skills in the “Reading as a Challenge” category.

Table 3

Reading Activity Inventory

<table>
<thead>
<tr>
<th>Genre</th>
<th>Never</th>
<th>Monthly</th>
<th>Weekly</th>
<th>Daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mystery</td>
<td>21%</td>
<td>59%</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>Sports</td>
<td>47%</td>
<td>42%</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Science</td>
<td>42%</td>
<td>21%</td>
<td>37%</td>
<td>0%</td>
</tr>
<tr>
<td>Magazine</td>
<td>50%</td>
<td>22%</td>
<td>22%</td>
<td>6%</td>
</tr>
<tr>
<td>Other</td>
<td>31%</td>
<td>23%</td>
<td>15%</td>
<td>31%</td>
</tr>
</tbody>
</table>

The Reading Activity Inventory gave me a picture of what it was that my students were reading on their own time and how often. The science reading that was going on was happening in science class. 85% of the students responded that they did read science books, but they were not necessarily reading them by choice. Sports books and magazines both were being read by 75% of the class, and 65% of the class responded that they were reading books that fit into the “Other” category. These books included examples of young-adult fiction with themes of friendship, growth, humor,
and independence. While only 60% of the students responded as reading mystery books, they were the ones being read most frequently. Table 3 illustrates the reading frequency for each genre reported in this inventory.

The Reading Attitudes survey that I had created compiled work-style preferences from the students. The responses showed that when given the choice, 35% of the students preferred to read alone, 50% preferred to read with a partner, and 15% preferred to read with the whole class. Students responded similarly to the question of how they liked to complete projects. 15% liked working alone, 75% liked working with one partner, and 10% liked doing things with a larger group. Students also overwhelmingly preferred to complete projects in school (85%) with only 15% preferring to work at home.

The Multiple Intelligence Inventory exposed student strengths and weaknesses according to Gardner’s Multiple Intelligences. Student strengths overwhelmingly leaned toward the musical intelligence (45%). There were no students reporting strengths in the linguistic or naturalist intelligences, which is surprising at least for the linguistic because my students love to talk and rely on the written word for most of their intellectual communication. A few students reported equally in more than one category. One student was equal across the musical and bodily-kinesthetic intelligences, and another was equal across the musical and spatial intelligences. One student reported equal confidence in the spatial and bodily-kinesthetic intelligences and the final dual-
strength student was equal the inter- and intra-personal intelligences. The intelligences are listed in Table 4, including the data for these dual-strength students.

Table 4

*Multiple Intelligence Inventory*

<table>
<thead>
<tr>
<th># of Students</th>
<th>Logical-Math</th>
<th>Spatial</th>
<th>Bodily-Kinesthetic</th>
<th>Music</th>
<th>Inter-personal</th>
<th>Intra-personal</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>4</td>
<td>5</td>
<td>9</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Qualitative data were also collected in the form of reflective journal entries and prompts, interviews, rubrics, and observational notes. These data were kept in my field log and analyzed periodically for patterns of thought and behavior. As these patterns became evident, a system of codes was developed to record their occurrence. Some of the codes came directly from the literature reviewed earlier, other codes came out of my own reflective processes. These codes where then organized alongside other similar codes into bins (Figure 10). These bins eventually inspired the following theme statements and related findings.
Theme Statements

- The use of project-based learning (PBL) in the classroom increases student engagement and motivation for reading through the incorporation of student choice, collaboration, cooperation, and individual accountability.

- Teachers must prepare thoughtfully in order to support the research and design process. Carefully planned projects will infuse outside sources with classroom resources, utilize technology, be integrated across subjects, and address necessary standards while incorporating student preferences and
providing opportunities for students to make meaningful choices and contributions in the classroom.

- Collaboration with classmates and teacher throughout the research and design stages of PBL is necessary for students to progress confidently through the PBL process.

- Individual student attitudes will influence the efficacy of project-based learning. Positive influences include confidence, enthusiasm, self-discipline, and independence. Negative influences include frustration, distraction, confusion, and doubt.

- PBL increases independent problem-solving abilities in students while also achieving instructional goals.
Research Findings

- The use of project-based learning (PBL) in the classroom increases student engagement and motivation for reading through the incorporation of student choice, collaboration, and individual accountability.

Engaging teachers produce motivated learners and the most engaging teachers today are allowing students to make meaningful choices, connecting their curriculum to real-world circumstances, and encouraging originality (Frager & Fry, 2010; Pressley, 2002). When I approached the problem of trying to get my students to become more engaged and enthused in reading, I was hesitant to make all of these changes at once. I had, in the past, allowed students to make limited choices at calculated opportunities that I was confident would not result in a lapse of learning or curricular progress. I have been incorporating real-world scenarios into language arts for a few years, but on a limited basis. The one thing I had consistently struggled with was accountability. How was I going to get the students to make meaningful choices that they could justify? PBL provided a unique opportunity not only to allow students to make choices, but to become accountable for a sizable amount of learning in a short period of time.

The Reading Activity Inventory the students had completed at the beginning of the study told me that they did enjoy reading on their own time.
and the reading attitudes survey told me that they liked to work with others on projects in school. These surveys set me up to provide an experience in line with their desires as independent readers, but this process was going to be much more than the collaborative book reports they had been exposed to in the past.

Students are given the opportunity to make choices virtually every minute of each day. Just like adults, they choose when to speak and when to hold their tongues, they choose when to participate and when to remain an observer. When activities are perceived to be voluntary, they become more attractive. This likely leads students to work harder and achieve greater success because they are making choices that make sense to them and that they can connect to (Glasser, 1992). The first meaningful choice my students made was in choosing the topic for their study.

These choices were made after more than a week of traditional lessons on different Native American cultures. In order to be able to ask meaningful questions about a topic, the students must first have some sort of experience with the topic (Katz & Chard, 2000). My students were urged to make note of anything they found particularly interesting or had questions about that couldn’t be answered in the book. This resulted in a list of possible topics of study. The students chose three, then whittled it down to one topic. It was hard for me to step back from this process, but if I had impacted or limited
their choice in any way, I would have taken over control of the project and become the boss, rather than the leader (Glasser, 1992). When asked why they chose their particular topic, students overwhelmingly answered simply, “I thought it was interesting” or “I thought it was cool”. Though these answers were not particularly insightful or inspiring, students really attached themselves to their topics. One student even reflected, “I learned more from a project because we got to research what we wanted to.”

Choice of topic was not the only decision the students were making throughout this process. They had to decide how to ultimately present their findings and how to get from topic to presentation. This was where the collaboration came in.

Students did have regular access to computers to research on the internet, but they weren’t available every day. I had positioned the students’ desks into pods so that they were grouped with students of varying strengths according to the Multiple Intelligence Inventory. It was my hope that students within these groups would help each other over the minor hurdles of gathering information and organizing it into a meaningful presentation. What a pleasant surprise that that was exactly what happened! Students were sharing resources, teaming up with other students who had selected similar topics, discussing key search terms, and helping each other navigate the internet. Collaboration allows students to meet academic and social needs
simultaneously (Flaherty & Hackler, 2010). While there was some occasional off-task behavior that required redirecting, 72% of the students said that their group gave them at least a little help in completing their projects. Students also responded favorably when asked how these teams worked for them.

“We all stayed on task. We had fun learning from each other.”

“It was fun to have someone that you can share your ideas and thoughts with.”

“We got all of our work done, and if we needed help the rest of the group would help.”

In the end, each student was responsible for creating and presenting their own, independent product. On the day of the presentations, every single student had something to share. Though some were more prepared than others, each student stepped in front of the class with confidence and pride. Giving them complete control of their projects and presentations is a way of giving them ownership over the learning process and therefore making the learning more meaningful (Margolis & McCabe, 2004). In the post-survey and reflection, every student responded that they had enjoyed working on their projects. When asked if they thought they learned more or less from this process than they would have from a traditional lesson, only two responded that they felt they had learned less. One, because she likes “learning from a voice, not a computer” and the other because “there were not many facts”
on her topic. The first response is entirely valid, and quite insightful for a fifth-grader. I was surprised by her response and also by the following positive responses to PBL.

