ASSESSMENT ON PROJECT BASED LEARNING IMPLEMENTATION AT BERHAN INTERNATIONAL SCHOOL IN ADDIS ABABA CITY

ST. MARY`S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

A THESIS RESEARCH SUBMITTED TO THE GRADUATE SCHOOL OF ST. MARY`S UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR DEGREE OF MASTER IN PROJECT MANAGEMENT (MPM)

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ADDIS ABABA, ETHIOPIA

DECLARATION

I, the undersigned, declare that this Thesis Research entitled as "Assessment on Project Based Learning on Student`s Knowledge Implementation at Berhan International School in Addis Ababa City". I have undertaken the research thesis work independently with the guidance and support of the research supervisor. This study has not been submitted for any degree or diploma program in this or any other institution and that all sources of materials used for the thesis has been duly acknowledged.

Roman Jenato _____ _____

Name of student Signature Date

ADVISOR RECOMMENDATION

I, the advisor of this research thesis, hereby certify that I have closely advised the student while developing this study and read the thesis research entitled as "Assessment on Project Based Learning on Student`s Knowledge Implementation at Berhan International School in Addis Ababa City" prepared under my guidance. Therefore, I recommend the submission of this thesis paper as final approval and acceptance for the degree of Maters of Project Management of the postgraduate studies with the regulations of the university and meet the accepted standards with respect to originality and quality.

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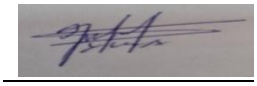
Yilkal Wasie (Assistant Professor) 

Supervisor Signature

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Date

ST.MARRY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

ASSESSMENT ON IMPLEMENTATION OF PROJECT BASED LEARNING ON STUDENT`S KNOWLEDGE AND SOFT SKILL DEVELOPMENT IN BERHAN INTERNATIONAL SCHOOL IN ADDIS ABABA CITY"

BY

ROMAN JENATO

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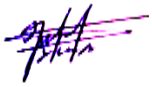
_____		_____
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LIST OF ACRONYMS AND ABBREVIATIONS

BIS	Berhan International School
ELA	English language arts
ELL	English Language Learner
ESL	English as a second language
FOI	Fidelity of implementation
GLAD	Guided language acquisition development
IRB	Institutional Review Board
NVivo	Non- Versioned Information, Versatile Outcomes

NA	not applicable
PBL	Project Based Learning

ABSTRACT

The study has investigated the Project based learning Implementation at Berhan International School in Addis Ababa city. The study aims in assessing the current status of PBL implementation, understanding the perspectives and experiences of teachers and administrators, identifying barriers to effective implementation, and proposing actionable recommendations to bridge the gap between intended and actual PBL practices at BIS. This study has used qualitative exploratory method to examines the nature of Project Based Learning (PBL) implementation at BIS in Addis Ababa City. Data were collected through participant interviews, classroom observations, and documentary sources to identify the critical components of PBL, with a focus on collaboration as a key element. NVivo version 14 software was used to analyzed themes throughout the data. The findings reveal that while there is a commitment to PBL at the school, there are omissions and adaptations in the implementation process. Recommendations include the need for targeted training programs that incorporate elements of andragogy and

PBL, as well as the evaluation of long-term impacts on teacher practice and student outcomes. The study contributes to the understanding of PBL implementation in educational settings and highlights the importance of ongoing professional development to support effective teaching practices. The study has provided insight into the activities that take place in classrooms, highlight the discrepancies between the intentions of curriculum designers and the actual practices of teachers, and inform administrators about the ways in which teachers are putting PBL instruction into practice.

Key words: Berhan International School, curriculum, Fidelity of implementation, and Project-based learning

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Current research on PBL implementation shows that the relevant instructors have used student-centered practices in higher education (Baysura, Altel, & Yusel-Toy, 2016; Kokotsaki, Menzies, & Wiggins, 2016) across various disciplines (Harmer & Stokes, 2016) and in the elementary to secondary education setting (MacMath, Sivia, & Britton, 2017). It is important to note that a significant number studies have been conducted about PBL in the higher education setting compared to the lower elementary setting, suggesting a gap in the literature (Merrit et al., 2017). However, PBL instruction has gained traction throughout the field of education due in part to the reported success that various teachers have had in using it to increase student achievement (Kokotsaki et al., 2016; Merrit et al., 2017; Namasivayam, Fouladi, & Chien Hwa, 2017). Aside from revealing its benefits, further attempts to use PBL in various settings have yielded valuable insight into the possible challenges to implementation (Herro & Quigley, 2017).

The growing popularity of PBL instruction has provided some inherent challenges to researchers. Reviews of the literature by Merrit et al. (2017), Kokotsaki et al. (2016), and Condliffe et al. (2017) have described the inconsistencies among researchers as they attempt to define PBL. These inconsistencies may suggest a need to identify the critical components of PBL as well as a more extensive analysis of acceptable adaptations.

Further research is needed to determine whether critical components differ depending on the discipline and age group of the students (Merrit et al., 2017). While there is not a universal consensus on any single definition of PBL within the literature (Merritt et al., 2017), the need for further study of the nature of PBL implementation is a significant recurring theme (Alexander et al., 2014; Alves et al., 2016; Harmer & Stokes, 2016; Kokotsaki et al., 2016). Beyond the general need to study PBL implementation, the findings of Kokotsaki et al. (2016) substantiated a need to explore FOI and teacher perceptions within the elementary setting. As previously mentioned,

both teachers and students have reported perceived benefits of PBL (Sahin & Top, 2015; Terrón-López, Velasco-Quintana, García-García, & Ocampo, 2017). However, a closer look at the FOI among PBL practitioners may justify long-term implementation (Dole et al., 2016)

PBL has gained traction among educators around the world because of the reputed benefits it can have toward student achievement and engagement (Sahin, & Top, 2015; Terrón-López et al., 2017). While some researchers argued that further study is required before long-term implementation is justified (Dole et al., 2016) the possible justification for PBL has been explored (Kokotsaki et al., 2016). Despite these and other possible benefits to students, teachers have had mixed reactions and varied success in implementing PBL (Condliffe et al., 2017). As student-centered learning environments like those provided by PBL strategies continue to develop in school districts around the world, understanding the perceptions of the teachers becomes even more necessary.

According to National Center for Education Statistics (NCES, 2017) reports on the concentration of public-school kids eligible for free or reduced-price lunches, 24% of all schools in the US serve a community with a high level of poverty. States have mandated that schools use instructional strategies, such as project-based learning (PBL), to advance excellence and equity in response to this national equity challenge (State of Hawaii Board of Education, 2017). Gaining further insight into the goal's administrators have for PBL could help identify obstacles that need to be removed before successful teacher buy-in to the program can occur. PBL teaching may not be being given to pupils by teachers (State of Hawaii Board of Education, 2017).

To ensure that the program finally achieves the objectives for which it was created, it is imperative to look at the fidelity of implementation (FOI) of PBL instruction in a school (Lendrum & Humphrey, 2012). High-impact interventions such as PBL programs go through stages of development and adoption that school leaders should evaluate if schools are going to avoid spending unnecessary resources engaging in ineffectual practices (Lendrum & Humphrey, 2012).

