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Project Based Learning as a Teaching and Learning Method for Middle School

ELLs

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A capstone submitted in partial fulfillment of the requirements for the degree of

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Chapter 1

Introduction and Overview

My capstone project addresses the question: *How effective is Project Based Learning (PBL) for improving the achievement and engagement of English Language Learners (ELLs) over the traditional teaching and learning methods?*

Chapter one of this paper consists of the background information, context, and rationale behind the research question. It will explain my prior experiences as an English teacher in India as well as my current role as an English Language Development (ELD) Specialist. I work in an urban middle school with students in grades 5-7 with low to intermediate levels of English proficiency. The chapter will conclude by providing an overview of the upcoming chapters.

Context and Rationale

Buck Institute for Education (n.d.) calls PBL a teaching method that uses real-world and personally meaningful projects to engage students in learning. PBL is helpful for all students to understand difficult concepts in the classroom, and to deepen their understanding through authentic, hands-on projects. A 2019 study from the Buck Institute shows that students who participate in PBL demonstrate statistically significant growth in reading, math, and history, as compared to their peers. I chose the topic of PBL for my capstone because of the improvement I had seen in student achievement in my previous experiences teaching English in India. I taught fourth grade English in Kolkata, India at a private English-medium school for more than fifteen years. The students there are multilingual and mainly speak three languages: English, Hindi or Urdu, and

Bengali. Throughout the years, I gave various group projects to my students, for whom English was their second language. I also taught social studies and science, and saw many successful student creations made as a result of this teaching method. For example, students created posters about cleaning parks and sidewalks in their neighborhoods. They painted walls with poetry and inspirational quotes in both English and their native languages, to erase graffiti in the surrounding area of the school. In another project, students proposed creating an ideal school that would be more organized, so they designed architectural maps depicting their ideas pertaining to each floor plan and its surroundings. The project included mathematical components such as the thickness of the windows for noise reduction and temperature management. Using PBL in my classroom, I noticed that even those students who were disengaged, or not as proficient as their peers academically, would succeed in understanding difficult concepts through collaboration with their classmates.

In 2014, I moved to the United States. After living here for a few months, I realized that I missed interacting with students, the projects they created throughout the year, and observing the success they achieved in their learning. I decided to continue my education so that I could learn the pedagogy of the American system of education, and so that I could teach again. I enrolled in the English as a Second Language licensure program at Hamline University, and simultaneously started substitute teaching in Minneapolis Public Schools. In my early courses at Hamline, I studied global education methods, and was struck by Project Based Learning (PBL). The idea struck me because the literature I read

noted that students participating in PBL gained enhanced communication skills, increased engagement, and were able to contribute equally and significantly to the projects. It reminded me of my own facilitating group projects while teaching in India, and my students' increased collaboration, learning, and application of the concepts.

According to Boss and Krauss (2014), PBL is a strategy made to turn traditional classrooms “upside down.” In the new classroom model, teachers' roles shift away from content-experts, and students pursue their own questions to create their own meaning. PBL increases student motivation, problem-solving, teamwork, and higher-order thinking skills. It also involves investigating open-ended questions and applying students' knowledge by producing authentic products (Boss & Krauss, 2014). Examples of authentic products can include the construction of physical or digital objects or presentations. As a result of my experiences and research, PBL is proven to enhance the ability to acquire new understandings, and create a more meaningful connection to learning.

For the last several years, there has been a rise in immigration to the United States, leading to an increase in linguistic and racial diversity in the schools. Since my transition to teaching here, I have found it most interesting to teach English to students with lower levels of proficiency. Primarily, teaching ELLs was interesting because the methodology was so different from my prior teaching experiences. Additionally, students with lower levels of English proficiency seemed to be neglected or lacking in participation in the classroom. I noticed that they could not communicate fluently in English, and could not understand what

the teacher was saying in class. I learned in my studies at Hamline University that the result of this is what Gloria Ladson-Billings (2006) refers to as the “opportunity gap.” Despite English being the students’ second language in my classrooms in India, they were already proficient in the four domains (listening, speaking, reading, and writing) of English right from their childhood. Learning English as a foreign language in India, starting from birth, is given high importance to be able to communicate fluently with the rest of the world. When I began my journey to become a teacher in the United States, I was intrigued to learn more about how teachers were able to manage classrooms full of diverse students speaking multiple languages. In my observations, I noticed teachers scaffolding their lessons using various visual strategies, but that students were still struggling to engage. Seeing the learners struggle with the language sparked my interest in helping ELLs achieve success.

After I completed my licensure, I obtained a job working with ELLs in grades 5-7 in Minneapolis, Minnesota. The majority of students I worked with were bilingual Latinx students. I noticed immediately that many of the newcomers to the school were struggling to connect to their learning in the mainstream classroom. My project was to determine how effective PBL can be for English Language Learners (ELLs) in grades 5-7 at World-Class Instructional Design and Assessment (WIDA) levels 1-2. The project also explored ways to implement PBL into a second language classroom or setting. My goal was to support struggling students in the mainstream classes to help them achieve success with content and academic vocabulary, to enable them to apply that knowledge in the

future. Greenier (2018) provides the most helpful background to this project, proposing the “10Cs of project-based learning TESOL curriculum,” specifying how to tailor PBL to the second language classroom. The students of the study concluded that “it was more interesting and engaging than the teacher-centered approaches to which they were accustomed” (p. 34). In order to be effective for ELLs, PBL must be targeted to their needs, empowering them to create original, meaningful, and rewarding projects.

The theory behind PBL explains that teaching core concepts to ELLs in content classes, and then providing hands-on projects for them to demonstrate their learning, helps them to deepen their understanding and make connections to the real world. ELLs need lots of scaffolding to understand new concepts to support their learning of academic language. For example, in a grade 6 science class, I scaffolded a lesson on germination by creating a project in which students grew seeds into plants and measured the amount of light, water, and oxygen the plants received. Students took notes on a daily basis to measure the growth of the plants. Many content teachers use traditional teaching methods, while ignoring connections to background knowledge and real-world situations. If teachers had more visually and kinesthetically-supported lessons tailored to ELLs, targeting academic vocabulary, both students and teachers would see more success. In the mainstream classrooms that I pushed into as an ELD Specialist, I provided support to create engaging projects. The educators later shared that they felt PBL would be beneficial if incorporated on a regular basis in the mainstream

classroom. It is my goal to collaborate with other educators to be able to incorporate PBL more widely.

Now that I am working with ELLs in Minnesota, I have noticed that the things students find the most engaging incorporate similar kinds of group work that I did previously in India, but in more creative ways that use technology, such as: Flipgrid video creation, Google Jamboards, and Slides presentations. I wanted to dive deeper with my capstone project to see how I could create an active learning environment for my students, whether in the mainstream or second language classroom. Confucius said: “Talk to me I’ll forget, show me I’ll remember, involve me, and I’ll understand.” I have seen that, by involving students, they are able to connect the learning to their rich background knowledge, more clearly understand the concepts presented in class, and later on apply their learning.

Summary

Chapter one provided the background of this project and why PBL is helpful for ELLs in both the mainstream and second language classroom. The chapter also provided an overview of my background coming from a global perspective, having taught English abroad in India for many years. Educators in almost every school in America now have students whose native language is other than English and whose proficiency levels in English do not currently allow them to access the content of the mainstream classroom. The lack of resources available for both students and teachers is leading to a significant and unfair “opportunity gap” (Ladson-Billings, 2006). Increased incorporation of PBL would be

extremely beneficial to fill this gap not only for students, but also for educators, who can learn to be facilitators of learning. The “opportunity gap” can only be closed when students are able to apply their learning across all content areas. Chapter two, of the literature review, will synthesize current research on the success of PBL. All of the current research asserts that PBL is effective for all students. This capstone paper will provide specific, structured ways to incorporate PBL into both mainstream and pull-out groups for ELL/ELD teachers. Chapter three will provide a full description of the project, methods, theory, and reflections from three implementations of PBL in the classroom with ELLs. Chapter four will conclude with an overall narrative reflection on the project.