“I think I learned more from the project because I was working at my own pace.”

“It is easier to focus on one interesting thing instead of lots of littler [sic] things.”

“From a project you are free to learn whatever you want at your own pace.”

At the end of this study, what my observations and interpretations were telling me was that the students were enjoying themselves in reading class and they were learning at the same time. My suspicions were supported not only with the responses they provided in their written reflections, but also in their survey data. The MRQ administered at the beginning and end of the study to measure motivation for reading showed me that there was an increase in reading curiosity (5%) and an increase in reading challenge (5%). Similar to the study done by Guthrie, Wigfield, and VonSecker (2000), this suggests that the PBL process validated the students curiosity as a vehicle for reading and that they were willing to read more challenging text if it was a topic they were interested in. The MRQ also showed a decrease in reading
work avoidance (6%), which points to a willingness to do work when one has a personal interest in the topic and/or the product.

All of this points favorably to PBL as an approach to teaching that incorporates choice, collaboration, and ownership. Each of which are motivating factors for student engagement (Bartscher et al., 1995; Diffily, 2001; Filippatou & Kaldi, 2010; Hallerman & Larmer, 2011).

- **Teachers must prepare thoughtfully in order to support the research and design process.** *Carefully planned projects will merge outside sources with classroom resources, utilize technology, be integrated across subjects, and address necessary standards while incorporating student preferences and providing opportunities for students to make meaningful choices and contributions in the classroom.*

  Each stage of the PBL process required its own thoughtful preparations. In the first stage, observation and personalization, the students and I used a chapter of the social studies text and traditional lessons to familiarize ourselves with our broad topic, Native Americans. The preparation for this stage was minimal as I was able to rely on the organization of the teacher’s manual to guide the instruction of each lesson. We used pre-made
graphic organizers and worksheets to take notes and assess our understanding of the basic content.

Once we left the first stage, the preparation became a little more daunting. I had to organize the availability of technology for all of the researchers in fifth-grade, not just my class. Within this scope, I enlisted the help of our technology teacher and librarian. The technology teacher was gracious enough to spend some time working with the students on how to effectively and safely navigate the internet for research purposes. This was crucial to the success of the project as students these days, even as young as ten years old, rely heavily on the internet for research. It is easy to punch in key words to Google and get 1,000 hits on a topic, but it is not so easy to find relevant, reliable information that is on a reading level that fifth-graders can meaningfully comprehend. In conjunction, the school’s librarian spent time reviewing how to research in print sources and how to determine key words for searches. Without this guidance, students would have encountered even more roadblocks than they did. On the first day of research, many students were discouraged by what they found and took it upon themselves to abandon their topics and choose topics that were more “user friendly”. It is my belief that without the research preparation provided by these cooperating teachers the rate of abandonment would have been even higher.
As the research began, I also, with the help of the librarian, gathered every non-fiction book on Native Americans I could get my hands on to create a classroom library for easy-access. With the help of the other fifth-grade teachers, we also rounded up three sets of encyclopedias and a set of retired social studies texts that the students could consult for information. This library became an essential resource within the classroom. Students were frequently sharing books for both text and visual information.

Another aspect that had to be planned in advance was the direction and assessment of the projects. While I earnestly wanted to allow the students to create these projects independently, I knew that some direction was going to be necessary in order to ensure meaningful learning was taking place. I needed to devise a teaching plan that encouraged self-motivation (Bomia et al., 1997). For this aspect of planning, I relied on the text written by Hallerman and Larmer (2011) *PBL in the elementary grades: Step-by-step guidance, tools, and tips for standards-focused projects*. From this text, I was able to implement communication, presentation plans, and a rubric that guided the direction of the projects without taking away any of the ownership.

The communication came in the form of a letter written to parents that asked for their support in the projects their students were working on in school. It requested that they engage their students in conversations about
their topics and provide expertise or resources when possible. On the back of the letter, I attached the rubric that was being used to guide the creation of their projects and then also assess their completion. This was done in order to facilitate dialogue about the projects both at home and at school. If the projects were going to be completed in a timely manner, which detracts many teachers from even attempting student-centered learning (Pederson & Liu, 2003), the students were going to need support at home. Lutz, Guthrie, and Davis (2006) would agree that the more connections a student can make to what (s)he is learning, the greater his or her comprehension and retention rates will be.

I also utilized a presentation plan from Hallerman & Larmer to act as a scaffold for the creation of the actual presentation. Very few of the students had actually done a formal presentation in class before, so we had to spend some time discussing what an effective presentation would look like and how to put it together. These plans helped them put the audience and organization of their presentations into perspective well before they had to stand in front of the class.

After the failure to achieve the objective in our mini-projects, I used the Pennsylvania Department of Education’s standards for history as a visual reminder of what it was we were really trying to accomplish with our projects. While the projects were being completed in reading class and the relevant
reading standards were equally important, I felt that posting the history standards in the classroom helped maintain the authenticity of the projects. Though this whole project was centered around reading, the true goal was to have engaging, meaningful experiences in the classroom that would lead to greater motivation in reading overall.

In an effort to boost experience with the subject-matter and exposure to outside resources, the arrangement of an outside presentation was also made before the students finished their projects. This presentation was meant to increase enthusiasm for the projects as well as provide them with an example of an oral presentation. The students responded favorably in their reflections on the assembly; all of the students said that they enjoyed the program, and 58% said that it was helpful with their research project. One student remarked that he enjoyed it because he “...got to feel, see, and hear neat things.” Incorporating these outside experiences provides understanding of the world beyond the classroom (Katz & Chard, 2000).

The final stage of PBL, communication, also required careful planning. Hallerman & Larmer (2011) suggest that PBL prepares students for “21st century work” in that they are communicating with others using a variety of media. I wanted the students to be able to share their projects informally before their formal presentations so I planned a “museum” day in which students from other classes, parents, and staff could preview the students’
projects. This museum day was held in the cafeteria and was a great success. I wanted the students to have a chance to share their research informally in order to work out any kinks before the final presentations that were to be graded.

The preparation for this museum was nominal, I only had to ask my principal for permission, acquire enough laptops for the Power Point presentations, and let the custodian know what we were going to be doing. Though the preparation was minimal, the effect was monumental. The students not only enjoyed seeing each others’ projects, they were able to confidently share their research without the pressure of assessment. During this time, students were smiling, laughing, sharing their own research stories and describing how they put their projects together. I feel that this museum day directly impacted the success of the following days’ presentations.

Finally, the students presented their findings in a three-to-five minute oral presentation that utilized a visual representation of their research. Students made artifacts, found artifacts, created posters or trifolds, designed Power Point and Keynote presentations, and/or constructed dioramas. These presentations took place in our classroom during regular instructional time. They were assessed using the rubric shared earlier in the research process and then were asked to complete a post-project survey and reflection to share any final thoughts about their work.
Throughout the projects, as the students needs unfolded, I had to be ready to guide them toward successful research or design. When a student was struggling with reading strategies, I had to be there to help them hone in on the skills they already possessed and guide them to apply them as necessary. Since these projects took the place of our regular classroom reading, my use of an observation checklist was an important tool to help me monitor student engagement and application of skills at a glance.

I do not feel that the implementation of project-based learning in my classroom took more time or effort to prepare than regular instruction, but I had to be more flexible in the preparation. As the saying goes, “The best laid plans of mice and men often go awry”, and in PBL, with 20 students working on 20 different projects with technology as a main component, the best days were those where I just abandoned my plans and let the students’ needs dictate how our project-time was best utilized.

• Collaboration with classmates and teacher throughout the research and design stages of PBL is necessary for students to progress confidently through the PBL process.

In order for teachers to truly be in tune with what is going on in their classroom, they must engage in meaningful dialogue with their students (Hsu,
2009). This dialogue began at the beginning of the study when I met with each student to discuss their initial topics. These conversations allowed me, as the teacher, to help prepare the classroom for research and to know how to best to support their inquiry. In student-centered environments, teachers must be aware of individual needs in order to create a balance between guidance and discovery (Calkins, 2001). Short, informal conferences and written reflections allowed me to check in on each student several times each week so that I was able to insure progress was being made by everyone. The students also understood the importance of the conferences and reflections.