The key elements of PBL and the connections between them can be explained to educators, administrators, and other stakeholders through insight into PBL implementation. With the use of

projects, students can learn how to solve problems in the real world and develop their own self-directed learning style. This study aims to investigate implementation in order to show how intended practice and practical adaption relate to one another.

1.2 Statement of the problem

PBL implementation is impacted by school leadership and culture, as evidenced by studies by Ravitz (2010) and Zeiser, Taylor, Rickles, Garet, & Segeritz (2014). Condliffe et al. (2017) have highlighted the necessity to investigate the ways in which PBL implementation fidelity differs within a given local context related to culture.

When a PBL curriculum is created by an outside source or by a teacher, adjustments are made in both situations. Additional research is required to investigate the potential effects of adaptations on student learning, as stated by Condliffe et al. (2017).

Most of the study on implementation difficulties was concentrated in the most current literature reviews of PBL education (Condliffe et al., 2017). It appears that not enough research has been done on the modifications that instructors can make to planned PBL instruction. A thorough analysis of the literature reveals the need for additional study on real implementation at the elementary school level (Condliffe et al., 2017; Merrit, Lee, Rillero, & Kinach, 2017).

Despite the state offering PBL training to the teaching staff, teachers chose not to attend, leading to a lack of formal observations and evidence of PBL implementation. This gap in fidelity raises concerns about the effectiveness of the PBL program at BIS and the potential waste of resources on ineffective practices. The problem lies in the disconnect between the intended practice of PBL and its practical adaptation within the school setting, highlighting the need for a comprehensive investigation into the implementation of PBL at Berhan International School (BIS, 2022).

The absence of formal observations and limited evidence of PBL implementation at BIS indicate a significant challenge in ensuring that the program aligns with its intended goals. Without proper training and monitoring, teachers may struggle to incorporate essential components of PBL, such as collaboration and authenticity, into their instructional practices. This discrepancy between the intended and actual practice of PBL not only hinders student engagement and

learning but also raises questions about the school's capacity to effectively implement high-impact interventions like PBL. Thus, there is a pressing need to explore the factors contributing to the lack of fidelity in PBL implementation at Berhan International School. (BIS, 2022).

Moreover, the dearth of research on adaptations to planned PBL instruction further complicates the situation at BIS. While existing literature has focused on barriers to PBL implementation, there is a noticeable gap in understanding the specific adaptations that teachers may employ in their practice. This lack of insight into how teachers adapt PBL strategies to suit their unique classroom contexts underscores the importance of conducting a qualitative case study to shed light on the relationship between the intended practice of PBL and its practical implementation at Berhan International School. By delving into these adaptations, the study aims to provide valuable insights for teachers, administrators, and stakeholders to enhance the fidelity of PBL implementation and maximize its impact on student learning outcomes.

1.3 Research Questions

The following research questions focused on understanding what PBL instruction looks like in practice at BIS. These questions were developed to explore what gaps may exist between the intended use of PBL and the actual use of PBL in the classroom:

- **RQ1:** According to administrators, what is the intended use of PBL instruction in the curriculum at BIS?
- **RQ2:** What is the nature of PBL instruction in BIS classrooms?

I constructed the following sub questions to identify specifics of PBL use at BIS:

- ✓ **SQ1:** What do teachers report are the instructional critical components present in their PBL curriculum?
- ✓ **SQ2:** What do teachers report are the structural critical components present in their PBL instruction?
- ✓ **SQ3:** What critical components do teachers omit from their PBL curriculum?
- ✓ **SQ4:** What critical components do teachers omit from their PBL instruction?
- ✓ **SQ5:** What critical components exist in the classroom apart from what teachers report?

1.4 Research Objectives

1.4.1 General Objective

The general objective of the study aims to explore the perception of current project-based learning (PBL) implementation among teachers and administrators at Berhan International School, focusing on fidelity and adaptations.

1.4.2 Specific Objectives

The specific objectives of the study are;

- To investigate the administrators' perceived intentions for PBL instruction at BIS.
- To examine the nature of PBL implementation in classrooms as perceived by teachers at BIS.
- To identify critical components present, omitted, or added in PBL instruction at BIS.
- To assess any adaptations made by teachers in implementing PBL and explore potential discrepancies between intended and actual PBL practices at BIS.
- To provide insights that may contribute to social change by improving teacher training and the practice of PBL implementation in the school setting.

1.5 Scope of the study

The study specifically examines the nature of PBL implementation at an urban elementary school, with a focus on understanding how PBL is practiced, perceived, and adapted by teachers and administrators at Berhan International School in Addis Ababa city. The scope includes exploring the intentions behind PBL implementation and the actual practices observed in the school setting. The research methodology involves qualitative data collection through interviews and observations with seven participants, five of whom were observed. The scope of the study includes analyzing the perceptions, omissions, and adaptations of PBL critical components at the school to gain insights into the challenges and opportunities associated with PBL implementation. The study delves into the importance of training and professional development for teachers to enhance their capacity in implementing PBL effectively. The scope of the study

extends to the educational context, including the characteristics of the school, the demographics of the student population, and the experience levels of the educators. Understanding the specific context in which PBL is implemented is essential for interpreting the findings and recommendations of the study. The scope of the study also includes implications for future research in the field of PBL implementation and educational practices. By highlighting the need for further investigation into real implementation challenges and effective strategies for PBL adoption, the study sets the stage for future research endeavors aimed at improving educational outcomes through innovative teaching methods.

In summary, the scope of the study encompasses a qualitative exploration of PBL practices, recommendations for enhancing teacher training, considerations of the educational context, and implications for future research and educational initiatives in the field of project-based learning.

1.6 Significance of the study

The significance of the study lies in several key areas:

- **Educational Merits:** The research provides insights into how PBL can enhance student learning outcomes, knowledge acquisition, and soft skill development. By understanding the effects of PBL on students in a specific educational setting, educators can tailor their teaching methods to better support student growth and development.
- **Professional Development:** The study highlights the importance of ongoing teacher training and professional development in effectively implementing PBL. By identifying areas where teachers may need additional support or training, the study can inform future professional development initiatives aimed at enhancing teacher capacity and improving instructional practices.
- **Research Contribution:** The research adds to the existing body of knowledge on PBL implementation in educational settings, particularly in the context of urban elementary schools. By exploring the challenges and successes of PBL implementation at Berhan International School, the study contributes valuable insights that can inform future research on PBL effectiveness and best practices.

- **Social Change:** The study has the potential to promote positive social change by advocating for the adoption of effective teaching strategies, such as PBL, that can enhance student learning outcomes and prepare students for success in the 21st-century workforce. By emphasizing the importance of soft skills development alongside academic knowledge, the study aligns with broader goals of educational reform and improvement.
- **Future Directions:** The findings of the study can guide future research and educational initiatives aimed at improving PBL implementation and student outcomes. By identifying areas for improvement and suggesting alternative approaches, the study lays the groundwork for further exploration and innovation in the field of education and project-based learning.

Overall, the study on the implementation of PBL holds significance for educators, researchers, policymakers, and stakeholders in the field of education by providing valuable insights, recommendations, and implications for enhancing student learning experiences and outcomes

1.7 Organization of the Study

This Thesis research is organized into five chapters. The first chapter is the introduction part which contains; the background of the study, a statement of the problem, the background of the organization, research questions, and objective of the study, significance of the study, the scope, and limitation of the study. The second chapter mainly focuses on existing literature which includes conceptual and theoretical framework review. The third chapter discussed the methodology of the study. It includes research design, research methods, as well as data collection instruments, and data analysis techniques. The fourth chapter discussed about Data analysis and Discussion. The last chapter discussed the conclusion, recommendation, and future works.