Chapter 2

Introduction and Overview

My capstone project addresses the question: *How effective is Project Based Learning (PBL) for improving the achievement and engagement of English Language Learners (ELLs) over the traditional teaching and learning methods?*

According to the Buck Institute for Education (n.d.), PBL is an innovative approach to teaching and learning which enables students to increase their intrinsic motivation and work collaboratively in groups by communicating and contributing meaningfully to the project. Additionally, PBL is helpful because authentic projects connect to real-world situations, helping all students achieve success in and outside the classroom.

Chapter two focuses on four themes in the literature which answer the research question: 1) the effectiveness of PBL as a learning method for students, 2) the effectiveness of PBL as a teaching method, and 3) the effectiveness of PBL in both mainstream classrooms and 4) ELL pull-out groups. The chapter synthesizes the research about how PBL enhances motivation and engagement, builds 21st century skills, and develops academic language. All these factors are fundamental to PBL and why it is so effective. The purpose of this paper is to benefit other educators who work with ELL populations. Thus, chapter two also discusses how training in PBL can benefit teachers by giving them tools and strategies for how to conduct successful projects. Teachers may face various challenges when attempting to enact PBL in the classroom. However, there are solutions. The chapter provides specific and practical ideas for how to make PBL

happen, and how to build strong foundational language skills in ELLs. Strong foundational skills are essential for students to be able to develop academic language and apply their learning to their core content subjects. The chapter concludes with sheltered instruction which can help ELLs achieve greater success all throughout school, where the skills they learn in smaller groups can transfer over into the mainstream classroom.

Effectiveness of PBL as a Learning Method for ELLs

PBL is effective as a learning method as it has the potential to engage all students in extended learning, gaining success through meaningful, collaborative, hands-on projects (Buck Institute for Education, n.d.). PBL has been proven to improve students' critical thinking skills, build confidence, increase learner responsibility, and prepare them for college readiness (Larmer et al., 2015). The next section will cover the three main areas of growth for ELL students partaking in PBL at school: increasing motivation and engagement, 21st century skills, and academic language development.

Increases Motivation and Engagement

Students from low to middle income backgrounds, and those coming from families with a differing culture from that of the majority have been seen to have low motivation to achieve at school. Reasons for low levels of motivation might be that parents are not fully involved or have a limited education themselves, or that cultural values and norms might differ from the values of the school. Further, schools may not be able to meet those students' psychological needs. According to Bartscher et al. (1995), PBL can increase student motivation by involving

meaningful topics, peer cooperation and voice and choice. In Batscher et al.'s study of 3rd, 6th, and 10th graders, students responded favorably to PBL, and overall their homework completion increased due to the topics being connected to real-life situations. Overall, the students found the immersive learning activities helped improve their comprehension and interest in the topic, though choice was the most important factor for high schoolers. Disadvantaged students often receive less choice, and less instruction in higher-order thinking skills than those who are more advantaged (Bartscher et al., 1995). Keeping learning meaningful for students can help them engage and handle more complex tasks.

Bell (2010) also describes how PBL can help spur students' long-term learning motivation and accountability. When students' natural curiosity is piqued through inquiry-based PBL, and student voice and choice are elicited, student motivation and engagement increases. Through opportunities to seek their own learning, students develop intrinsic motivation for pursuing their own interests in a topic. Differentiation can be a large part of building intrinsic motivation, as students are able to learn at their own level. Bell (2010) states that, as a result of differentiation: "students will often reach higher and attempt to read more challenging material to glean the information they seek" (p. 41). In the 21st century, teachers gear students to be successful by finding their own intrinsic motivation. Mosier et al. (2016) also report high levels of student engagement related to learning through relevant projects, stating that when students felt the learning was "relevant to their lives outside of the classroom and applicable to their future education or career trajectories," it made a positive impact on their

learning (p. 8). If students are engaged in school from a young age, it can improve their overall achievement through high school and college.

Enhances 21st Century Skills

PBL is an innovative approach which prepares students for success in the real world. PBL enhances 21st century skills such as collaboration, communication, independent thinking, problem solving, and viable technology skills (Bell, 2010). In addition to hands-on skills, students learn responsibility, independence, discipline, goal setting, time management, and self-reliance (Bell, 2010). Mosier et al. (2016) add that students learn similar 21st century skills through PBL, adding teamwork and research. The authors also add that learning how to solve complex problems in school will transfer into the ability to solve the problems as adults in the future. Students in the same study reported that they learned 21st century skills by solving problems in a team, and having positive involvement with their community. Finally, a democratic and positive school environment created higher engagement and learning (Mosier et al., 2016). Critical thinking is often a skill that is neglected in teaching ELLs, though it is necessary to be successful in today's global society. PBL can develop ELL's critical thinking skills through the enhanced use of technology, tapping into their metacognition through open-ended questions, as well as keeping the topics and skills relevant to their lives and futures in the 21st century (Bell, 2010). Many of these skills, Bell (2010) states, are not measurable through standardized tests. Larmer et al. (2015), however, assert that students can reach the Common Core

State Standards (CCSS) for ELA and Mathematics through PBL. Difficult concepts can become more accessible to ELLs through projects.

Similarly, Yang and Gamble (2013) emphasize that students in the 21st century require critical thinking skills such as metacognition, being able to logically evaluate information, and to solve problems. For example, in Yang and Gamble's (2013) study, students were taught how to write argumentative essays on the topic of causes and solutions to global warming. Students used draft-writing, peer reviewing, and reflection to build both their critical thinking abilities and their language proficiency. One study looks at the impact of PBL from the perspective of being taught entirely online. From engaging in PBL in an online format, students in Chanpet's study (2020) ranked themselves highly in a self-assessment in the category of 21st century skills, namely: thinking creatively, making decisions, and engaging in metacognitive thinking.

Develops Academic Language

Academic language consists of the various key vocabulary terms that students learn in school in order to access content. It includes discipline-specific vocabulary and language devices. A major reason why newcomers and low-proficiency ELLs cannot communicate in the school environment is for a lack of academic language. From a global perspective, it is important to develop academic language, not only to access content in school, but to be able to communicate effectively in the world. For ELL educators around the world, PBL has proven successful in developing students' academic language and their experience of success in school.

Yang and Gamble (2013) propose several ways to foster the development of academic language through PBL, including activities that develop the four domains of English (listening, speaking, reading, and writing). In the study, students' English reading, listening comprehension, and speaking improved with the use of critical thinking-integrated activities in the classroom. For example, a jigsaw activity helped learners to remain engaged in informational literacy and presentation skills. In another activity, students took turns debating which side of a topic they would take and evaluated their peers with a rubric. Writing activities consisted of quick writes in which students could write down their opinions and reflections on issues. Then, they systematically prepared their argumentative essays. Activities which include practice in all four domains of English can help to build up students' academic language.