“"Yes (they were helpful), because you could tell if we needed help or not.”

“"Yes, because I could put more thought into my presentation.”

“"I do (think they were helpful) because if we had trouble with something we can tell you.”

“"Yes because it reminded me that I need progress on my project.”

I believe that the collaboration and cooperation that occurred between the students themselves was even more valuable to their experience than my guidance was. On a typical day in the classroom during the study, students were seen leaning against tables chatting about interesting facts. They were hunched over books feverishly taking notes by hand, they were sharing computers and hopping back and forth from printer to desk. They
were engaged in these projects. No student was able to just sit idly by. They were influenced by the progress they saw their peers making and were inspired to do more themselves. Partnerships like these increase opportunities for feedback from others on their level and boosts the confidence of those involved (Hsu, 2009). The students also remarked positively about their collaborative experiences.

“We were working hard and having fun at the same time. Being in a group is fun. It’s easier because you get to talk to somebody about what you don’t understand. Maybe you can explain to each other.”

“We each have different opinions and maybe have different answers and what we can do, we can figure it out.”

“Something I like about PBL is that you get to work with other people.”

The MRQ showed a decrease in competition in reading (65% to 55%) which could be due to the increase in classroom collaboration. Students were working with each other instead of alongside each other. Their confidence in reading was not as evident, the MRQ showed a small decrease in the sense of reading efficacy (3%) and a large increase in the importance of reading (13%). After the study, these students did not feel it was as important to them to be a good reader, which I consider to be a sign that some of the pressure in the classroom was alleviated through this process.
In my high-performing school, teachers, parents, and students often equate effort with grades and with this project, the students were really able to see the fruits of their efforts ripen into something so much more tangible than a grade. They were enjoying themselves and their subject matter. Their efficacy check-ins showed positive reactions to the PBL process. 75% of the students felt like they were learning something even though I wasn’t “teaching” them. I think now that it was no longer important for them to be a good reader; it was more important to be curious, thoughtful, and creative. I do not see the decrease in the importance of reading as a negative aspect of this study. I see it as a positive change in the perspective of my students. Several remarked in interviews and post-study reflections that they were more confident in the classroom as a result of these projects.

“Confidence means that you believe that you can do it and you know that you did well. (I was confident) because I knew what I was doing and what websites I should look on for my facts.”

“I liked my speech so much that I wanted to read it twice.”

“I feel like now if I have to present in front of a class again I will be more confident about doing it.”

On their mid-study check-ins, 90% of the students reported that they liked PBL and the MRQ also showed an increase in reading curiosity (5%) and reading involvement (4%). The confidence, curiosity, and engagement are
what will lead these young readers to become lifelong readers, which is my true goal as a teacher of reading (Baker, Dreher, & Guthrie, 2000; Calkins, 2001; Pressley, 2002).

- Individual student attitudes will influence the efficacy of project-based learning. Positive influences include confidence, enthusiasm, self-discipline, and independence. Negative influences include frustration, distraction, confusion, and doubt.

At the onset of this study, the students in my classroom were grouped according to their perceived reading ability. These groups, as described in the story, were not more or less successful as their reading ability increased or decreased, but were more or less successful based on the personalities of the individuals in the groups. The group that worked most closely and efficiently was the group considered to be on-level. The lower level group’s conversations were punctuated with a plethora of “stop-it”, inappropriate laughter, “I’m sorry” and “Come on”. The higher level group’s conversation was nonexistent as the girls silently worked on individually desired contributions and the boys had sword fights with markers. This led me to believe that it’s not just the ability of a group that will contribute to or detract from its success, its the personalities of the group members as well.
For the majority of the study, when the students were working on their independent projects, I had them grouped into pods based on their responses to a multiple intelligence inventory. This was done in the hopes of alleviating some of the earlier frustrations exhibited by the groups that were ability based. Their frustrations with group work were evident in the reflections they completed at the end of the mini-projects.

“*The boys really didn’t do any work.*”

“I think that our group needed to stop fooling around.”

“I think that Jack made too many jokes.”

“I felt like I was doing all the hard work.”

Though some floundering is to be expected in a student-centered classroom, there are some benefits to the negative use of time because learning from mistakes is at the heart of the inquiry process and leads to increases in problem-solving abilities and self-efficacy (Pederson & Liu, 2003).

The intelligence-based groups appeared to have provided a stronger support base for the independent work as the level of frustration with group members was greatly diminished as the projects unfolded. This could be in part due to the nature of the projects. The first project consisted of four students creating one poster on the same topic, and the independent projects had each student studying his or her own question and creating his or her own product. In the mini-projects, the students also were not working on a
topic or product of their choosing. This could have added to the lack of focus and engagement as the most engaging classrooms involve choice in learning and how to display that knowledge (Davis, 2010).

Even with the new mix of personalities for the independent project groups (tribes), some frustration was still evident. One student, Theodore explained his doubt in an interview.

“When I was working I got yelled at by having that idea from another kid and he said it was a bad idea. I didn’t know what to do then. I was confused if we were going to use that idea or another idea and didn’t know if the project would work out.”

A few weeks later, he had changed his attitude about his project.

“I was really excited about presenting my project because I was more confident about the project than I was before and I was feeling better than I was a few weeks ago.”

In his post-study reflection, he had positive remarks about his collaborative experiences.

“I learned more from a project because we got to research what we wanted to. I liked that we had tribe members for help. I got a lot of help from them. We got a lot of work done. If we needed help the rest of the group would help.”
Theodore’s sentiments were echoed throughout the post-study reflections. 100% of the students responded that they enjoyed working on their projects and 72% of the students responded that they had gotten help from their groups. Students used their groups to practice their presentations, try out formatting ideas, tech support, and proofreading and editing. They would share what they were learning and ask their partners if they had any more questions that they thought they should research to make their project more interesting. Students shared resources with their groups and other students researching similar topics and were often seen huddled two or three over the same website or print source. I witnessed students printing things out for each other at home and bringing them in for others they knew would benefit from the information and offering moral support when they were feeling like they didn’t know what to do.

The first round of projects had more negative indicators than the independent projects did. It is my belief that the motivating factors of choice and ownership directly impacted the attitudes my students had towards their individual projects. The aim of PBL is to improve the whole mind, academically, socially, and emotionally (Katz & Chard, 2000). The attitudes of students will come in to play in a student-centered classroom, but ultimately, the mistakes and frustrations they experience in these projects can be turned into meaningful learning experiences (Pederson & Liu, 2003).
• PBL increases independent problem-solving abilities in students while also achieving instructional goals.

Project-based learning provides a practical way to teach/learn skills and content that are considered 21st Century. Projects require students to gather, analyze, and utilize information from a variety of sources, work as a member of a team, manage tasks, communicate using a range of media, solve their own problems and think critically about the process (Hallerman & Larmer, 2011). The application of these skills occurs while they are achieving instructional goals and meeting state standards.

Paolo Freire (1970) called for a shift from telling students what they needed to know to showing students how to find it themselves. Directly in line with PBL, Freire states,

“True generosity lies in striving so that these hands – whether of individuals or entire peoples – need be extended less and less in supplication, so that more and more they become human hands which work and, working, transform the world.” (p. 45)

His statement of “true generosity” reminds me of the old proverb about teaching a man to fish. In Freire’s description of false generosity, one would be giving the oppressed the fish rather than teaching them to fish. If I had
succumbed to the temptation of simply answering all of my students’ questions rather than encouraging them to find the answers themselves, I would have been giving them the fish, or showering them with false generosity. By placing them into a project-based learning environment, I helped them learn to fish. My students became more independent because I allowed them to be independent.

For their projects, the students explored their own lines of inquiry. They followed the paths of their own curiosities and presented their findings to their community. We (my students and I) moved furniture, both literally and figuratively, so that we could look at learning in a new way. Rather than telling them what they needed to know, I encouraged them to use what they know to stretch themselves beyond the traditional ‘read and recite’ or ‘read and complete’ activities that are common in intermediate-grade reading classes. Though some students initially would have preferred that I tell them what they needed to know, in the end, 100% of the students responded that they had enjoyed PBL and 75% said they felt like they had learned something even though I wasn’t “teaching” them.