CHAPTER TWO

LITERATURE REVIEW

2.1 Review of theoretical literature

2.1.1 Concept of education in Africa

It has never been argued that education plays a crucial role in development. Indeed, the founding of schools has always been regarded as the first step toward the development of a country or a people. In the past, the prerequisites for starting along the path of self-improvement were the ability to read and write. The ability to read was essential for gaining access to further information and knowledge. One could actively engage in development processes and initiatives if they could write. Early on in a person's life, as well as the growth of a nation, basic education was considered to be absolutely necessary. This had never been disputed. In the early years of African independence, many presidents of new nations adopted the FFPE (Full Free Primary Education) strategy to education, e.g. Hastings Banda of Malawi, Azikiwe of Nigeria, Kaunda of Zambia.

2.1.2 Education in Ethiopia

According to Alemayehu Bishaw's book from 2012, one of the biggest obstacles to educational advancement is a poor economy, even though an educated labor force is essential to Ethiopia's economic success. Thankfully, the Ethiopian government recognizes the importance of education and is currently investing a substantial sum of money to support its advancement at all levels. Ethiopian colleges are encouraging students to pursue degrees in science, technology, engineering, and math (STEM) because they understand the need for workers in the 21st century with these kinds of skills.

Research indicates that the idea of problem resolution was brought to Ethiopia during the overthrow of the Dergue rule by the EPRDF. By emphasizing a pragmatic approach and valuing

education in terms of simply fixing urgent problems, the EPRDF eliminated the previous idea of "education for education purpose" (Areaya, 2008). Essentially, though, this idea is not the focus of the educational system. It is stifled by outdated epistemologies that emphasize rote learning and exam preparation above personal development and a higher quality of life. Pragmatists view teachers as facilitators rather than dictators. Field visits, inquiry-based learning, experiential learning, and problem-solving techniques are the modes of instruction. Both individual and social learning occurs. Imitation and rote memorizing are absent. However, this idea isn't actually present in schools; a big part of the problem is the lack of conducive learning environments in general and spacious classrooms in particular. According to the researchers' observations, students' lack of responsibility for their own learning and inadequate participation in the learning process are other reasons for this (AwekeShishigu, 2015).

It is understood that the history of foreign involvement in Ethiopia's history, particularly in the area of education - where curricular decisions, selection of instructional languages, and cultural considerations - have shaped the evolution of education in Ethiopia. As a result, even though foreign aid and investment are expected to play a significant role in Ethiopian education, those creating the system are strongly encouraged to concentrate on meeting the needs of the Ethiopian people and equipping them with the knowledge and abilities needed to succeed not only in the political and cultural context of East Africa but also in preparing Ethiopians to become world citizens and African Nebula, Issue 5, 2012, citizens capable of participating in a global marketplace of ideas and commerce. Ethiopia's educational system must therefore be both culturally relevant and adaptable/responsive. When Local Non-Governmental Organizations (LNGO) and International Nongovernmental Organizations (INGO) collaborate well, this can be achieved (O'Sullivan, 2006). Ethiopia has to make significant investments in the development of its teachers. A system of education is only as good as its instructors. The failure to develop and sustain instructional capacity is one of the effects of a fast-growing educational purpose. Ethiopia lacks access to high-quality continuing education and teacher preparation programs (Hoot, Szente, and Tadesse, 2006). Therefore, it is advised that teacher preparation be given top attention, particularly when implementing novel teaching strategies and curriculum.

2.1.3 Traditional VS Modern Education in Ethiopia

The foundation of Ethiopian Christian education is idealism. The transmission of cultural heritage and the training of future priests are the two main goals of education. Students look up to teachers as role models, and speaking is how they impart knowledge. The provision of discipline, order, self-control, and wisdom of kindness to pupils is a significant aspect of church education in Ethiopia. Education in Ethiopian churches was entirely idealistic. But this idea is not exclusive to religious education; it also applies to contemporary education, which was founded in 1908. This impact has increased in our educational system, where tests are administered to students to make sure they meet the necessary standards. Students are required to read, memorize, and mimic in order to pass the exam, which is really the school's job. A few years ago, memorizing was emphasized at even our institutions, and the goal was for pupils to pass the test. There is no distinction between religious schools and the dictatorial role that teachers play in our schools today, nor the requirement that students behave passively. The process of passing down information from one generation to the next was seen as education. The agents of education were considered to be teachers who impart knowledge, and learners who have little roles in the process. Generally, knowledge was considered sacred and unchanging and thus to be learned as it is. This wrong concept of epistemology affects the pedagogy which emphasized rote learning and memorization which was the main methodology in the church school also. This problem was spread into the modern system of education to have developed into common and persistent constraint of the process of teaching and learning.

The concept of religious education is the only aspect of contemporary education, which was introduced in 1908. For an extended length of time, rote memorization as a concept and philosophical underpinning of education has been strongly exhibited in Ethiopia's contemporary classrooms. The content and goals of education, however, are determined by the political ideologies of the ruling monarchs. For example, under the Dergue regime, socialist ideology and the Marxist-Leninist school of thought were promoted, and the goal of education was to fortify students' military capabilities and provide them with socialist ideology. Implications and Insight into the Future Currently the educational system is criticized of quality. Lack of a supportive environment in general and huge classrooms in particular are major contributing reasons to the

decline, even if there are many other variables as well. This is due to the impossibility of collaborative work and the policy's required concept of active learning in such circumstances.

Given the economic status of the nation, it is evident that Ethiopian students aspire to overcome their poverty and subsequently assist their impoverished parents. However, unemployment casts graduates in despair and prompts them to leave their home nations in search of new employment opportunities, a phenomenon known as "brain drain." Thus, learning must lead to immediate value hence unemployment should be resolved. Find job opportunity outside the country officially as of many other countries if all jobs are assumed to be saturated inside the country through. Another solution might be producing flexible curriculum that serves the needs of all students that helps develop the higher-level skills, by including native language as a medium of instruction at all levels of education. Negash (2006) stated as follows to mention the importance of language in Ethiopian education system, "modernization through westernization is a project doomed to failure and it results loss of identity"

The ideas of postmodernism and modernism have a significant influence on curriculum design in education, with far-reaching effects (Dennis, 2002). Thus, understanding modernism and post-modernism clearly is crucial while discussing curricular analysis in the modern day. As was previously mentioned, Ethiopian education has historically transitioned from traditional to modern, and because modernism is currently on the decline, I think it is time to move the system toward post-modernism. Ethiopian modernism has left all stakeholders with a heavy burden of discontent, including instructors and pupils, as well as bureaucratic rigidity and resistance to change. Some of features of modernity are: inflexible decision-making, unmanageable structures, linear planning, unresponsiveness to changing societal needs, loss of meaningful senses of community (Hargreaves, 1994). He stresses that modernity is not only problematic but is in a crisis state.

Post-modernism, on the other hand, is eclectic in nature and emphasized the importance of creating and selecting above obeying rules and following orders. As a result, it's critical to carefully select and blend traditions—that is, to choose those elements of the past and present that continue to seem most pertinent. According to Dennis (2002), there is no way to predict with

any degree of accuracy what the educational needs of the population of the twenty-first century will be, because change happens exponentially.