Ramirez-Maldonado (2018) states that PBL provides a "natural setting" that supports ELLs' abilities to construct meaning and expand their knowledge of content through dialogue and student-centered conversations (p. 115). Dialogue with peers can enhance and build upon one's academic language. When teachers or facilitators provide proper structures, such as sentence frames and grammatical rules, it is especially beneficial for ELLs. The author further explains the five key themes of academic language development in the CCSS: 1) meaning making, 2) language development, 3) content knowledge, 4) foundational skills, 5) effective expression. In PBL, activities can be designed in a way that targets academic language, which in turn supports students' critical thinking skills.

Ramirez-Maldonado (2018) also states that "with PBL, ELs may build upon their

strengths acquiring higher abilities for deeper thought processes while engaged in a student centered instructional approach” (p. 76). ELLs benefit from settings that allow for natural and authentic dialogue with their peers.

Vaca Torres and Gomez Rodriguez (2017) further discuss how ELLs can develop their speaking skills through PBL. Data revealed that PBL helped students increase their language competence due to an urgent need to improve their vocabulary for social purposes. Language competence was increased through asking questions and receiving peer and teacher support. Students took initiative in PBL to improve their vocabulary. Through real-life scenarios in the classroom, speaking became “a communicative need” (p. 58). When academic language is developed authentically in PBL, it helps students with their oral production, an effective mode of communication in the real world.

A barrier that can get in the way of building ELLs’ academic language is performance anxiety. Santos Green et al. (2014) explain how a project in which students perform using technology such as vidcasts can be helpful for ELLs by lowering students’ affective filters and lowering anxiety. Students first write a detailed script, choose visuals to support their ideas, then create videos or multimedia presentations about their topics. Through the process of video creation, students have the opportunity to correct their language errors, which minimizes their negative feelings about making performance mistakes. Vaca Torres and Gomez Rodriguez (2017) agree that the fear of speaking in a new language can be overcome through preparing and rehearsing, code-switching and translation. Researchers debate over whether students should speak exclusively in

their target language, or if their native language can be used to supplement. However, the authors explain that code-switching and translation can help students to compensate for failures with oral production and fluency. Greenier (2020) contends that PBL has the potential to build up ELLs' target language "as both the object and the vehicle of learning" (p. 27). Students learning a new language encounter barriers to developing academic language, and PBL offers solutions. Barriers can be overcome through PBL when teachers facilitate the learning by guiding students effectively. The next section explains how teachers play an integral role in conducting successful projects.

Effectiveness of PBL as a Teaching Method

PBL is different from traditional teaching models, and is effective, since it has a solid track record of increasing student motivation, improving problem-solving skills, and developing higher-order thinking skills (Boss & Krauss, 2007). The teacher's role in PBL is to guide and facilitate student learning through inquiry, and by creating strategic small groups. Teachers are also responsible for scaffolding, modeling, assessing, and creating an environment conducive to sustained student inquiry. In PBL, teachers shift their focus to increasing student cognition through active learning. This section of chapter two will focus on the literature surrounding the benefits of PBL for teachers, the challenges that teachers may encounter while enacting PBL in the classroom with ELLs, and solutions that have been found so far to address those challenges. The final section of chapter two will provide tips for how to effectively organize PBL in a classroom.

Benefits

There are many benefits for educators related to incorporating PBL in the classroom. First of all, PBL helps teachers to collaborate, providing new opportunities for them to work together to innovate and overcome the traditional isolation associated with the profession. PBL can provide opportunities for professional development, which meets teachers' 21st century needs, building skills such as project management, informational literacy, and interdisciplinary instructional design. Teachers with the skills of a project manager ensure success through time management, and seeing that each student is contributing equally to the project (Boss & Krauss, 2007). As a result of professional development opportunities, Thomas (2010) has discussed “enhanced professionalism and collaboration” as unintended and beneficial consequences of PBL (p. 36). Many resources are available for teachers through multimedia digital platforms such as Edutopia and Buck Institute to become experts in the implementation of PBL (Boss & Krauss, 2014). Increased collaboration and professional development with the help of various resources are some of the benefits for educators using PBL.

Another benefit of PBL for teachers involves creating opportunities for new learning and community building. With PBL, teachers broadcast their class' projects publicly, which can benefit other teachers in the vicinity and help them obtain useful feedback in order to better meet instructional goals in the future and build community connections (Boss & Krauss, 2007). PBL helps teachers to build bridges between students and the outside world, opening doors and possibilities

for new learning (Boss & Krauss, 2014). Larmer (2010) also discusses how audiences, including family and community members, should attend the publication of the projects. The presence of community members and other educators can provide teachers with leverage and support, building pride and meaningfulness around the project, as well as opening opportunities for teachers to gain funding for future projects. Additionally, if students are approached by visitors, they are able to explain their work in progress and how learning as a group is beneficial (Boss & Krauss, 2007). School leaders can also help PBL be successful by encouraging teachers to share their project plans in a digital library. Public sharing of projects can help others to learn from their experiences and modify projects to meet future learners' needs and instructional goals.

Challenges

While teachers are designing PBL, they might encounter certain obstacles or challenges. Many practical constraints of PBL include fixed and inadequate resources, inflexible schedules, and incompatible technology (Blumenfeld et al., 1991). Blumenfeld et al. (1994) add class size, composition, and strict curricular policies to the challenges of enacting PBL in the classroom. A final challenge for teachers using PBL is the pressure to cover all academic content in the limited time they are given. Blumenfeld et al. (1991) share that a weakness of PBL is that there must be proper time allotment for projects to be completed fully. Projects also must remain on-track and not divert from the main topic of exploration. Teachers need to be trained thoroughly to execute PBL in a timely and productive manner. Proper timeliness and organization will lead to higher student motivation

(Blumenfeld et al., 1991). Santos Green et al. (2014) emphasize that future research should consider administrative support on the implementation of constructionist learning projects, as the projects are time consuming and “place a heavy burden on teaching staff” (p. 321). Teachers face various challenges when attempting to implement PBL into the classroom, but solutions are available to overcome them.

Solutions

There are several solutions to the aforementioned challenges of incorporating PBL into the classroom. First, teachers are responsible for keeping students on track and on topic. By creating a positive learning environment where a culture of student self-management is established, and where the project is physically able to take place, teachers can maintain student focus (Thomas, 2000). It is also important to include culturally responsive topics to help students connect the new learning to their background knowledge (Wood, 2013). The use of driving questions will also help students to remain on topic. Driving questions gear students’ thinking towards the core concepts and content of the project (Thomas, 2000). Solid driving questions might begin with “which,” “how,” “what if,” “should,” and “why” (Boss & Krauss, 2014, pp. 160-161). Driving questions at the source of the project allow students to approach complex concepts in a positive way (Blumenfeld et al., 1991). Creating a positive learning environment in which driving questions are culturally relevant and engaging can ensure that PBL will be effective for both teachers and students.

In addition to a positive learning environment, Thomas (2000) discusses the need for intervention and accommodation to increase the effectiveness of PBL. Scaffolding, including visual supports, models, and exemplars are needed on a regular basis. Scaffolding in PBL involves going one step at a time, helping educators to guide students in an organized way, and keep students on track. Incorporating student roles, routines, and culturally relevant learning can also provide necessary structure to help PBL to be effective for all students (May, 2018). The author further asserts that when students can access PBL, they achieve gains in literacy, fluency, critical thinking, cultural literacy, and self-concept. Appropriate learning goals are required to create enthusiasm and focus, so that students know exactly what to do and how to do it. Additional ideas related to practical implementation of PBL can be found in the upcoming how-to section.