Students were placed into small groups based on a multiple intelligence inventory so that they have the support of classmates as they embarked on this learning adventure. The classroom was set so that my desk
was out of the way and their desks are arranged as the center of activity with plenty of space to move about the room.

Not only were we physically changing the structure of our classroom, but we were also changing the structure of our class time. Instead of reading a selection together and discussing the various reading strategies we employed, the students were reading materials they gathered in relevance to their research. Instead of standing in front of the classroom “leading the parade” I checked in with individuals and offered guidance that their support groups could not. For the remainder of the study, my classroom favored the teacher-student/students-teachers model that Freire suggests causes teachers and students both to “become jointly responsible for a process in which all grow” (p. 80).

In their post-project surveys and interviews, students remarked positively about the growth they felt they had made during this process. One student, Jack, who had been particularly off-task during the small-group project made what I feel is remarkable progress as a learner throughout this process.

“I was worried about not finishing it. But after, I feel, like, so much better. Like I did really good and it was so much easier after the presentation. I learned a lot from the other presentations and it was fun
finding new stuff about Indians (Native Americans). Learning is fun when you are interested about that kind of thing.”

Jack’s sentiments were mirrored in another student’s response as well.

“I like PBL because in regular learning you don’t really have a choice, you just have to learn a regular lesson and if you have a lesson you might be learning about something that’s not very interesting.”

Not only did these students learn to work independently with confidence, they also learned how to reflect upon their work and assess their own progress and capability. Some students became aware of strengths they did not know they possessed (i.e. technological expertise, organizational skills, creativity) and others identified weaknesses that could be supported by the strengths of their peers. A common question coming out of my mouth was “What progress did you make today?”. In the beginning students would eagerly respond “I found five facts” or “I printed two pictures” but as we moved through the stages of PBL, their responses became more thoughtful.

“I made lots of improvements in my Keynote and got another slide done.”

“All I have to do is finish my index cards for my presentation and glue my work to the poster board.”

“I’m done with my slides. I just have to edit one little thing. I’m really excited about what’s going to happen when I present it!”
“I’m typing now. I’m putting in my best facts. I feel great!”

“Today I printed pictures out and did a little research, too.”

“I was writing out my project on the computer and thinking of things I never thought about writing!”

“I started typing but I would like to make more progress. I am starting to get nervous.”

All of this energy, positive and nervous translated into a meaningful experience for these students because they all produced a product and successfully presented it to their class. Instead of reading a chapter from a textbook and giving them a test, they were presented with a challenge and overcame it the best ways they knew how, learning and growing in the process.
Next Steps

As this study comes to a close and I ask myself if I answered my research question, I feel I can confidently say, “Yes!” I have reported the observed behaviors and experiences that my students and I encountered through the duration of our PBL unit. I pored over current research and labored over my data collection. I thoughtfully considered perspectives and allowed my students to assume a leadership role in their own educative experience. The implementation of PBL takes patience and preparation. The students will want to ask a million questions and it will be tempting to answer them. The true test of this study was in the release of control. I had to consciously step back each day and say, “I’m not going to answer that for them because they can answer it for themselves with a little ingenuity and elbow grease.”

That’s not to say I took a completely “hands-off” approach. I most certainly helped students through the problem-solving process, but the most gratifying instances in this study were those where the students took it upon themselves to answer their own questions and solve their own problems. I believe that no matter what the content of the projects might have been, it was in those moments that true learning took place. My students may not forever remember the uses of buffalo hide by the Iroquois tribe (though research suggests that they will), but they will remember how to work
collaboratively with their peers to accomplish a goal and solve problems diplomatically and independently. In project-based learning I really believe that the social and academic learning go hand in hand and lead to the development of the whole person. Paolo Freire called for a shift in education more than 40 years ago, Katz and Chard did it again in the early 2000s, and I'm doing it now. We need to be providing experiences in the classroom that help foster the development of conscientious, capable, and curious students, not just proficient test-takers.

An interesting benefit to the research process, I feel, is the data that were gathered regarding learning styles and personal preferences in the classroom. In the past, I had not considered giving surveys or questionnaires to get to know my students better. Sure, we'd have conversations about what it was that they liked or didn't like to do or to read in the classroom, but I had never really gotten concrete feedback from my students. I think that, for example, the Multiple Intelligence Inventory, is a really useful tool in planning a student-centered classroom. The inventory allowed me to see strengths and weaknesses in students that might not be otherwise apparent. In the future, I would use a more condensed version with vocabulary that is more in line with my grade level. The inventory used in this study was rather lengthy and used a lot of higher-level vocabulary that many of my students struggled with.
I fully intend to make PBL a part of my regular classroom instruction. I have already planned another project experience for my students this year, and we are working our way through the research stages as I write this now. The students are much more confident this time around and are seeking me out less and less. They are enthusiastic and engaged, cooperative, and creative. I hope to implement a few more projects next year as I become even more comfortable guiding my students through the inquiry process.
References


Diffily, Deborah. (2001). Real-world reading and writing through project-based learning. (ED 453 520)


Appendix A

MORAVIAN COLLEGE

November 17, 2011

Rachel Sherman
707 Wood Street
Bethlehem, PA 18018

HSIRB proposal by Rachel Sherman for Richard Grove

Dear Rachel Sherman:

The Moravian College Human Subjects Internal Review Board has accepted your proposal: “Project-Based Learning in the Elementary Classroom.” Given the materials submitted, your proposal received an expedited review. A copy of your proposal will remain with the HSIRB Chair.

Please note that if you intend on venturing into other topics than the ones indicated in your proposal, you must inform the HSIRB about what those topics will be.

Should any other aspect of your research change or extend past one year of the date of this letter, you must file those changes or extensions with the HSIRB before implementation.

This letter has been sent to you through U.S. Mail and e-mail. Please do not hesitate to contact me by telephone (610-861-1379) or through e-mail (browerg@moravian.edu) should you have any questions about the committee’s requests.

George D. Brower
Chair, Human Subjects Internal Review Board
Moravian College
610-861-1379
Appendix B

Informed Consent Form
Authorization for Research Participation

Dear [Name],

As you know, I am currently working towards completion of a Master's Degree in Curriculum and Instruction at Moravian College. As a part of the M.Ed. program at Moravian, degree candidates are required to conduct a systematic study of their own teaching practice. Consequently, I would like to conduct an eight-week research study extending from September 19th to November 19th that focuses on project-based learning in Reading and Language Arts. Research would commence the week of September 19th, and conclude on or before November 19th, 2011.

The purpose of this study would be to foster the self-monitoring techniques used by effective readers. As part of our regular language arts curriculum, students will be guided through a process designed to help them decipher, comprehend, and communicate new words, texts, and ideas through the research and development of inquiry-style projects. Students will become a part of the planning, implementation, and assessment processes of classroom instruction. By increasing ownership in the classroom, I hope to foster not only academic output, but also motivation towards reading for authentic purposes.

I am asking for your consent to gather and use data relevant to my students' involvement in the day-to-day activities planned for the classroom. Participation in the research study would be entirely voluntary and non-participation would not affect individual instruction or grades in any way. Furthermore, students may withdraw from the study at any time without penalty. Withdrawal or non-participation in the action research study would not exclude children from classroom activities. I would, however, use only the data from those participating in the study. All student names will be kept confidential. Only my name and the name of my professors will appear on the study. Informed consent forms will be sent home to each child in my class, signed and returned with the parents' decisions clearly marked. These forms will be filed in a secure area, to be determined upon your consent.

I thank you for your consideration and potential participation in this study. I have come to believe that authentic experiences in education have the most impact. By conducting this study, I hope to create confident, lifelong readers.

Sincerely,

[Signature]

Rachel Sherman

Faculty Advisor:
Dr. Joseph Shosh
Moravian College
lshosh@moravian.edu

I declare that I am the administrative principal at Asa Foker Elementary School. Please initial the appropriate box:

- [ ] I am willing to have Mrs. Sherman conduct this action research study in her classroom.
- [ ] I am not willing to have Mrs. Sherman conduct action research at this time.