Therefore, the postmodernist perspective holds that the curriculum's goals, objectives, methodology, content, evaluation, and direction are all flexible rather than set. Evaluation in a modernist curriculum is essentially done to identify winners and losers. Post-modern curricula, on the other hand, lack an idealized standard and a universally applicable principle. While still having a major influence, the instructor would not be the only one conducting the evaluations; rather, they would be participatory and collaborative. It would serve as feedback, assisting students in the development of their social and intellectual capacities through discussion and helpful criticism (Doll, 1993, cited in Dennis, 2002). However, the successful execution of the curriculum necessitates highly skilled personnel who are self-assured, resourceful, and prepared to take on difficulties.

The characteristics of a post-modern curriculum are as follows: it is process-oriented rather than solely product-oriented, it emphasizes the development of higher order thinking abilities and encourages creativity, and it views the teacher as a facilitator rather than the authority figure in the classroom, assisting students in creating knowledge. Knowledge is not only something that is imparted; it also needs to promote self-organization and not be prescribed or system-driven (Shishigu Aweke, 2015).

2.2 Over view of Project based learning (PBL)

The progressive education movement, which supported more experiential and student-centered teaching methods that promote "deeper learning"1 by involving students in the active investigation of issues and challenges found in the real world, is the source of PBL (Pellegrino and Hilton, 2012; Peterson, 2012). The "project method," created by William Heard Kilpatrick and recognized as the first formalization of a PBL model, was influenced by the ideas of John Dewey (Peterson, 2012). As "an activity undertaken by students that really interested them," Kilpatrick believed that this was the secret to the "project method" (Ravitch, 2000, p. 179). In the progressive education movement, Kilpatrick's theories were widely shared among educators, although they have subsequently undergone substantial revisions. Significantly, proponents of

the notion that students should acquire particular subject-matter knowledge in conventional subject areas have traditionally opposed and criticized PBL and other student-centered and inquiry-based approaches (Kirschner, Sweller, and Clark, 2006; Loveless, 2013; Peterson, 2012; Ravitch, 2000). Yet PBL and other teaching strategies that prioritize deeper learning and the acquisition of competencies necessary for success in postsecondary education, the workforce, and civic life have grown in popularity (Huberman, Bitter, Anthony, and O'Day, 2014; Scardamalia, Bransford, Kozma, and Quellmalz, 2012).

PBL and other deeper learning methodologies have gained popularity among proponents and practitioners of education reform for a variety of reasons, especially in the past ten years. First, even after decades of change, low-income students continue to have poor postsecondary outcomes after graduating from high school (Bailey and Dynarski, 2011). A significant portion of high school graduates who enter in college do not pass the placement examinations in mathematics and English/language arts, forcing them to take remedial coursework before they can be considered "college ready." Remedial courses are taken by an estimated 60% of community college students (Bailey, Jeong, and Cho, 2010). Because of this trend, students from low-income and academically underprepared backgrounds have a poor completion rate in postsecondary education. According to Barbara Condliffe (2017), less than half of students who enroll in public two-year institutions complete their studies and either transfer to a four-year university or receive a certification.

Henceforth referred to as PBL, Problem-Based Learning is a methodological approach to education in which students use whatever resources they believe would be helpful to solve issues of various degrees of difficulty (sometimes based on real instances). There is nothing new to the idea of problem-based learning. In the early 1970s, it was first formally used by faculty in medical schools that were dissatisfied with the quality of students‟ professional preparation. The pioneers of PBL in medicine, Barrows and Tamblyn (1980), define the approach as “the learning that results from the process of working toward an understanding or resolution of a problem”. The authors attribute PBL's first application to the sciences to the teaching program developed by the School of Medicine at McMaster University in Canada in the 1960s and 1970s, despite the fact that PBL originated in the training provided to those preparing for legal practice in the

English-speaking world (and not medicine, as widely believed). Since then, a variety of professional education programs, such as those in engineering and architecture, have been created in response to the need for PBL. The key components of the McMaster program have not changed, despite significant deviations from the original concept in these versions.

2.3 Project-Based Learning Implementation

Current studies on PBL implementation indicate that pertinent educators have implemented student-centered practices in a range of educational contexts, such as higher education (Baysura, Altel, & Yusel-Toy, 2016; Kokotsaki, Menzies, & Wiggins, 2016), elementary to secondary education (MacMath, Sivia, & Britton, 2017), and across disciplines (Harmer & Stokes, 2016). As noted by Merrit et al. (2017), there is a deficiency in the corpus of literature because a larger percentage of PBL research has been conducted in higher education settings than in lower elementary settings. Nevertheless, PBL instruction has become more popular in the field of education because of the teachers who have used it to report higher student achievement (Kokotsaki et al., 2016; Merrit et al., 2017; Namasivayam, Fouladi, & Chien Hwa, 2017). More attempts to apply PBL in many contexts have not only shown its advantages but also provided insightful information about potential implementation difficulties (Herro & Quigley, 2017).

Researchers face several inherent obstacles when PBL instruction gains mainstream. The inconsistent efforts by researchers to characterize PBL have been documented in reviews of the literature by Merrit et al. (2017), Kokotsaki et al. (2016), and Condliffe et al. (2017). These discrepancies can indicate that a more thorough examination of appropriate modifications is required, in addition to determining the essential elements of PBL.

More investigation is required to find out if crucial elements vary based on the kids' age group and discipline (Merrit et al., 2017). Although there isn't a single, accepted definition of PBL in the literature (Merritt et al., 2017), there is a strong trend in the literature that more research is needed to understand the nature of PBL implementation (Alexander et al., 2014; Alves et al., 2016; Harmer & Stokes, 2016; Kokotsaki et al., 2016). In addition to the overall necessity of researching PBL implementation, Kokotsaki et al. (2016) found that investigating FOI and teacher perceptions in an elementary school context was necessary. Perceived benefits of PBL

have been reported by instructors and students, as previously indicated (Sahin & Top, 2015; Terrón-López, Velasco-Quintana, García-García, & Ocampo, 2017). However, a closer look at the FOI among PBL practitioners may justify long-term implementation (Dole et al., 2016).

2.3.1 Benefits

PBL has gained popularity among educators globally because of its alleged benefits for student involvement and accomplishment (Sahin & Top, 2015; Terrón-López et al., 2017). While Kokotsaki et al. (2016) looked into the possible case for PBL, some scholars have suggested that more research is needed before long-term deployment is required (Dole et al., 2016). Despite these and other possible advantages for students, teachers' reactions to and experiences with PBL implementations have been uneven (Condliffe et al., 2017). As student-centered learning environments like those provided by PBL strategies continue to develop in school districts around the world, understanding the perceptions of the teachers becomes even more necessary.

PBL-accomplished teachers have found that this method is helpful in increasing student involvement without compromising rigor (Dole et al., 2016). High school teachers discovered that implementing PBL helps their pupils build 21st-century abilities (Sahin, & Top, 2015).