A final solution to the previously mentioned challenges in enacting PBL is support from the administration. Support from leadership can remove barriers that teachers may face in enacting PBL in the classroom, such as insufficient funding, too-large class sizes, or a lack of necessary professional development. When barriers are removed, it can help teachers and students to better meet educational goals and objectives (Boss & Krauss, 2007). Additionally, Thomas (2000) states that the effectiveness of PBL increases when it is “incorporated into whole-school change efforts” (p. 37). When PBL is incorporated into every content area, there is greater success with student achievement. Ideas for what teachers can do specifically to make PBL successful are outlined in the following section.

How to Make It Happen

What concepts or skills do students struggle with most in the classroom? The answer to this question can help teachers to determine the best topic of study to dive into with PBL. Once a topic is chosen, there are several elements to consider when building the structure of the project. Buck Institute for Education (n.d.) talks of the Gold Standards of PBL with reference to 7 Design Elements to make PBL work in the mainstream classroom. The first element is for the teacher to pose a purposeful and challenging “problem” or “question,” also known as the driving question, in which the teacher asks the students how a problem might be solved. The next element is “sustained inquiry,” in which the teacher constantly guides the students to engage by asking rigorous questions.

“Authenticity” is the next element of effective PBL. The teacher should ask herself how the project is relevant to students’ lives and learning, building real-world connections. Giving students “voice and choice” in their projects is essential, to create equal and meaningful contributions to the project from each student. In this way, students also create their own learning. Next, the element of “reflection” helps students to see what went well, or what they could improve, related to their project activities. The teacher facilitates this process to deepen the reflection. “Critique and feedback” is next, where students listen to and respond to their classmates’ ideas. Through this step, students have an opportunity to practice and revise their work. The “public product” is where students share their project with others, and the learning is taken beyond the classroom. Teachers who wish to enact PBL in their classrooms should take these design elements into

consideration to make learning as meaningful and successful as possible for all students. Greenier (2020) provides a list of the “10 Cs” of PBL to help develop language and concepts. The 10 Cs (coaching, concept generation, confrontation, comprehension, creation, critique, change, culmination, collaborative reflection, composition) are tailored toward ELLs to help them learn academic language and expand their learning in the classroom. Alongside the 7 Gold Standard design elements of PBL, the 10 Cs can be useful for teachers to create a sort of checklist when designing and implementing their projects.

Every good project needs purpose. Larmer and Mergendoller (2010) say that a project is meaningful if students perceive the work as “personally meaningful...that they want to do well,” and fulfills an educational purpose (p. 35). The authors add 21st century skills to the Gold Standards of PBL. They list collaboration, communication, collaborative rubric-building, critical thinking, role-playing, team building, and the use of technology under the umbrella of 21st century skills. Learning how to produce videos and podcasts should take place in addition to writing reflective journals in which students analyze their own problem-solving processes. Applebaum et al. (2017) agree with utilizing technology to support learning and create purpose in PBL, stating: “Web-based tools may promote more deliberate scientific inquiry than open-ended or feature-maximization goals” (p. 179). As students are building upon their knowledge, educators can integrate web-based resources, for example: interactive tools, online reading or viewing materials. Incorporating technology is very important in the 21st century classroom. Projects built online can be shared

outside of the classroom, even globally. Integrating technology into PBL as a teaching method makes learning more purposeful for both the teacher and students.

With regard to ELL students, Foulger and Jimenez-Silva (2007) add that technology can be incorporated into PBL in order to increase engagement for ELLs in the mainstream classroom. Foulger and Jimenez-Silva (2007) suggest specifically having ELL students write their responses, with sentence frames, in an online journal, web page, or presentation. Teachers can incorporate technology into PBL to not only build students' 21st century skills, but also to provide a foundation to impact their academic achievement and success. May (2018) suggests introducing PBL into the ELL classroom with Housen's Visual Thinking Skills, saying that "ELLs depend more on their visual thinking abilities when learning a new language" (p. 47). Using images, multimodal texts, and audio sources can be applied in PBL as teaching methods to support students' engagement and construction of their own learning.

Authentic PBL is sometimes seen to be out of reach for ELLs and struggling readers because their language abilities are below grade level. However, when educators create a culture of belonging, striving and high expectations, students' motivation and depth of learning improve through increased identification with their community of practice (May, 2018). Additionally, teachers should provide adequate support for students with learning disabilities or behavioral issues. 1:1 behavior support may be required in the midst of a fully scaffolded project (Santos Green et al., 2014). Teachers, as

facilitators and guides of PBL, can create positive outcomes by providing adequate support and encouragement in the classroom.

Effectiveness of PBL in the Mainstream Classroom for ELLs

PBL is needed in the mainstream classroom because all students can benefit from participating and acquiring the knowledge of the content topic in a meaningful, hands-on way. This section will discuss the need for the incorporation of English Language Development standards as a framework for PBL, as well as additional scaffolds to help ELLs be successful in the mainstream classroom.

Standards as a Framework

Students need to gain mastery of all core subjects such as English language arts (ELA), math, social studies, and science. In order to help ELLs be successful in obtaining mastery, educators must incorporate their own content area standards, as well as the English Language Development (ELD) standards, which were created so that students with low to intermediate English language proficiency could grasp the academic language of the standards and transfer their learning into the future. There are five ELD standards as developed by the WIDA Consortium, which outline the particular language functions and features that students need to understand in order to be able to communicate ideas in ELA, math, science, social studies, and in general social and instructional settings. According to WIDA (2021), educators should reference the ELD standards to create a bridge between language development and academic content. Ramirez-Maldonado (2018) agrees that teachers should align instruction standards

to the language levels of ELLs. Mainstream educators should collaborate with their ELD teachers to create a structure to help ELLs in the mainstream classroom.

Scaffolding for ELLs

In addition to properly aligning content and language standards, educators in the mainstream classroom should use various strategies to scaffold concepts for ELLs so that even those with low English proficiency can gain mastery of the content in PBL. Ingerson (2011) mentions three important scaffolding techniques: slowing down the teacher's speaking, repeating ideas and concepts, and modifying assignments. An example of a modified assignment for an ELL would be providing reading materials in the student's native language. Other scaffolding techniques to benefit ELLs include targeting three to five key academic vocabulary per day, and providing think-alouds and opportunity for pair-shares while reading a text. With the help of these scaffolding techniques, students will obtain a better grasp of the language. As a result, ELLs can contribute equally in a PBL environment, such as in creating multimedia or oral presentations successfully.

Eslami and Garver (2013) relate to Ingerson (2011) regarding the necessity of scaffolds in the mainstream classroom for ELLs, giving advice to educators on how to help ELLs to achieve success in the mainstream classroom. The strategies include: pre-teaching key vocabulary and concepts, introduction to the topic and the language surrounding it, grouping students strategically, providing meaningful resources, observing and supporting students, and checking

or assessing comprehension and progress (Eslami & Garver, 2013). It is suggested that rubrics or “project frameworks” be used to help ELLs track their development in academic language, content, and skill development throughout the project (p. 123). The project framework referenced below, from Beckett (2005), can be used to help students assess themselves on their progress towards the learning targets given at the beginning of the project, keeping them engaged and focused on the content and academic language being developed, as well as building student accountability.

Figure 1

The Project Diary

Week _____ Project Diary Name _____

Activity	Knowledge and skills		
Things I did this week	Things I learned this week.		
I spoke English to	Language (e.g. vocabulary expressions, grammar)	Content (new information about your topic)	Skills
I talked English			
I read			
I looked for and found			
I looked for and didn't find			
I wrote	Things I hoped to learn this week, but didn't. (State reasons for not learning.)		
I observed			
I created a key visual about			

The figure above shows a visual way of keeping track of students' development of new vocabulary, content, and skills tied to the standards. In maintaining rubrics throughout the process of PBL, students can evaluate their progress, and keep themselves accountable to their learning and their roles in the project. Pull-out

groups of ELL students can be another effective way of keeping students accountable to rigorous learning.