114
Appendix C

Informed Consent Form
Authorization for Research Participation

Dear Parents,

I am currently working towards completion of a Master's Degree in Curriculum and Instruction at Moravian College here in Bethlehem. For many of the classes I have taken thus far, I have used the research of others to guide my practices and influence decisions made in my classroom. Now the time has come for me to become the researcher. As a part of the M.Ed. program at Moravian, degree candidates are required to conduct a systematic study of their own teaching practice. Consequently, I will be conducting a research study from September through November on the implementation of project-based learning in Language Arts.

The purpose of this study is to foster the self-monitoring techniques used by effective readers. As part of our regular language arts curriculum, students will be guided through a process designed to help them decipher, comprehend, and communicate new words, texts, and ideas. Our principal is aware of this study and has granted his permission to conduct research in my classroom.

I am asking for your consent to use data gathered relevant to your child's involvement in the day-to-day activities planned for the classroom. Participation in the research study is entirely voluntary and non-participation will not affect your child's instruction or grade in any way. Furthermore, students may withdraw from the study at any time without penalty. You may withdraw your child's participation by contacting me at the school. Withdrawal or non-participation in the action research study does not exclude your child from classroom activities. I will, however, only use data from participants in my study. All student names will be kept confidential. Only my name and the name of my professor will appear on the study. Should you have any questions regarding this study, please feel free to contact me at the school.

Please initial the appropriate box below and return the bottom portion of this page at your earliest convenience. I thank you for your consideration and potential participation in this study. It is my belief that authentic experiences in education have the most impact. By conducting this study, I hope to create confident, lifelong learners.

Sincerely,

Rachel Sherman
Grade 3

Faculty Advisor:
Dr. Joseph Shosh
Moravian College
jshosh@moravian.edu

I declare that I am the child's legal guardian and that I have received a copy of, read, and understand this consent form. Please initial the appropriate box:

☐ I am willing to have my child participate in Mrs. Sherman's action research study.

☐ I am not willing to have my child participate in Mrs. Sherman's action research study.

Parent/Guardian Signature: ____________________________________________

Child's Name (Please Print): ____________________________________________

Date: __________________________

115
## Presentation Rubric
(for secondary and upper elementary grades)

<table>
<thead>
<tr>
<th>Eye Contact &amp; Physical Presence</th>
<th>Below Standard</th>
<th>Approaching Standard</th>
<th>At Standard</th>
<th>Above Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>- does not look at audience; reads notes or slides</td>
<td>- holds things in hands nervously or keeps hands in pockets</td>
<td>- makes some eye contact, or scans the room quickly, but reads notes or slides most of the time</td>
<td>- keeps eye contact with audience most of the time; only reads notes or slides sometimes</td>
<td>In addition to At Standard criteria:</td>
</tr>
<tr>
<td>- posture does not show confidence (slouches, slouches)</td>
<td>- clothes are appropriate for the occasion</td>
<td></td>
<td></td>
<td>- keeps eye contact all the time, slowly scanning all of the audience; does not read notes or slides</td>
</tr>
<tr>
<td>Speaking</td>
<td>- reads too fast or slow too softly to be heard</td>
<td>- reads mostly in a monotone</td>
<td>- speaks clearly, not too fast or slow; speaks loudly enough for everyone to hear; changes tone to maintain interest</td>
<td>In addition to At Standard criteria:</td>
</tr>
<tr>
<td>- pronunciation and/or word order incorrect</td>
<td>- speaks in a style that is not appropriate for the occasion</td>
<td>- occasionally uses filler words</td>
<td>- pronounces words correctly</td>
<td>- adds variety to speaking style (lower or higher volume, change of pace, use of character voices)</td>
</tr>
<tr>
<td>- does not maintain eye contact</td>
<td>- speaks loudly enough for some of the audience to hear, but may speak in a monotone</td>
<td>- occasionally uses filler words</td>
<td>- pronounces a few words incorrectly</td>
<td>- uses pause for dramatic effect or to let ideas sink in</td>
</tr>
<tr>
<td>Organization</td>
<td>- does not meet requirements for what should be included in the presentation</td>
<td>- reads too fast or slow; reads loudly enough for everyone to hear; changes tone to maintain interest</td>
<td>- pronounces words correctly</td>
<td>In addition to At Standard criteria:</td>
</tr>
<tr>
<td>- selects too much or too little information or the wrong kind of information</td>
<td>- reads material in a monotone</td>
<td>- speaks clearly, not too fast or slow</td>
<td>- gives a memorable introduction and conclusion</td>
<td>- adds variety to speaking style (lower or higher volume, change of pace, use of character voices)</td>
</tr>
<tr>
<td>- ideas mixed up</td>
<td>- gives a clear and interesting introduction and conclusion</td>
<td>- pronounces a few words incorrectly</td>
<td>- states main ideas and moves from one idea to the next clearly, in an order that makes sense</td>
<td>- uses pause for dramatic effect or to let ideas sink in</td>
</tr>
<tr>
<td>Audio/Visual Aids</td>
<td>- does not use audio (pictures, drawings, objects, posters, maps, recordings, slides, other electronic media, etc.)</td>
<td>- does not use audio (pictures, drawings, objects, posters, maps, recordings, slides, other electronic media, etc.)</td>
<td>- states main ideas and moves from one idea to the next clearly, in an order that makes sense</td>
<td>In addition to At Standard criteria:</td>
</tr>
<tr>
<td>Response to Audience Questions</td>
<td>- does not address the audience's questions; says little or goes off the topic</td>
<td>- mishears some of the audience's questions, but does not clarify or complete</td>
<td>- answers audience's questions clearly and completely</td>
<td>- adds to the presentation</td>
</tr>
<tr>
<td>- may try to answer a challenging question by taking it</td>
<td></td>
<td>- asks the audience a question, but does not clearly and completely</td>
<td>- answers audience's questions clearly and completely</td>
<td>- adds especially creative and/or powerful</td>
</tr>
<tr>
<td>- asks a hand to read or hear, or are nervous (writing or speaking is not clear or sound is not clear)</td>
<td></td>
<td>- asks an audience's question, but does not clearly and completely</td>
<td>- answers audience's questions clearly and completely</td>
<td>- shows skill in creating aids and using technology</td>
</tr>
<tr>
<td>- asks not ready to use and are not smoothly brought into the presentation</td>
<td></td>
<td>- becomes a distraction for the audience</td>
<td>- smoothly handles problems with aids and technological glitches, if they occur</td>
<td>- smoothly handles questions that are unclear or off the topic, distracting, or challenging</td>
</tr>
</tbody>
</table>
Appendix E

The Motivation for Reading
Questionnaire
Guthrie, McGough, & Wigfield

First name: ___________________ Grade: _______ Date: __________

We are interested in your reading. The sentences in this questionnaire describe how some students feel about reading. Read each sentence and decide whether it describes a person who is like you or different from you. There are no right or wrong answers. We only want to know how you feel about reading. For many of the statements, you should think about the kinds of things you read in your class.

Here are two samples to try before we start on the ones about reading:
If the statement is very different from you, circle a 1.
If the statement is a little different from you, circle a 2.
If the statement is a little like you, circle a 3.
If the statement is a lot like you, circle a 4.