The use of PBL has been shown to yield significant gains in academic achievement (Sahin & Top, 2015). In addition to the apparent benefits of project-based learning, there have also been notable implementation challenges that have been noted. Difficulties Integration issues were found in recent evaluations of PBL implementation (Alves et al., 2016; Herro & Quigley, 2017). In the case of Alves et al. (2016), teachers employed a PBL approach with students in an engineering university. These students reportedly experienced increased levels of engagement and collaboration with peers. Nevertheless, difficulties emerged when the instructors tried to incorporate math (Alves at al., 2016). Additionally, instructors found it difficult to provide enough assessment in a PBL environment (Alves et al., 2016).

The opinions of teachers were assessed by Herro and Quigley (2017) both before and after they received training in using a PBL method. Numerous educators mentioned the importance of incorporating the humanities and arts into the training process (Herro & Quigley, 2017). The arts and humanities were difficult to integrate in their PBL context because of this lack of expertise.

In the study I'll be doing, I'll look at how teachers see their own training in a framework that supports PBL instruction.

2.3.2 Perception

Research on teachers' perspectives in secondary and higher education settings has been the main focus of studies, but there is a need to investigate PBL implementation in an elementary school environment as well (MacMath et al., 2017). The study also emphasizes how important it is to investigate PBL implementation with a group of children that have exceptional needs (MacMath et al., 2017). Research on preservice teachers' perspectives of PBL implementation is necessary, as indicated by studies conducted by Oliveira, Fischer, and Fernando Parisoto (2015). Nonetheless, a number of discoveries were made in research that did analyze instructor perceptions.

Instructors emphasize the value of training prior to implementation because implementing a PBL method can be difficult in a few different ways (Baysura et al., 2016; Herro & Quigley, 2017; Ong et al., 2016). According to findings from other studies (Márquez & Jiménez-Rodrigo, 2014; Terrón-López et al., 2017), teachers who had success implementing PBL were more inclined to stick with it. According to Kokotsaki et al. (2016), the bulk of research on PBL implementation looked at environments other than elementary schools. Thus, there is still a need to learn more about how teachers view the use of PBL in elementary education.

Numerous research in the literature discuss how PBL training causes changes in students' views. In a number of instances, the pupils' self-efficacy has increased. According to Bandura (1995), self-efficacy rises with mastery, but this rise is usually limited to the skill or competency that the person has acquired. Consequently, it is important to highlight the particular competencies or subject areas where researchers have discovered a rise in groups in a PBL setting. In one study, the effectiveness of students' perceptions of their ability to work in small groups was examined. In a different study, Horak and Galluzo (2017) discovered that gifted students in PBL classrooms had a more positive opinion of the quality of the classroom. Though much of the literature reveals favorable increases in perception among students in PBL classrooms of various subjects and across grade levels, some studies show mixed results. In a study on student perceptions of

PBL, researchers found that some students disliked the PBL approach (Wijnen et al., 2017). In this study, law students felt that the PBL classroom environment did not sufficiently prepare them to practice law (Wijnen et al., 2017). Other higher education students reported having a positive experience with PBL but feeling that it was somewhat unstructured (Blackwell & Roseth, 2018).

The study's findings may support those of other research that contend that, although PBL fosters higher-order thinking abilities and teamwork, it does not guarantee that students have a comprehensive understanding of the subject matter in comparison to traditional learning environments (Schauber, Hecht, Nouns, Kuhlmey, & Dettmer, 2015).

2.4 Project-Based Learning Instruction

PBL is a teaching strategy that is regularly described in the literature by a number of unique characteristics. PBL instruction is largely a student-centered method among these characteristics. Regardless of the subject matter or student's educational background, every study on the subject demonstrates the student-centered character of PBL. PBL training is contrasted with more conventional approaches in a number of studies (Firdaus, Wahyudin, & Herman, 2017; Schauber et al., 2015; Seyhan, 2016; Wynn, Mosholder, & Larsen, 2016). According to the results of these studies, PBL instruction outperforms traditional approaches in terms of raising student motivation, engagement, depth of understanding, sense of self-efficacy, and achievement (Firdauset al., 2017; Schauber et al., 2015; Seyhan, 2016; Wynn et al., 2016). It is worth noting that of these comparative studies, only one focused on a group of students at a level lower than the collegiate level (Firdaus et al., 2017). The remainder of comparative studies between PBL and traditional instruction focused on university students in the fields of science or history (Schauber et al., 2015; Seyhan, 2016; Wynn et al., 2016).

Most of the literature about PBL instruction analyzes groups studying science, history, economics, and mathematics introducing students to an essential complex question (Abdelkarim, Schween, & Ford, 2016; Ajai, & Imoko, 2015; Argaw, Haile, Ayalew, & Kuma, 2017; Asunda, & Weitlauf, 2018; Bicer, Boedeker, Capraro, & Capraro, 2015; Yukhymenko, Brown, Lawless, Brodowinska, & Mullin, 2014; De Witte, & Rogge, 2016; Firdaus et al., 2017; Khumsikiew,

Donsamak, & Saeteaw, 2015; Minarni & Napitupulu, 2017; Ruiz-Gallardo, González-Geraldo, & Castaño, 2016; Sari, Alici, & Sen, 2018; Yukhymenko, Brown, Lawless, & Mohamed, 2015). Students in these contexts are required to collaborate by researching possible solutions to the question or problem posed at the start of the instructional unit. The more rigorous semiauthentic problems that students investigate offer more opportunity for critical thinking than typical direct instruction would (Firdaus et al., 2017; Schauber et al., 2015; Seyhan, 2016; Wynn et al., 2016). Students are required to provide a presentation of their research findings to an audience at the conclusion of each teaching course. In order to showcase their effort, students typically include a product in presentations.

2.5 Project-Based Learning Curriculum

While examining the PBL program's contexts, Schauber et al. (2015) identified a number of key differences from a more conventional curriculum. In addition to being focused on a single subject area, a PBL curriculum typically includes interdisciplinary courses. The literature (Condliffe et al., 2017; Schauber et al., 2015; Wijnen et al., 2017) records an additional emphasis on teaching soft skills in PBL curricula rather than rigidly adhering to a concentration on hard results or content knowledge. Think critically, work well with others, and communicate are examples of soft talents. Many times, referred to as 21st-century abilities, these soft skills are not specific to any one subject and are essential in most employment environments (Chua, Tan, & Liu, 2016; Meyer & Wurdinger, 2016).

A focus of PBL curriculum on skills and applied knowledge to problem-solving instead of a broad base of knowledge in a specific content area make PBL distinct from the traditional curriculum (Schauber et al., 2015; Wijnen et al., 2017). In an overwhelming majority of the literature on PBL, students were taught skills that enable them to work in small group settings (Condliffe et al., 2017; Golightly, 2018; Kokotsakiet al., 2016). This blend of collaborative skills, higher-order thinking skills, and integrated content knowledge characterizes the PBL curriculum (Minarni & Napitupulu, 2017).

2.5.1 Adaptation

It becomes necessary to comprehend the appropriate modifications in any study examining the FOI of a program or treatment (Century et al., 2010). Regarding PBL implementation, research indicates that in order to practice PBL faithfully, it is necessary to investigate the connection between permitted changes and essential components (Cook & Weaver, 2015). The idea that there is disagreement about the definition of PBL is further supported by research (Meritt et al., 2017). This study examined the nature of project-based learning (PBL) implementation in an elementary school context, considering both acceptable and unacceptable adaptations.