Effectiveness of PBL in Pull-Out Groups

PBL is also beneficial in a pull-out setting. ELLs who are new to the country, and those with WIDA levels 1-2, require further scaffolding to comprehend concepts and develop academic language. Further scaffolding enables ELLs to transfer the acquired language into the mainstream classroom, and contribute both as independent learners and as collaborators with their peers in group assignments. This section discusses building a strong foundation for ELLs, and how sheltered instruction (SI) can successfully incorporate PBL.

Building a Strong Foundation

Project based work in pull-out groups gradually facilitates learning if integrated from elementary school. Hence ELL students develop better understanding in the process of learning with a structured foundation from a young age. Ramirez-Maldonado (2018) agrees that ELL students need a strong foundation in literacy and language to be able to comprehend and apply the language in other core content areas. In addition to the mainstream classroom, PBL is needed in English language instruction pull-out groups for students who need additional language support, and may be classified as WIDA levels 1-2. Hands-on and collaborative activities done in smaller groups help students to apply the language, concepts, and skills and transfer the knowledge to the mainstream classroom.

Sheltered Instruction

Sheltered instruction (SI) is when ELLs with low to intermediate proficiency are pulled out from the mainstream classrooms, and the learning is tailored to their language levels (WIDA levels call this “entering” or “emerging”). The routine of SI begins with understanding the target vocabulary related to the overall concept or topic. Visuals are shown to help students make connections with their own background knowledge. The educator checks students’ comprehension often, and might repeat and clarify as needed. Teachers also formally assess students in a variety of ways (for example: written, spoken, visual or audio presentations). In a sheltered classroom, ELLs are encouraged constantly to work collaboratively with others. Strategic pairs and groups include grouping students at various WIDA levels, so that students with lower levels of proficiency can improve their speaking skills with their peers who have higher proficiency (May, 2018). To show evidence of the success of strategic grouping, the learners in Yang and Gamble’s (2013) study showed gains in metacognition, evaluating information, problem solving, and selecting appropriate strategies for themselves when heterogeneous small groups were constructed.

Johnston (2013) cites the Second Language Acquisition theorist, Stephen Krashen, to say that ELLs do well in environments that are low in stress and anxiety. Pull-out or SI groups are environments in which there are students with similar needs, and hence they feel safe, “to take risks with language without being ridiculed” (p. 28). ELLs also need thorough scaffolding to be able to take risks with language. Many school districts are moving to integrate the Sheltered Instruction Observation Protocol (SIOP) to benefit ELLs with various methods of

scaffolding. The three types of scaffolding in SIOP are: verbal, procedural, and instructional. Verbal scaffolding includes think-alouds, paraphrasing, and reinforcing contextual definitions. Procedural scaffolding involves explicit teaching and modeling, small group instruction, and strategic grouping. Instructional scaffolding includes using graphic organizers to visually reinforce concepts. Johnston (2013) explains Vygotsky's Zone of Proximal Development, in which ELLs are capable of doing things independently versus with assistance from the educator. Scaffolding procedures in SI lead to ELLs being able to do things independently, at a level that is comprehensible to them.

Thomas (2000) discusses how intervention and accommodation can increase the effectiveness of PBL. Intervention can include the scaffolding strategies mentioned above, as reinforced by videos, audio, and visual supports. Overall, the majority of ELL students need additional support outside of the mainstream classroom to "learn how to learn" (p. 36). Along with more individualized teacher support, Greenier's (2020) "10 Cs," outlined in chapter two's "How to Make it Happen" section, help ELLs break down the target vocabulary and deepen understanding of the core concepts.

Summary

Chapter two synthesized the current research about how PBL enhances learner motivation and engagement, develops 21st century skills, and develops the academic language of ELLs. It also discussed the benefits of PBL for teachers, various barriers to implementing PBL, and provided solutions as well as ideas for how to actualize and implement PBL into mainstream and pull-out classrooms.

Finally, chapter two explained how SI as incorporated into PBL can be beneficial for ELLs. Small groups, namely pull-out or SI environments, build a strong foundation for students with low to intermediate English proficiency to be able to comprehend and apply their learning across core content areas. Next, chapter three will describe the project in detail, including the methods and theoretical framework used, and the three projects that I facilitated between Fall 2020 and Spring 2021. Chapter three will conclude with a reflection on the effectiveness of PBL as a learning method as well as a teaching method.

Chapter 3

Introduction and Overview

My capstone project addresses the question: *How effective is Project Based Learning (PBL) for improving the achievement and engagement of English Language Learners (ELLs) over the traditional teaching and learning methods?*

Chapter three provides a detailed description of the context of the project, and the project itself, including the unit plan template. It explains the methods used, and the theoretical framework behind it. This chapter describes the design and implementation of three projects from Fall 2020 to Spring 2021, two in the mainstream middle school classroom, and one in an ELL pull-out group setting. The chapter concludes with a reflection on the effectiveness of PBL as a learning method.

The intended audience of this project is first and foremost the students. From there, I will share the project with fellow ELL/ELD and mainstream teachers who work with ELLs and have little to no background in PBL. Other intended audience members include administration, in order that the PBL curriculum can be developed to be a part of regular, school-wide learning. The overall goal of this project is to give teachers a plethora of ideas in order to build their confidence in facilitating PBL, with the broader goal of engaging all students in learning so that they can achieve success, and transfer their learning.

Context and Rationale

In the introduction chapter, I outlined my context as a middle school English Language Development (ELD) Specialist in an urban setting. I worked

with fifth to seventh grade Latinx ELLs whose English Language Proficiency (ELP) varied from low to intermediate, many of whom were newcomers. When I first pushed into a mainstream virtual classroom of 30 students to provide support to the ELLs with low proficiency in English, I observed that the 10 students in my caseload were disengaged and did not participate adequately as desired by the content teacher. Students on camera were flipping through the pages of their books, and looked blankly at what the teacher said. Similar disengaged behavior continued for a week, and at the end of each day, the students did not submit any of their assignments. Simultaneously, I was teaching classes for the same set of students in the afternoons, following the pull-out model. The pull-out classes consisted of 10 students, and lasted 35 minutes each. I began a series of projects as an experiment to see how it might benefit the students and increase their engagement.

The goal of the projects was to provide opportunities for students to engage with one another around learning, in their L1 or L2. I knew that by providing adequate scaffolds such as strategic groups and the structure of a project, it would engage the students who were previously unable to access the content. Additionally, the goal was to enhance the learning experience for ELLs. My schooling in the United States and my prior teaching experiences in India have pointed me in the direction of PBL to create meaningful opportunities for learning that help students access difficult content as well as achieve success in all four domains of English.

Project Description

The goal of my capstone project was to increase student engagement and develop the academic language of ELLs, so that the students would be able to access the content in their mainstream classes. The project began in Fall 2020 after WIDA remote screeners and evaluations of students' ELP were completed. I used three enactments of PBL, two in a virtual mainstream classroom, and one in a virtual pull-out group setting. The three enactments of PBL included various content themes relating to culture, storytelling, history, science, and technology, supported by lots of visuals. All students used Chromebooks and the platforms Zoom and Google Classroom to access the content and classes online. Each project took between 2-5 weeks, depending on the curriculum and schedule, and involved collaboration and thorough planning with mainstream teachers and administration. I asked for the resources I needed from the school office, and received some donations from the Kids In Need Foundation. I followed the literature and research outlined in chapter two in order to enact the best practices in PBL. I used Bowen's (2017) Understanding by Design (UbD) unit template, as shown below, to outline the goals and details of the curriculum. Bowen's template was useful for my purposes as a multilingual PBL teacher because it helped me to first focus on student goals, and then to focus on important skills for ELLs such as language transfer and acquisition.