<table>
<thead>
<tr>
<th>I like ice cream.</th>
<th>Very Different From Me</th>
<th>A Little Different From Me</th>
<th>A Little Like Me</th>
<th>A Lot Like Me</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>I like spinach.</th>
<th>Very Different From Me</th>
<th>A Little Different From Me</th>
<th>A Little Like Me</th>
<th>A Lot Like Me</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
# The Motivation for Reading Questionnaire

**Guthrie, McGough, & Wigfield**

<table>
<thead>
<tr>
<th>Motivation for Reading</th>
<th>Very Different From Me</th>
<th>A Little Different From Me</th>
<th>A Little Like Me</th>
<th>A Lot Like Me</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I visit the library often with my family.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. I like hard, challenging books.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. I know that I will do well in reading this year.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. I do as little schoolwork as possible in reading.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. If the teacher discusses something interesting, I might read more about it.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. I read because I have to.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. I like it when the questions in books make me think.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. I read about my hobbies to learn more about them.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9. I am a good reader.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10. I read stories about fantasy and make-believe.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11. I often read to my brother, sister, friend, or relative.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12. I like being the only one who knows an answer in something we read.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13. I read to learn new information about topics that interest me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14. My friends sometimes tell me I am a good reader.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15. I learn more from reading than most students in the class.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>16. I like to read about new things.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17. I like hearing the teacher say I read well.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>18. I like being the best at reading.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>19. I look forward to finding out my reading grade.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>20. I sometimes read to my mom or dad.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
## The Motivation for Reading Questionnaire

**Guthrie, McGough, & Wigfield**

<table>
<thead>
<tr>
<th></th>
<th>Very Different From Me</th>
<th>A Little Different From Me</th>
<th>A Little Like Me</th>
<th>A Lot Like Me</th>
</tr>
</thead>
<tbody>
<tr>
<td>21. My friends and I like to trade things to read.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>22. It is important for me to see my name on a list of good readers.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>23. I don't like reading something when the words are too difficult.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>24. I make pictures in my mind when I read.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>25. I always do my reading work exactly as the teacher wants it.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>26. I usually learn difficult things by reading.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>27. I don't like vocabulary questions.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>28. Complicated stories are no fun to read.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>29. I am happy when someone recognizes my reading.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>30. I feel like I make friends with people in good books.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>31. My mother or father often tells me what a good job I am doing in reading.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>32. Finishing every reading assignment is very important to me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>33. I like mysteries.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>34. I talk to my friends about what I am reading.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>35. If I am reading about an interesting topic, I sometimes lose track of time.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>36. I like to get compliments for my reading.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>37. Grades are a good way to see how well you are doing in reading.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>38. I like to help my friends with their schoolwork in reading.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>39. I read to improve my grades.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>40. My mother or father asks me about my reading grade.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
### The Motivation for Reading Questionnaire

**Guthrie, McGough, & Wigfield**

<table>
<thead>
<tr>
<th></th>
<th>Very Different From Me</th>
<th>A Little Different From Me</th>
<th>A Little Like Me</th>
<th>A Lot Like Me</th>
</tr>
</thead>
<tbody>
<tr>
<td>41.</td>
<td>I enjoy a long, involved story or fiction book.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>42.</td>
<td>I like to tell my family about what I am reading.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>43.</td>
<td>I try to get more answers right than my friends.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>44.</td>
<td>If the project is interesting, I can read difficult material.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>45.</td>
<td>I enjoy reading books about people in different countries.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>46.</td>
<td>I read a lot of adventure stories.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>47.</td>
<td>I always try to finish my reading on time.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>48.</td>
<td>If a book is interesting, I don't care how hard it is to read.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>49.</td>
<td>I like to finish my reading before other students.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>50.</td>
<td>In comparison to my other school subjects, I am best at reading.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>51.</td>
<td>I am willing to work hard to read better than my friends.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>52.</td>
<td>I don't like it when there are too many people in the story.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>53.</td>
<td>It is very important to me to be a good reader.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>54.</td>
<td>In comparison to other activities I do, it is very important to me to be a good reader.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
Appendix F

Name: _______________________________ Date: __________________

READING ACTIVITY INVENTORY

Directions: We are interested in knowing about your reading activities and in finding out how much you read different kinds of books. You will circle the answers to some of the questions, and write the answers to the others.

Practice Question

1. Do you have a first name? (Circle only one)
   
   No............... 1
   
   Yes.............. 2
   
   If yes, write your first name.

   First name: ____________________________________________

2. How often do you tell another person your first name? (Circle only one)
   
   Almost never............. 1
   
   About once a month..... 2
   
   About once a week...... 3
   
   Almost every day........ 4
Questions About Reading For
Your Own Enjoyment

Directions: In this section, think about books that you read for your own interest that are not assigned for school or homework.

1. Did you read a story book like a mystery or an adventure last week for your own interest? (Circle only one)
   
   No. ............ 1
   Yes. ............ 2

   If yes, write in the title, author, or the specific topic that you read about.
   
   Book title: ____________________________
   Author: ____________________________
   Topic: ____________________________

2. How often do you read a story book like a mystery or an adventure for your own interest? (Circle only one)
   
   Almost never. ............ 1
   About once a month. ......... 2
   About once a week. ......... 3
   Almost every day. ............ 4

3. Did you read a sports book last week for your own interest? (Circle only one)
   
   No. ............ 1
   Yes. ............ 2

   If yes, write in the title, author, or the specific topic that you read about.
   
   Book title: ____________________________
   Author: ____________________________
   Topic: ____________________________
4. How often do you read sports books for your own interest? (Circle only one.)

   Almost never.............. 1
   About once a month....... 2
   About once a week........ 3
   Almost every day.......... 4

5. Did you read a science book last week for your own interest? (Circle only one.)

   No.................. 1
   Yes............... 2

   If yes, write in the title, author, or the specific topic that you read about.

   Book title: __________________________________________
   Author: ____________________________________________
   Topic: ____________________________________________

6. How often do you read a science book for your own interest? (Circle only one.)

   Almost never.............. 1
   About once a month....... 2
   About once a week........ 3
   Almost every day.......... 4

7. Did you read a comic book or magazine last week for your own interest (Circle only one.)

   No.............. 1
   Yes............ 2
If yes, write in the title, author, or the specific topic that you read about.

Book title: 

Author: 

Topic: 

8. How often do you read comic books and magazines for your own interest? (Circle only one)

   Almost never........... 1
   About once a month..... 2
   About once a week...... 3
   Almost every day........ 4

9. Did you read any other kind of book last week for your own interest that was not mentioned? (Circle only one)

   No............. 1
   Yes.............. 2

   If yes, write in the title, author, or the specific topic that you read about.

   Book title: 

   Author: 

   Topic: 

10. How often do you read this kind of book? (Circle only one)

    Almost never........... 1
    About once a month..... 2
    About once a week...... 3
    Almost every day........ 4
Appendix G

Multiple Intelligence Inventory

Student number: ____________________  Teacher: ____________________  Date: ____________________

Put an “x” next to those statements which are true about you. Then tally your “x”s on the score line for each intelligence.

**Linguistic Intelligence (Language, writing, etc.)**

1. ___ I love books.
2. ___ I can mentally hear words even before I speak or write them.
3. ___ I often enjoy radio, CD’s, and recording more than TV, movies, or plays.
4. ___ I like word games like Scrabble, Yahtzee, Anagrams, Crosswords, etc.
5. ___ I like to recite tongue twisters, silly rhymes, and puns.
6. ___ People often ask me to speak in common vernacular so that they can understand me.
7. ___ English, and classes based on reading (like history) are generally easier for me than math or science.
8. ___ I read the billboards on the highway more than I look at the scenery.
9. ___ I often talk about things I’ve read or heard (more than what I’ve seen, or done).
10. ___ I am proud of what I write. Sometimes I get special recognition for my writing.

**SCORE: ___**

**Logical-Mathematical Intelligence (Math and Science)**

1. ___ I can easily compute numbers in my head.
2. ___ Math and/or science are among my favorite school subjects.
3. ___ I enjoy games and brainteasers that involve math.
4. ___ I enjoy creating little “what if” experiments. (e.g. How much can I save if I skip buying dessert at lunch for a week? What will happen to my average if I score below a 90% on this test?)
5. ___ My mind searches for and finds patterns, rules, or logical sequences in things.
6. ___ I am interested in new developments in science.
7. ___ I believe that almost everything has a rational explanation.
8. ___ I sometimes think in abstract concepts (rather than words or images).
9. ___ I like finding logical flaws in things people say or do (this doesn’t mean being negative).
10. ___ I feel I know something better when it has been measured, categorized, analyzed, or quantified in some way.

**SCORE: ___**
Multiple Intelligence Inventory

Spatial Intelligence (Art, Design, etc.)

1. ___ I often see clear visual images when I close my eyes.
2. ___ I am sensitive to color.
3. ___ I like to take pictures with a camera or camcorder.
4. ___ I like jigsaw puzzles, mazes, or other visual puzzles.
5. ___ I have vivid dreams at night.
6. ___ I can generally find my way around when I am in new places.
7. ___ I draw and doodle.
8. ___ I like geometry better than algebra.
9. ___ I can easily visualize a birds-eye view of a location.
10. ___ I prefer books and reading materials that have lots of illustrations.