2.5.2 Teacher Problem-Based Learning Instruction

A recurring topic in the literature is teacher education. The ideal ways for instructors to employ PBL with preservice teachers and the prerequisites that preservice teachers might need to meet before beginning PBL are both illuminated by recent studies. Preservice teachers need PBL classroom management training, according to research published in an article about teacher candidates' use of PBL (Baysura et al., 2016).

Teacher candidates, however, were found to have a generally positive opinion of the PBL approach, in line with earlier studies (Baysura et al., 2016; Mohamed, 2015). Negative feedback included critiques on the time that PBL requires in comparison to traditional methods as well as a prevailing school culture that is more accustomed to the traditional approach (Mohamed, 2015; Ruiz-Gallardo et al., 2016). Apart from the workload for students being of interest, the study of the actual time spent on different tasks during a PBL unit found that PBL has a significant effect on the attendance and overall engagement of students (Ruiz-Gallardo et al., 2016).

Researchers discovered that PBL was more successful in helping students transfer their knowledge and skills to other disciplines than it was in helping them memorize what they had studied (Bergstrom, Pugh, Phillips, & Machlev, 2016). This finding was made while educating future teachers. Examining PBL's collaborative nature during implementation showed that it changed how preservice teachers and instructors evaluated their connections with each other (Wynn & Okie, 2017). It is important to remember, nevertheless, that there have been both positive and bad findings in PBL research. Kokotsaki et al. (2016) conducted a literature

evaluation and found that there is insufficient evidence to establish a clear causal relationship between PBL and improved student outcomes.

The literature indicates that there is a need for implementation fidelity and instruments to measure PBL practice. A growing body of research has addressed this need. For example, one study (Chua et al., 2016) discussed the need for instrument validation for PBL among teacher candidates. Among these new instruments are suggestions for specific measures of implementation. Zhang, Ridgway, & Sachs (2015) proposed a new framework for implementing PBL and used it in a preservice teacher class. Technology use in PBL classrooms for preservice teachers presents unique challenges, though implementation is advised (Lee, Jane, & Cavanaugh, 2015).

2.5.3 Problem-Based Learning Science Curriculum

The results and circumstances of PBL implementation in science courses were the focus of around one-third of the literature on PBL curriculum. Asunda & Weitlauf, 2018; Bicer et al., 2015; Han, Capraro, & Capraro, 2015; Han, Capraro, & Capraro, 2016; Sari et al., 2018; Ralph, 2015) were among the publications that discussed the perspectives of students enrolled in STEM courses. Researchers talked about PBL education in biology and postsecondary medical classes in other non-STEM related studies (Chan et al., 2015; Jin, & Bridges 2016; Mumtaz, Latif, 2017; Skinner, Braunack-Mayer, & Winning, 2015; Yan, Ma, Zhu, & Zhang, 2017). Engineering students were another class that was looked at in the literature (Lutsenko, 2018; Terrón-López et al., 2017). Though STEM research does not entirely overlap with PBL research, the two topics share an emphasis on student-centered instruction and curriculum. In specific settings, the findings of the overlapping research help provide a complete understanding of the outcomes and conditions of PBL STEM instruction. In one study, researchers discussed an apparent shortage of qualified STEM teachers compared with the number of students interested in STEM-related careers (Asunda & Weitlauf, 2018). According to PBL STEM study, children in particular types of schools have a greater interest in STEM-related occupations (Asunda & Weilauf, 2018; Ralph, 2015; Sari et al., 2018). STEM PBL research shows benefits for students who normally have low academic accomplishment when compared to the growth of their higher-achieving peers, in addition to offering more insight into how students' attitudes are changing (Han et al., 2015).

Findings from a related study by Han et al. (2016) indicate that STEM PBL might be advantageous for students from a variety of linguistic and cultural backgrounds. Students' development of STEM vocabulary may also benefit from STEM PBL (Bicer et al., 2015). The curricular and instructional aspects of PBL as an instructional strategy are uniquely revealed by the STEM PBL study.

PBL science instruction is present in the literature via reports concerning postsecondary medical learning environments. In most of the studies on PBL implementation among dental or medical students, researchers examined either the perception of students and teachers or the efficacy of the approach (Abdelkarim et al., 2016; Abercrombie, Parkes, & McCarty, 2015; Khumsikiew et al., 2015; Skinner et al., 2015; Yan et al., 2017; Yu, Lin, Ho, & Wang, 2015). In one study, researchers sought to explore the scope for potential research in a region that is relatively new to PBL (Servant & Dewar, 2015). In all of these articles, researchers have reported valuable insight into the nature of PBL implementation in a postsecondary medical learning environment.

Reports of positive results from PBL implementation among medical and dental students have suggested that some competencies can be taught successfully using PBL (Khumsikiew et al., 2015; Yan et al., 2017; Yu et al., 2015). Whether the outcomes of PBL implementation were positive or negative among postsecondary medical programs, the analysis revealed several factors as contributing to increased learning. For example, one study suggests that student motivation is key to successful outcomes in a PBL setting (Abercrombie et al., 2015). Skinner et al. (2015) reported that an active attempt at PBL may require more work with students on shaping their epistemological understanding of learning. Findings suggested that helping students understand the nature of learning through discussion and small group collaboration may allow them to experience more success in a PBL environment.

Much of the literature on the PBL implementation in postsecondary engineering courses reveal the benefits of the instructional approach toward preparing students for engineering careers (Lutsenko, 2018; Roach, Tilley, & Mitchell, 2018; Servant & Dewar, 2015). PBL engineering courses have been found to support students' collaboration, communication, and self-directed

learner skills in a discipline that typically focuses on developing technical skills (Seman, Hausmann, & Bezerra, 2018; Roach et al., 2018).

Authors of one study found that the authenticity of the problems and projects help prepare students for engineering careers (Roach et al., 2018). They suggested that undergraduate students benefit from coursework that grows increasingly similar to real world engineering (Roach et al., 2018).

2.6 Conceptual Framework

The FOI conceptual framework as outlined by Century et al. (2010) served as the main foundation for this investigation. This framework allowed researchers to assess the effectiveness of a program or intervention, which made it the most suitable choice for this particular study. It also sheds light on how it is being implemented. This framework allows for a relevant and accurate analysis of a particular intervention while taking implementation adjustments into account, which is one of the strongest arguments for selecting it for the proposed study.

Dane and Schneider's (1998) work is the source of FOI as it exists today. Dane and Schneider employed the examination of program integrity along five dimensions—adherence, exposure, participant reactivity, quality of delivery, and differentiation—in their groundbreaking work. According to Century et al. (2010), the FOI framework is a combination of Dane and Schneider's dimensional approach, the critical components approach, and the structure and process approach of Ruiz-Primo (2005). In its current iteration, the FOI framework of Century et al. (2010) allowed for a more specific analysis of an organization's program implementation.

This framework's main constructs are (a) innovation configurations, (b) instructional critical components, and (c) structural critical components. According to Century et al. (2010), structural components fall into two distinct categories: procedural and educational. Critical structural-procedural elements are those that tell teachers what has to be done, emphasizing the actions that are required to enable users to carry out a program in accordance with the designer's intention. Components that are structurally educational are frequently those that come with integrated training and professional development (PD). These are elements predicated on the idea that a teacher needs to possess particular knowledge in order to carry out the program successfully.