Figure 2

Understanding by Design unit plan template

Stage 1 – Desired Results

ESTABLISHED GOALS	<i>Transfer</i>	
	<i>Students will be able to independently use their learning to...</i>	
	<i>Meaning</i>	
	UNDERSTANDINGS <i>Students will understand that...</i>	ESSENTIAL QUESTIONS
	<i>Acquisition</i>	
	<i>Students will know...</i>	<i>Students will be skilled at...</i>
Stage 2 – Evidence and Assessment		
Evaluative Criteria	Assessment Evidence	
	PERFORMANCE TASK(S):	
	OTHER EVIDENCE:	
Stage 3 – Learning Plan		
<i>Summary of Key Learning Events and Instruction</i>		

Methods

At the beginning of the school year, I first evaluated the demographics of the student body, and their native languages (L1s). I assessed the school's available data on Infinite Campus, including how long students had been in the U.S., which students were newcomers, whether they had records from previous schools or prior exposure to English, their parents' linguistic backgrounds, as well as their ACCESS and other standardized test scores. Since I would be working across grade levels, I made a list of students

according to WIDA ELP levels and, after speaking with my principal and other teachers, assigned a time frame for the students to meet regularly in small groups with me.

Ramirez-Maldonado (2018) describes the importance of small group support for the development of academic language for ELLs. My hope was that the small group setting would help the students build a strong foundation in academic language, as well as to get excited about learning and interacting in English. Vygotsky's Zone of Proximal Development theory states that students can work independently at a level that is comprehensible or easily accessible to them. Small groups are a scaffold that help ELLs to break out of their shell without feeling nervous. Krashen's theory of Second Language Acquisition also asserts that ELLs need environments that are low-stress and contain opportunities for meaningful interaction at a comprehensible level (Johnston, 2013). According to May's (2018) PBL research, I also strategically paired the students, which included having a common L1, and pairing them heterogeneously, where higher ELP students could help those with lower English abilities.

An important aspect of the projects for me was to keep a structured and organized framework. The goal was for students to be focused, engaged, and to complete the project successfully, in a stipulated time frame. I chose the UbD unit plan template because it helped me to design the curricular units with the learning goals first and foremost in my mind. I chose real-world topics so that students' interest was easily piqued, and they would connect naturally. Relevant topics with authentic project outcomes would also sustain students' engagement over time. For each project, I set learning targets, specifying language functions (such as: describe, explain) and features (such as: adjectives, verbs) the students would develop. Beckett (2005) emphasizes that learning

targets help students to sustain focus on the activity over time. Figure 1 (page 24-25) is an example of a rubric that can be useful for helping students in mastering the targets. I created my own rubric for the “Holidays Around the World” project, by which students could measure their learning and skill development. Students self-assessed their progress tied to the rubric, as well as evaluated their peers, stating whether their classmates used new vocabulary words, incorporated sufficient pictures, etc. Buck Institute for Education (n.d.), and Greenier (2020) both emphasize the importance of critique and feedback in the PBL process. The process of evaluation in PBL encourages ELLs to feel “that their work is important and their efforts appreciated” (p. 32). May (2018) acknowledges Bloom’s Taxonomy, which also places importance on evaluation, labeling it as the most complex level of understanding. However, May (2018) concludes that PBL is more effective than Bloom’s Taxonomy since it helps to develop academic language throughout, and does not place skills on a hierarchy. According to my own experience and research, PBL is the best, most proven way to get ELLs to engage and succeed in learning language and concepts both in and outside of the classroom.

Figure 3

Holidays around the world project rubric

Criteria for Success: Holiday Presentation Rubric

	4	3	2	1
Wh- headings	Student uses all 5 Wh- headings correctly	Student uses 4 Wh- headings	Student uses 2-3 Wh- headings	Student uses 0-1 Wh- headings
Two pictures per slide	Student uses 2 pictures per slide and pictures are appropriate	Student uses 2 pictures per slide	Student uses 1 picture per slide	Student uses 0-1 pictures per slide

New vocabulary related with holiday	Student uses 5+ vocabulary terms correctly	Student uses 4 vocabulary terms	Student uses 3 vocabulary terms	Student uses 0-2 vocabulary terms
Sentence frames with verbs	Student uses sentence frames with 5+ verbs	Student uses most sentence frames with 4 verbs	Student uses most sentence frames with 3 verbs	Student uses most sentence frames with 0-2 verbs
Presentation quality	-11+ slides -Font is clear and legible, attention to punctuation and grammar -Speaking and explaining is loud and clear	-8-10 slides -Font is legible, some attention to punctuation and grammar -Speaking is clear	-5-7 slides -Font is semi-legible, minimal attention to punctuation and grammar -Speaking is clear	-0-4 slides -Font is illegible, no attention to punctuation and grammar -Speaking is not clear

Theoretical Framework

PBL is a constructivist instructional method that helps students to learn through collaboration to solve problems. It is also a learning model that can be adjusted to various contexts, and students' ability levels (Torres et al., 2017). In the introduction chapter, I described my background as a teacher of English to elementary-aged students in West Bengal, India, for over 15 years. During that time, I developed a social constructivist worldview. Social constructivists believe that individuals create subjective meaning, and that meanings are varied, multiple, and complex (Creswell & Creswell, 2018). There were just a handful of students in my class who at times had difficulty understanding core concepts, not only in English class, but in other subjects such as math and science. Their assessment grades were low, so I decided to try out group projects to help them score proper grades and pass. I believed that collaboration between the students would help them to interact socially, and develop a more thorough understanding of the concepts they were struggling with. I created the groups in such a way that there were students with

various levels of English grouped together, so that each student could offer their own thinking to the group. I provided a basic framework with open-ended Wh- questions (who, what, where, when, why) for group discussion, which led to an increase in students' critical thinking skills. Open-ended questions also allowed for social interaction and encouraged students to construct their own ideas. Finally, the collaborative open discussion format created natural scaffolds that helped the students break down concepts, enabling them to complete the project.

#1 Holidays Around the World Project

The first project I facilitated for my middle school English Language Learners, all from the Latinx community, was on the topic of holidays around the world. The project lasted for four weeks. It met the grades 5-7 Minnesota state social studies standards of geography and ethnic studies, the ELA standards of determining a central idea, and determining the meaning of words and phrases. It also met ELD Standard 1 (see below). The project took place in a pull-out group setting with 12 students. I launched the project by modeling an example of a Google Slide presentation on a holiday from my own culture. Students would have to choose a holiday, research, and create a similar presentation as the culmination of the project. Students brainstormed various holidays that were related to their cultures or experiences in order to answer the Essential Question: How do people celebrate holidays around the world? After students chose varied holidays, I guided the research portion of the project, dividing up the subtopics of the holidays they would be studying, such as: food, customs, geography or cultural origin, and season. I also taught students how to navigate a Google search to incorporate images into their slides. Some students worked independently, while others who chose

similar holidays and needed more support were strategically paired. Daily, students researched using YouTube, Google searches, and/or interviews with family members, friends, or teachers, and shared their learning with a partner (if applicable). As they researched, students took notes in a graphic organizer via Google Docs. Students were provided with sentence frames for each subtopic, though they had the freedom to write and organize their projects freely, as long as they met the requirements of a rubric (shown below). The final presentations, eight minutes each, ran for two days, with students dressed up according to the holiday they were presenting. Students took away the understanding that holidays vary culturally, and deepened connections to their own cultural holidays. Parents and school leadership members were invited to be part of the virtual audience so that students could connect their learning with the real world. At the end of every student's presentation, they were asked questions related to their project to show deeper understanding.