Score ______

Bodily-Kinesthetic Intelligence (dance, sports, etc.)

1. ___ I participate in at least one sport or physical activity on a regular basis.
2. ___ I find it difficult to stay still for long periods of time.
3. ___ I like to use my hands creatively at activities such as sewing, or carving, carpentry or model building.
4. ___ My best ideas often come to me when I am out for a long walk, jogging, working out, or engaged in some other physical activities.
5. ___ I often like to spend my free time outdoors.
6. ___ I use hand gestures and body language when I talk to people.
7. ___ I like to hold or touch things to learn more about them.
8. ___ I like the daredevil rides (like roller coaster) at amusement parks, and other thrilling experiences (like surfing, or mountain biking).
9. ___ I am well coordinated.
10. ___ To learn a new skill I need to do it, rather than just hear about it or see it done.

Score ______

Musical Intelligence

1. ___ I have a good singing voice.
2. ___ I can tell when a note is off-key or out of pitch.
3. ___ I listen to music a lot.
4. ___ My life would be much less happy without music.
5. ___ I often have a tune running though my mind.
6. ___ I can easily keep time with a song, tapping, playing a percussion instrument, etc.
7. ___ I know lots of melodies to songs or musical compositions.
8. ___ If I hear a song once or twice, I can usually play or sing most of the melody.
Multiple Intelligence Inventory

9. ___ I often make tapping sounds or sing or hum when I am studying or working.
10. ___ I play a musical instrument.

SCORE: ____

Interpersonal Intelligence (political, leadership, public relations, etc.)

1. ___ People come to me for advice, or to tell me their worries.
2. ___ I prefer group sports (like soccer or football) to solo sports (like jogging or swimming).
3. ___ I seek out friends of professional help (teachers, counselors, etc.) to help me solve my problems rather than trying to work it out by myself.
4. ___ I have at least three close friends.
5. ___ I prefer social games such as Monopoly or Magic over individual recreation like solitaire or video games (when played alone).
6. ___ I like to contribute ideas or projects in class, and I like to show others how to do things.
7. ___ I am a leader.
8. ___ I like being in a crowd.
9. ___ I like to get involved with clubs and other social gatherings.
10. ___ I'd rather spend my evenings at a party or with friends than be at home by myself.

SCORE: ____

Intrapersonal Intelligence (Insightful, spiritual, sympathetic)

1. ___ I like to meditate, pray, or just think about things
2. ___ I have received counseling or gone to groups to learn more about myself.
3. ___ I am able to handle setbacks. I am resilient.
4. ___ I have a special hobby or interest that keeps me pretty much to myself.
5. ___ I have a clear idea of who I am and what my talents or weaknesses are.
6. ___ I have personal goals which I think about often.
7. ___ I am insightful and can sympathize or empathize with other people's feelings.
8. ___ I am strong willed and independent.
9. ___ I keep a diary or journal of my inner life (thoughts and feelings.)
10. ___ I prefer school assignments that allow me to choose what I want to do.

SCORE: ____
Multiple Intelligence Inventory

Naturalistic Intelligence

1. ___ I like to recycle things.
2. ___ I participate in or follow the news about a political activist group of some kind which supports ecology and/or natural living.
3. ___ I enjoy programs and/or magazines that have to do with nature.
4. ___ I enjoy hiking and camping.
5. ___ I like New Age products and ideas.
6. ___ I feed the birds or plan my flower garden to attract butterflies.
7. ___ I am concerned about the depletion of the rain forest, the ozone layer, and pollution.
8. ___ I am fascinated by native cultures that teach that man is part of nature.
9. ___ I like vegetarian food because it is healthier.
10. ___ I support human rights, animal rights, and protecting trees.

SCORE: _____

Please copy all your scores below.

Linguistic ________
Logical ________
Spatial ________
Kinesthetic ________
Musical ________
Interpersonal ________
Intrapersonal ________
Naturalistic ________
Appendix H

Name: ___________________________ Date: ____________

Reading Attitudes

I prefer to read:

alone  with someone  with the class

Explain: _______________________________________________________________
______________________________________________________________
______________________________________________________________
______________________________________________________________

When completing projects I prefer to work:

alone  with someone  with the class

Explain: _______________________________________________________________
______________________________________________________________
______________________________________________________________
______________________________________________________________

When projects are assigned, I prefer to work:

at home  in school

Explain: _______________________________________________________________
______________________________________________________________
______________________________________________________________
______________________________________________________________
Appendix I

Efficacy Check In

I feel _______ about Project-Based Learning because...

Something I like about PBL is...

Something I don’t like about PBL is...

Something I need to do better is...

Initials: ___
Appendix J

Mid-Study Check In

Initials: ____________

Something that I have found really interesting about my topic is...

A question I still have about my topic is...

What I want to do for my presentation is...

Next week I need to...

I am working on my research/project at home (circle one) Yes No

Circle the number that most closely matches your feeling about this project (so far).

1 2 3 4 5
I am having a very hard time. It's going ok. It's going great!
I don't like it. I like it somewhat. I love PBL!
Appendix K

Reflective Journal Prompts

Choose one of the following to respond to. Responses should be thoughtful, honest, and thorough (at least one paragraph).

- Explain something you found especially interesting in your reading or collaboration today. What new questions came up because of this interest?
- Explain something that happened in class today that you are very proud of. Consider how you might make this happen again.
- Explain something that happened in class today that made you frustrated. Consider what you could do to avoid feeling this way again.
Appendix L

Call-Tales: Character Posters

Name: ____________________________

Please answer honestly, and in complete sentences.

1. When analyzing characters in reading, what is it important to remember?


2. What is one thing you did specifically to contribute to your group’s final product and presentation?


3. What is something that went well for your group? What is something your group struggled with?


4. Based on contribution and cooperation, rate each group member on a scale of 1-5.

   Remember to rate yourself as well!

   1 is for very uncooperative, didn’t help at all; 5 is for a great partner you would like to work with again because they really did a lot with your group.

Group Member(s): Score:


6. Please share any other thoughts you have about this project or your group. This is your last chance to explain your role in this project and your feelings and opinions.


Appendix M

Native American Heritage Museum Assembly Reflections...

I enjoyed the assembly (circle one)

1 2 3 4 5
Not at all Eh, it was OK I loved it!!!

The assembly (circle one) was or was not helpful with my research and project.

Explain:

I learned something from the assembly (circle one)

1 2 3 4 5
Not one thing A little bit A lot

The presentation made me feel __________________ about my own presentation because:

Other thoughts about assemblies that show us what we are learning in class:

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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</thead>
<tbody>
<tr>
<td>Not one thing</td>
<td>A little bit</td>
<td>A lot</td>
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</table>
Why did you enjoy the assembly so much?

What made the assembly interesting to you?
Appendix N

Presentation Plan

What my presentation is about:

Who is my audience?

What do I want my audience to know, feel, or do?

How will I begin my presentation?

What will be in the middle part of my presentation?

How will I end my presentation?

What will I show or do to make my presentation interesting?
Appendix O

Initials: ___________________________ Date: ________________

Project-Based Learning Post Survey...

I enjoyed working on my project (circle one)

1 2 3 4 5
Not at all Eh, it was ok. I loved it!!!

Do you think you learned more or less from this project than you would have from a traditional lesson? Please explain.

________________________________________________________________________

________________________________________________________________________

What do you think went well for this project? (What did you like? Be specific.)

________________________________________________________________________

________________________________________________________________________

If doing another project, what would you do differently? Why?

________________________________________________________________________

________________________________________________________________________

How much help did you get from your group?

1 2 3 4 5
None A little bit A lot!

Please tell me about the experiences you had working with your group.
How much help did you get from your family/friends at home?

1  2  3  4  5
None  A little bit  A lot!

Please explain:

Do you feel the written reflections we did each week were helpful? Why or why not?

Please tell me in your own words what each of the stages of PBL means to you...