Pedagogical and student engagement are two categories of instructional components. Instructional-pedagogical components refer to the behaviors and strategies that program designers intend for teachers to use while enacting the program. Instructional-student engagement critical components are those behaviors that the students are expected to adopt while participating in the program. Innovation configurations refer to the combinations of critical components that are present within a particular context (Century et al., 2010). In other words, innovation configurations describe the adaptations that teachers may make when implementing the intervention implementation according to responses from teachers and administrators as well as an analysis of the guiding materials the teachers are supposed to use to design their PBL units. The framework was instructive in documenting the innovation configurations that teachers employ during actual implementation.

This construct was crucial to the study because it made it possible to examine the interactions between the important components in greater depth. Offerdahl, McConnel, and Boyer's (2018) analysis, which examined the nature of formative assessment, is one of the more recent uses of FOI. The prior findings about formative assessment could be erroneous because of potential irregularities in the way practitioners have used formative assessments. The researchers use the structure and process construct of FOI to identify the essential elements of formative assessment based on the available literature. The writers also go over potential modifications and inventive arrangements. The discussion of these variations in implementation provides insight into how the effect size of formative assessment can vary depending on the FOI (Offerdahl et al. 2018).

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

The present study has employed a research methodology that was covered in this chapter. Investigating whether or not BIS teachers are using PBL instructional strategies to support students in the classroom was the goal of this qualitative exploratory case study. Examining the perspectives and experiences of PBL practitioners, this qualitative study investigated the intricate nature of PBL implementation. As the field comprises of a wide variety of factors, the constructivist philosophical stance was useful for the study. This study will help further understanding of the complex relationships between instructional elements within the classroom environment. Participants were studied as separate cases, and they provided valuable insight into the similarities and differences among those practicing PBL.

3.2 Description of the study area

Berhan International School is one of the Secondary Schools located in the Kirkos zone, Wordea 8 in the Addis Ababa region of Ethiopia. Berhan International lists their ownership as Private. An urban community's BIS is home to preschool through fifth grade. It employs two administrators in addition to twenty-two teachers. Students with low to moderate incomes are served by the school. The 350 pupils include a large number of first- and second-generation immigrants in their ranks. BIS employs credentialed educators who meet the requirements of

their jobs. Their years of experience range from 4 to more than 20 years, and all but one has tenure (https://educationethiopia.org).

3.3 Research design

A survey research methodology is adopted in this research. Survey research provides a quantitative or numeric description of trends, attitudes, or opinions of a population by studying a sample of that population. It uses cross-sectional study using questionnaire and structured interviews for a collection with the intent of generalizing from a sample of population (Fowles, 2008). Therefor the research design used both quantitative and qualitative methods to analyze data collected through questionnaires and semi structured interview one; in which non-experimental design is used, survey.

The primary goal of this study is to investigate PBL implementation characteristics within the framework of BIS. Quantitative approaches would have been useful in examining how much PBL is implemented in schools, but it was unknown what contextual elements might influence implementation as well as the actual implementation. The current study was better suited for a qualitative approach because extensive data was required. Creswell & Creswell (2018) brought up the fact that qualitative research is inductive. The resulting broad themes were influenced by information on the perspectives of particular teachers, participant observations in the given environment, and an examination of planning documents.

3.4 Population and sampling technique

At the time of the survey, there were about 755 schools in Addis Ababa running from kindergarten through tertiary level, out of which 83 percent (627) were private schools. Except in zone six, private schools have been operational in all the zonal Administration of the city in privately owned residential villas. For this study I choose one of private school in Addis Ababa city specifically Berhan International School was my vicinity. I used the purposeful heterogeneity sampling technique to select the participants for this study. Heterogeneity sampling is a technique aligned to the tradition of qualitative exploratory research where the research question is focused on identifying the essential features of a phenomenon (Suri, 2011).

In this study I was considerate of participants' safety, rights, and the integrity of the line of inquiry. The research questions and focus of the research problem necessitated gaining access to the teachers and administration as the primary participants. BIS is a preschool to fifth grade school in an urban community. There are 22 teachers on staff there as well as two administrators. The school serves students from low- to middle-income families. Many of the 350 students come from first- and second-generation immigrant families. The teachers who serve at BIS are licensed and qualified for their assignments. With only one exception, they are all tenured with years of experience ranging from 4-20+.

There are currently two administrative faculty members and 22 teachers who are mandated to use PBL implementation. Not all of these individuals needed to be participants as a purposeful heterogeneity sampling technique was employed to determine the sample. For the greatest possible variety in cases, one teacher per grade level team was selected (Suri, 2011). In accord with Creswell and Creswell (2018), a purposeful sample size for a case study was seven, which included five teachers and two administrators. Based on the purpose of exploring PBL implementation among teachers throughout BIS, teachers from grades K, 2, 3, 4, and 5 contributed their experience of PBL to the study. As I am part of the Grade 1 instructional team, the study excluded Grade 1 teachers. I chose the sample size deliberately according to the recommendations set forth by Creswell and Creswell (2018). Inclusion criteria were as follows: (a) participants needed to be available for one classroom observation and a 60-minute interview, (b) they had to be at least 21-years-old, and (c) they needed to be a grade-level homeroom teacher in K, 2, 3, 4, or 5.

3.5 Sampling and Sampling Methods

Observation

Sensitive to cases that may be considered typical as well as those that may prove to be outliers, observations of PBL instruction within the context may be beneficial (Ravitch & Carl, 2016; Stake, 1995; Yin, 2018). This researcher made informants aware of the focus of the study and arranged a time that they thought would be optimal to observe PBL practices. Observing the teacher's behavior within the mediating context provided data that helped to address the research

questions. The study used fieldnotes and these observations to inform the interview questions. Specific questions were aimed at having the teacher explain the meaning of what was observed, thereby facilitating an accurate interpretation of the data.

Justification

Observations provided real-time, context-rich data that were necessary for addressing the research questions (Stake, 1995; Yin, 2018). In this study, the research questions asked about the immediate context of PBL implementation. Therefore, direct observation was a valuable source of data. Once triangulated adequately with data from other sources, observational fieldnotes proved to be valuable validation of insights (Ravitch & Carl, 2016).

3.6 Data Collection Instrumentation /Tools

Data collection instrumentation is often designed by researchers to fit the specific focus of the study at hand (Creswell & Creswell, 2018). The observation protocol was researcher-designed to focus on addressing the research questions posed in this study. The research questions highlight a need to observe the practices that teachers implement and those that they omit. Direct observation is a useful source of data for gaining insight into current and relevant phenomena (Yin, 2018).

The research questions that drove this inquiry could not be answered by using only archival data or historical documentation. As such, direct observation is both sufficient and necessary to capture the relevant behaviors of participants (Yin, 2018). Observation of specific practices in classrooms may also be able to capture what participants may not reveal through interviews alone (Yin, 2018). Data gathered through observations and interviews may be used to complement one another (Creswell & Creswell, 2018; Yin, 2018).

Recording Data

After arranging an appropriate time and place to observe PBL practices with the teacher, this researcher conducted direct observations of 45-90 minutes. While aiming to generate descriptive field notes, this study attempted to capture the events and environment with as few inferential

notes as possible. These were recorded on a document generated using Google docs and saved in a password-secured account. An observation protocol was used as a tool to record data on the behavior of the participants as well as reflexive notes (See Appendix).