#2 Water Purification Project

The water purification project took place in a mainstream 7th grade science classroom, in which 12 students were ELLs from different backgrounds. It lasted for two weeks, and covered the MN state grades 5-7 science standards about conducting investigations and developing models to represent understanding. The project also covered ELD Standard 4 and the language standards of speaking (demonstrating command of academic English) and writing (punctuation, precise and concise language). The core teacher introduced the topic, key vocabulary, and set up the project purpose, which included reading and writing on the topic of water purification. I implemented an authentic project including the stream that ran behind the school. The project began by

brainstorming with students how to answer the Essential Questions: How do we know if stream water is safe to drink? And: How do we purify water? Students suggested that they go and look at the stream, collect samples of the water and study it under a microscope. On Day 3, students were guided to take samples of the water from the stream in glass jars, and to label them with the time of day and a description of the area where the sample was taken from. On Day 4 of the project, students studied the water under a microscope to see what kind of particles were present in the water, and assess whether it was clean, polluted, or useful for drinking. Since the water was unclean, students decided to design a filtration system to clean the water of harmful particles. Students were strategically paired to do research and create a simple filtration system. They were provided plastic bottles, a cylindrical vase, scissors, cheesecloth, coffee filters, sand, gravel, and charcoal. They measured the materials, and used scissors to cut the plastic bottles and cloths to create their filtration systems. Once built, students experimented with the collected water from the stream, and retested the cleanliness of the water under the microscope. The culmination of the project included a written reflection of the process and findings of their research. Overall, the students deepened their understanding of water purification in a real-world setting.

#3 Landing on the Moon Project

The “landing on the moon” project took place in a 6th grade ELA classroom, in which 6 students were ELLs from Latinx and Somalian backgrounds. It lasted for one week. It covered the middle school MN state standards for science, ELA, and ELD Standard 4. Students were preparing to read a non-fiction text called “Landing on the Moon,” and I suggested to the classroom teacher that a hands-on project of creating a

spaceship and a recreation of the surface of the moon would be helpful in developing background knowledge for the students. The driving question was: How can one travel to the moon to study the moon's surface? We divided the class into two: 6 ELLs in one group, who would design the spaceship, and the rest of the students would recreate a part of the surface of the moon. We told the second group that to recreate the surface of the moon, they could use a flat surface in the classroom. The end goal of the project was to "launch the spaceship into space" and "land it on the moon." Immediately, I divided the group of ELLs down into groups of 3: one was tasked with designing the outer structure of the spaceship, and the other group designed the inside. Designing the structure of the spaceship would reinforce the mathematical terms they had learned in geometry, and help them to develop the academic language they needed to access the informational text. Students were grouped strategically in order to support them in practicing their speaking skills with peers at a similar level of English.

Reflections on PBL as a Learning Method

The most successful part of project #1 was seeing students connect their holiday projects to the community. For example, a student presented on Eid, and a teacher in the audience commented that her mom cooked the same type of food every year. Every parent who attended the presentations sent messages of appreciation that their children could comprehend and explain their topics in English when they went back home and shared it with their grandparents, uncles, and other family members.

In project #2, I saw how students were excited to learn not only the scientific aspects of the project, but the engineering aspects as well. I noticed students providing support to their classmates in adjusting microscopes, and coming up with their own ideas

about how to study the water accurately, and create filtration systems. Students also had a high degree of voice and choice in this project, as they chose where to collect their water samples from, as well as how to filter the water. The water purification project was successful because students were engaged from start to finish.

Students were also excited to participate in creating a spaceship in project #3, and making it “land on the moon.” Students were eager to learn how a spaceship could take off on its own, according to its mass and volume. The learning from this project was interdisciplinary, as in they could take the language they learned and connect it to their learning in science. The learning was also kinesthetic, as in students could get a literal sense of force, volume, and gravity. In the end, students learned that mathematical measurements must be precise in order to have a successful spaceship launch.

By the end of the three projects, I observed the students had become more engaged and competent in communicating orally in the target language. Furthermore, it was effective for me as a teaching method because students showed higher levels of comprehension and completion of assignments. It also provided a framework for me to collaborate successfully with administration and mainstream teachers. For future assessment of the success of the curriculum, I plan to use the formative and summative assessments outlined in the UbD unit plans.

Summary

Chapter three provided the context of the project, a detailed project description including the unit plan template, as well as the methods and theoretical framework behind the three specific projects I implemented. Finally, a reflection on the success of the projects is provided. For students, PBL proved to increase engagement, comprehension,

and academic language skills. As an educator, PBL helped to build my confidence in designing projects for successful learning experiences. The next chapter is a reflective narrative conclusion of the capstone project in its entirety.

Chapter 4

Introduction and Overview

My capstone project addresses the question: *How effective is Project Based Learning (PBL) for improving the achievement and engagement of English Language Learners (ELLs) over the traditional teaching and learning methods?* Chapter four covers the major new learnings about PBL as a teaching and learning method. It also revisits the most important research from the literature review, and explains the limitations, results, and benefits of my research. Finally, the chapter discusses future implications and recommendations for future research. It concludes with a summary of the entire chapter.

Major Learnings

PBL as a Learning Method

PBL creates a spark of interest in students across content areas. According to both research and my own findings, ELLs can become as successful as their mainstream peers through the practice of PBL. Through the projects that I have completed in classrooms both in the United States and in India, I have found students to take keen interest and get engaged, taking on collaborative roles and communicating with their peers. Student feedback from each project included comments about wanting to continue to learn in a PBL format and encouraged me to plan and conduct more projects.

PBL as a Teaching Method

As an educator, I am constantly searching for and building upon my current strategies for reaching students at various proficiency levels in English. I have learned that PBL engages students more than the traditional teaching methods. I have also learned

that teachers need more strategies to target ELLs, such as scaffolding language, and beginning with clear language and learning targets. The UbD template helped me to develop units in a structured manner to be able to tailor the projects to ELLs. However, to incorporate PBL successfully, teachers need adequate prep time to collaborate with one another. Through collaboration, teachers who are struggling to engage their ELLs can learn from more experienced teachers about things such as when and how to add visuals and background-building components to hook students. More development around incorporating PBL and tailoring learning to the needs of ELLs is necessary throughout school systems.

A new finding in my research was how to clearly establish my role as a facilitator of the projects. The goal of PBL is to let students come up with the learning on their own, authentically. The research reinforced that in order to facilitate learning for ELLs through PBL, I can provide clear structure, modeling, and conferencing, as well as linguistic scaffolds. Upon completing this capstone project, I feel I can better structure authentic PBL and help students take responsibility for their learning.

Finally, a major learning was that despite a potential lack of resources from schools, programs like Kids in Need Foundation (KINF) are available to provide supplies for free. In collaborating with administration, it is important to know what the budget is for any department. Through KINF, I was able to obtain all the items that were not in the budget for my department, such as: pencils, binders, notebooks, markers, paints, chart paper, bamboo sticks for the spaceship project, and jars for the science project.