1. Observation and Personalization:

2. Search and Retrieval:

3. Comprehension and Integration:

4. Communication:

Is there anything you think should change to help project-based learning run more smoothly in the future? Please explain.
## Appendix P

### In-Class Observations

<table>
<thead>
<tr>
<th>Student #</th>
<th>Actively Engaged</th>
<th>Uses Appropriate Resources</th>
<th>Seeks Appropriate Assistance</th>
<th>Works Collaboratively</th>
<th>Self-corrects Off-task Behavior</th>
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</tbody>
</table>

*minus* = unsatisfactory  
*check* = satisfactory  
*plus* = exemplar
Appendix Q

November 7, 2011

Dear Parents,

I am writing to tell you about the exciting projects we are about to do in our class.

As you know, I am researching an approach to learning that is project-based in order to help students learn better. Projects motivate students to gain knowledge and give students the chance to apply the skills they learn in school to personally relevant and real-world situations. In project-based learning, your child also learns skills such as how to think critically, solve problems, work in teams, and make presentations. These skills will help students succeed in the future, both in school and the professional world.

Our projects are themed around Native Americans. Students have been learning about Native American tribes and cultures in school for a few weeks. Now they have chosen a topic they are interested in learning more about. Students will be involved in research using print resources and the internet, organizing their information into a visual product, and preparing an oral presentation. Your child will work in a team, guided by me.

At the end of the project, students will make presentations to their class and other students and teachers from around the school. These presentations will take place at school the week of November 21st. We hope you will be able to attend. More information will be sent home closer to the end of our projects.

Students will be assessed individually on their content knowledge, their collaboration skills, and their presentation skills. I have attached the rubric we will use to guide the creation of their projects and assess their work. You may find it helpful in understanding what we are asking the students to do, and supporting your child during the project. As parents, you can discuss the project at home, encouraging your child to think hard and ask questions about his/her topic. You can also support the project by providing expertise and resources when possible.

I hope that this experience is enjoyable and memorable for each student. Please do not hesitate to contact me if you have any questions or concerns.

Sincerely,

[Signature]

Mrs. Sherman
Appendix R

Standards Addressed During PBL: Native Americans

PDE Reading, Writing, Speaking, and Listening

1.1 Learning to Read Independently
- 5.B. Select texts for a particular purpose using the format of the text as a guide.
- 5.C. Use knowledge of phonics, syllabication, prefixes, suffixes, the dictionary or context clues to decode and understand new words during reading. Use these words accurately in writing and speaking.
- 5.F. Identify, understand the meaning of and use correctly key vocabulary from various subject areas.
- 5.G. Demonstrate after reading understanding and interpretation of both fiction and nonfiction text.
  - Summarize the major ideas, themes or procedures of the text.
  - Relate new information or ideas from the text to that learned through additional reading and media (e.g., film, audiotaape).
  - Clarify ideas and understandings through rereading and discussion.
  - Make responsible assertions about the ideas from the text by citing evidence.
  - Extend ideas found in the text.
- 5.H. Demonstrate fluency and comprehension in reading.
  - Read a variety of genres and types of text.

1.2 Reading Critically in All Content Areas
- 5.A. Read and understand essential content of informational texts and documents in all academic areas.
  - Distinguish fact from opinion across texts.
  - Distinguish between essential and nonessential information across a variety of texts, identifying stereotypes and exaggeration where present.
  - Make inferences about similar concepts in multiple texts and draw conclusions.
  - Evaluate text organization and content to determine the author's purpose and effectiveness.
- 5.B. Use and understand a variety of media and evaluate the quality of material produced.
  - Use a variety of media (e.g., computerized card catalogues, encyclopedias) for research.
  - Evaluate the role of media as a source of both entertainment and information.
  - Use established criteria to design and develop a media project (e.g., script, play, audiotaape) for a targeted audience.

1.4 Types of Writing
- 5.B. Write multi-paragraph informational pieces (e.g., essays, descriptions, letters, reports, instructions).
  - Include cause and effect.
  - Develop a problem and solution when appropriate to the topic.
  - Use relevant graphics (e.g., maps, charts, graphs, tables, illustrations, photographs).

1.5 Quality of Writing
- 5.A. Write with a sharp, distinct focus identifying topic, task and audience.
- 5.B. Write using well-developed content appropriate for the topic.
  - Gather, organize and select the most effective information appropriate for the topic, task and audience.
  - Write paragraphs that have a topic sentence and supporting details.
- 5.C. Write with controlled and/or subtle organization.
  - Sustain a logical order within sentences and between paragraphs using meaningful transitions.
  - Include an identifiable introduction, body and conclusion.
- 5.D. Write with an understanding of the stylistic aspects of composition.
  - Use different types and lengths of sentences.
  - Use precise language including adjectives, adverbs, action verbs and specific details that convey the writer's meaning.
  - Develop and maintain a consistent voice.
Standards Addressed During PBL: Native Americans

- 5.E. Revise writing to improve organization and word choice; check the logic, order of ideas and precision of vocabulary.
- 5 F. Edit writing using the conventions of language.
  - Spell common, frequently used words correctly.
  - Use capital letters correctly.
  - Punctuate correctly (periods, exclamation points, question marks, commas, quotation marks, apostrophes).
  - Use nouns, pronouns, verbs, adjectives, adverbs, conjunctions, prepositions and interjections properly.
  - Use complete sentences (simple, compound, declarative, interrogative, exclamatory and imperative).
- 5.G. Present and/or defend written work for publication when appropriate.

1.6 Speaking and Listening

- 5.A. Listen to others.
  - Ask pertinent questions.
  - Distinguish relevant information, ideas and opinions from those that are irrelevant.
  - Take notes when prompted.
- 5.C. Speak using skills appropriate to formal speech situations.
  - Use complete sentences.
  - Pronounce words correctly.
  - Use appropriate volume.
  - Pace speech so that it is understandable.
  - Adjust content for different audiences (e.g., fellow classmates, parents).
  - Speak with a purpose in mind.
- 5.D. Contribute to discussions.
  - Ask relevant questions.
  - Respond with relevant information or opinions to questions asked.
  - Listen to and acknowledge the contributions of others.
  - Adjust involvement to encourage equitable participation.
  - Give reasons for opinions.
  - Summarize, when prompted.
- 5.E. Participate in small and large group discussions and presentations.
  - Participate in everyday conversation.
  - Present an oral reading.
  - Deliver research reports.
  - Conduct interviews.
  - Plan and participate in group presentations.
  - Contribute to informal debates.
- 5.F. Use media for learning purposes.
  - Compare information received on television with that received on radio or in newspapers.
  - Access information on Internet.
  - Discuss the reliability of information received on Internet sources.
  - Explain how film can represent either accurate versions or fictional versions of the same event.
  - Use a variety of images and sounds to create an effective presentation on a topic.

PDE History

8.1. Historical Analysis and Skills Development

- 6.A. Understand chronological thinking and distinguish between past, present and future time.
  - Calendar time
  - Time lines
  - People and events in time
  - Patterns of continuity and change
  - Sequential order
  - Context for events
- 6.B. Explain and analyze historical sources.
  - Data in historical and contemporary maps, graphs and tables
  - Author or historical source
Standards Addressed During PBL: Native Americans

- Multiple historical perspectives
- Visual evidence
- Mathematical data from graphs and tables
- 6.C. Explain the fundamentals of historical interpretation.
  - Difference between fact and opinion
  - Multiple points of view
  - Illustrations in historical stories
  - Causes and results
  - Author or source of historical narratives
- 6.D. Describe and explain historical research.
  - Historical events (time and place)
  - Facts, folklore and fiction
  - Historical questions
  - Primary sources
  - Secondary sources
  - Conclusions (e.g., simulations, group projects, skits and plays)

8.3. United States History
- 6.A. Identify and explain the political and cultural contributions of individuals and groups to United States history from Beginnings to 1824.
  - Native Americans

PDF Geography

7.1. Basic Geography Literacy
- 6.B. Describe and locate places and regions.

7.3. The Human Characteristics of Places and Regions
- 6.B. Describe the human characteristics of places and regions by their cultural characteristics.
- 6.C. Describe the human characteristics of places and regions by their settlement characteristics.
- 6.D. Describe the human characteristics of places and regions by their economic activities.