Revisiting the Literature

My research was influenced most by authors who taught me new elements of PBL and how to best meet the needs of ELLs. Larmer & Mergendoller (2010) helped me to develop an authentic project structure. Because of the authors' experience as educators for the Buck Institute for Education, I trust the seven essentials they required for authentic PBL. The seven essentials include strategies for how to build and apply 21st century skills which will "serve [students] well in the workplace and life" (p. 36). The skills of collaboration, communication, critical thinking, and the use of technology not only prepare students for their futures, but also connect their learning to the real world. According to Larmer and Mergendoller (2010), student voice and choice are essential, and projects should be inquiry-based, personally meaningful, and engage students' minds.

Prior to this project, I didn't have a proper structure for beginning with a driving question to drive student inquiry. I learned through my research that when I start planning my projects, I should narrow down my thoughts and create a structured instructional plan, including elements from UbD such as Essential Questions and Enduring Understandings. Larmer and Mergendoller (2010) gave me the confidence to create and facilitate student creation of strong, personalized, and innovative projects in various subject areas. Additionally, Larmer and Mergendoller (2010) discussed that commitment to a PBL structure in the classroom should be long-term. While a teacher's first project might not be successful, through trial and error and a series of feedback, PBL becomes the most effective.

Bell (2010) connects to Larmer and Mergendoller's (2010) study by emphasizing the point of building 21st century skills. Bell (2010) also asserts that projects should

connect to real-world situations, which helps students to understand the learning and deepen their intrinsic motivation. She also discusses the outcomes of PBL, which are students taking responsibility for their own learning and becoming independent thinkers. This increase in independence and responsibility happens within a strongly structured PBL. The most important learning from the author was that PBL is not a supplement to curriculum: “it is the basis of the curriculum” (p. 39). If education is to be “student-centered,” I believe PBL should be the foundation of learning across all school systems. In addition, there is a constant influx of diverse populations, including newcomers to the country.

As newcomers to the country, students with low to intermediate ELP cannot access the content. Ramirez-Maldonado (2018) discusses how to build a strong foundation in literacy and language through SI (small group support for academic language development). SI provides a natural environment for ELLs to feel comfortable to learn. The idea of a safe and helpful learning environment for ELLs was the basis of the theoretical framework for this project. Ramirez-Maldonado (2018) describes this as a student-centered approach where ELLs can acquire higher abilities for deeper thought processes.

May (2018) connects to Ramirez-Maldonado’s (2018) ideas about the importance of small group instruction, especially for students with IEPs, 504s, and those who do not come from the dominant group. She states that these are “some of the groups that PBL can especially help accessing content” (p. 11). Ramirez-Maldonado and May influenced my research by helping me understand that ELLs with varying ELP can acquire English through scaffolded PBL. Finally, PBL content topics should be culturally relevant while

being integrated in both small group and mainstream settings in order to make the projects meaningful to students.

Limitations of Research

There were certain limitations to my research. First, I only worked with a Latinx population in grades five through seven. Other research covers various demographics and communities. Being an ELD Specialist, my research is specifically geared towards ELLs and teachers working with that population. What works for one ELL might not always work for another.

Moreover, each school system has their own set of values and priorities. The priorities of my district during my research were to stick to the current set of curriculum in the mainstream classrooms. There was not adequate time to fully implement PBL in the two mainstream classrooms in which I worked, due to having to teach my own pull-out groups as well. Many teachers observed the interview project I conducted with students, and were interested to incorporate similar projects in their math and special education classes. However, time was a big constraint, and I was the only ELD educator across two campuses. Even to explain or show examples to my interested colleagues, I felt overwhelmed. With more time, the process of PBL implementation could have improved my research. Related to time constraints, there was not adequate time to train teachers to further conduct authentic PBL on their own.

The final limitation of my research was that some students were in person, while others were online due to the global pandemic. Collaboration amongst students was often difficult due to device and connectivity issues. Virtual students could help with research, but they could not help with the hands-on components of the activities. At times, one

Chromebook was provided for the virtual learning of two siblings in one family. Virtual students also struggled to participate due to a lack of internet at home, or the inadequate amount of time provided for small groups (30 minutes). Even though we had strict policies about virtual participation, still some students were visibly disengaged from the classes.

Results and Benefits

The results of my project were that students learned the content and were interested to learn further through similar projects. The students could also transfer their learning and connect to real-world situations. Furthermore, teachers were satisfied to see how students were focused as they developed their own projects, leading to 100% student achievement.

The biggest benefit of my project was the opportunity to invite administrators and parents to the classroom to see how well the students collaborated and contributed effectively to create a final project. Not only did students feel recognized and their work appreciated, but the impact of the community's presence hopefully spread the appreciation for PBL more widely in the district.

This paper can benefit educators and research students who want to learn more about how to incorporate PBL in mainstream classrooms and pull-out settings. Teachers can read the projects that I have conducted to gain ideas for how to conduct projects in their own settings and content areas. Teachers can also gain deeper insight into making projects authentic and culturally relevant to their students.

Future Implications and Recommendations

Ramirez-Maldonado (2018) presents a significant question in his implications for future research. He asks: Is the mainstream classroom effective as a learning environment for ELLs? From my opinion of an ELD specialist, the answer would be that mainstream classrooms are currently not as effective as pull-out groups or SI environments for ELLs. In order to be effective, mainstream educators would need more training and practice to facilitate authentic and meaningful language learning in the mainstream classroom. Many schools are adopting SIOP strategies to train educators to be more effective in teaching ELLs across content areas, but there are no policies in place to establish PBL as a school-wide, state-wide, or nation-wide base. An ideal policy would be to have PBL as, as Larmer and Mergendoller (2010) stated, the basis of curriculum. I believe if this policy were enacted, it would immediately create higher student engagement, leading to higher achievement, across the board.

Another recommendation for future research would be whether and how PBL and SIOP can work hand in hand. Schools could provide professional development on PBL and/or SIOP for all school staff, including paras, SPED teachers, and reading interventionists. May (2018) recommends schools go directly through BIE. There are programs and regularly scheduled workshops available for teachers, coaches, and district partners that are conducted through PBL Works. A coming together of staff and administration to build a PBL curriculum according to state standards could lead to higher engagement, academic excellence, and student success.

One of my goals for the future is to develop a PBL curriculum to reach all students, specifically ELLs, in my school district, inviting other teachers to participate

with me. I can approach leadership team members and other professionals from my district with my research and curriculum plan in order to share my findings more broadly.

I hope to approve school or district-wide PBL training through BIE and PBL Works. My research and curriculum plan can leverage the implementation of PBL across various grade levels and content areas. After I assess students in the first quarter of the school year 2021-2022, I plan to approach the leadership team and other teachers to invite them for a presentation about my PBL curriculum and how it could be beneficial for increasing student engagement across content areas, gearing towards academic excellence across the district.

Summary

Chapter four covers the major new learnings about PBL as a teaching and learning method. It also revisits the most important research from the literature review, including the elements of PBL that made the biggest impact on me as an educator: I can now facilitate projects with confidence due to the project structures that Larmer & Mergendoller (2010), among others, provided. The most important component of facilitating projects successfully hands the responsibility of learning to the students (Bell, 2010). This is especially important to engage students such as ELLs who may have low motivation to learn. A final take-away was that I can support students who are struggling to access content through strategic, supported small groupings (Ramirez-Maldonado, 2018).

Chapter four also explains the limitations to my project, and the results and benefits of my research. Finally, the chapter discusses future implications and recommendations for future research. If I am successful in presenting my curriculum plan

to my colleagues and administration, my project will encourage educators to implement PBL across grade level and content areas. In the end, a significant spike will occur in student achievement.

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