Generating and gathering data

Observation protocol guided the notes taken based on the behaviors exhibited by teachers within the instructional setting (Creswell & Creswell, 2018). The protocol includes prompts to highlight the visible practices as well as any use of instructional materials. In addition to descriptions of the behaviors observed, the field notes included information about the physical layout of the space used for PBL instruction. Part of the checklist in the observation protocol required notes taken on the time used on certain practices during PBL lessons.

Interviews

Interviews of participants are necessary for understanding the meaning assigned by teachers to the practices they employ regarding PBL implementation (Ravitch & Carl, 2016). Following the classroom observation, a separate meeting with participants was used to conduct semi-structured interviews. By using semi-structured interviews, I was able to be responsive to the feedback that participants gave. Serving also as a time for debriefing teachers on what was observed, these teachers were also invited to explain certain behaviors and their relationship to the fidelity of PBL implementation within their classroom. Interviews provided an opportunity to gain potentially clarifying data. These interviews were audio recorded and transcribed using Nvivo as a means for accurate coding (Creswell & Creswell, 2018). The software was used to identify themes that emerge from interview transcripts.

3.7 Data Analysis

It was essential to employ a data analysis strategy that both aligned with the purpose of the study and lent credibility to the investigation (Yin, 2018). Yin (2018) advised several practices that facilitate the data analysis process: a) array and display data in different ways, b) watch for insightful patterns, c) address rival explanations and interpretations, and d) attend to all the evidence. By applying these critical practices to the data collection methods chosen for this study, I ensured the reliability of the interpretations found in the final analysis. I also applied the

broad steps that Creswell and Creswell (2018) advised about qualitative research: a) Organize and prepare all the data for analysis, b) Read or look at all the data, c) Start coding all of the data, d) generate a description and themes, and e) representing the description and themes. As data is collected, it was organized by type, participant identifier, and date. The resulting files were kept secure in a password protected computer drive to ensure participant privacy.

3.8. Source Of Instrumentation

Shorter interviews for use in case studies make it necessary for researchers to adhere somewhat strictly to an interview protocol (Yin, 2018). Adhering to the interview protocol adds consistency and focus to the interviews (Creswell & Creswell, 2018; Yin, 2018). There is a researcher-designed protocol for interviewing teachers that allowed for teachers to report on the critical components of PBL instruction present within their classrooms. The interviews were also an opportunity to debrief teachers about what was observed in their classrooms and gain insight into how they would inform this researcher's interpretation of those observations.

3.8.1 Analysis Strategy

Yin (2018) highlighted the need to have a strategy for analyzing the data before collecting any data. In order to ensure reliability throughout the study, the steps and procedures need to be recorded (Creswell & Creswell, 2018). Using the advice outlined by Yin (2018), as I collected the data, I formulated and answered smaller questions leading up to answering the main research questions. I worked progressively toward answering the main questions by resting the tentative conclusions of these smaller related questions on the evidence gathered. I displayed the evidence through a narrative of the analytical process so that readers may assess the reliability of the conclusions.

Using the observation protocol, I collected data from direct observations of any PBL implementation that occurred in the classrooms. During this time, I took field notes and recorded the date. I initially be organized these notes and observation records by date. As the data from the interviews, observations, and documents were collected and were ready for coding, I looked

for patterns and recurring concepts. As it helped organize concepts and patterns, I focused first on the data that was most relevant to the research questions.

As suggested by Creswell and Creswell (2018), when all the data from observations were collected, reviewed all of the field notes. First, I reviewed the notes for recurring mentions of specific practices that were present in multiple classrooms. I saw similarities and differences among the observed practices. The interview protocol included questions about the purpose of the practices mentioned in the field notes.

In addition to providing rich, thick descriptions of the settings I observed, I included positionality memos in order to clarify any bias I may have during the study (Creswell & Creswell, 2018; Yin, 2018). Creswell and Creswell (2018) asserted that qualitative research requires the researcher to make their assumptions, worldview, and any potential bias known. For the sake of validity and reliability, my positionality memos were collected as part of the data collection process and reviewed during the data analysis stage of the study.

3.9 Ethical Consideration

The study will adhere to ethical standards, including obtaining informed consent from participants. Confidentiality and anonymity will be maintained, and participants will be informed of their right to withdraw from the study at any time, following ethical guidelines proposed by .

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSION

4.1 Introduction

The purpose of this qualitative case study was to explore the nature of PBL instruction and curriculum at PIS, focusing on the gaps between the intended use of PBL and the actual practice at BIS. To fit the purpose of this study a purposeful sampling of the teaching staff and administrative staff served to determine a set of participants. One teacher from grades K, 2, 3, 4, and 5 were selected from among the 11 teachers who were invited to participate in the study. All of the participants met the criteria to take part in the study by being a homeroom teacher at BIS. Perception data was gathered from them through open-ended semi-structured interviews in addition to documentary data and classroom observation data.

4.2 Background Analysis (Demographic Data) of Respondent

This section presents a descriptive analysis of the personal profile of the respondent of Berhan International School in Addis Ababa city. The personal profile includes; years in education level,

years at BIS working place, and content area taught. Descriptive statistics was carried out on the demographic variables as a means of describing the respondents.

Table 4.2.1: Demographic Data of Participants

Participant Code	Years in Education	Years at BIS	Content area taught
A01	26	9	NA
A02	20	1	NA
01	30	27	ELA
02	27	8	ELA
03	6	5	Science
04	19	3	Science
05	14	14	Social Studies

Source: Own computation, (2024)

Before proceeding with the study, IRB reviewed and approved of the informed consent submitted. Both administrators and each teacher from grades K through 5(excluding 1st grade due to possible conflict of interest) was emailed an invitation to participate in the study. Those interested, emailed back requesting more information and received a softcopy of the consent form. Participants had to read and agreed to the terms described in the consent form before they were able to schedule an interview.

Two administrators met with me to be interviewed. The administrator interview protocol was used to conduct the semi-structured interviews about their perceived intentions regarding PBL as well as the nature of PBL at their school. Notes from these interviews were stored on a password-protected laptop along with the transcriptions from the subsequent recordings. Nvivo 14 was used to transcribe and code all the interview data for this study.

Preceding the interviews of the teaching staff, data were collected from classroom observations. Field notes included data about the instructor's behavior as well as the elements in the classroom environment. These data were also stored on a password protected laptop and analyzed using Nvivo 14. The following interviews were conducted using the teacher interview protocol and

discussed each teacher's perceptions of PBL, their practice of PBL, and their perceptions of what may have transpired during the classroom observation.

Building on the problem and research questions that focused the study, the meaning of the data provided insight into the nature of PBL at BIS. The problem addressed in this study was that teachers were not implementing PBL with fidelity. The research questions guiding this study were designed to explore the nature of PBL implementation at BIS. The questions were designed using Century et al. (2010) FOI conceptual framework. The framework served to enable the researcher to use qualitative data to identify critical components of an approach in order to determine the FOI.

Triangulated data from observations, interviews, and documentation were analyzed to explore the possible gaps between BIS' intended and actual practice of PBL. Member checks were also employed throughout the analysis process, as interviews were transcribed, in order to ensure the accuracy of the conclusions.

As the research questions were applied to the data, tentative conclusions to the sub-questions were formed. Themes and patterns began to emerge from the answers to the sub-questions as the data were coded to the research questions. All participants were asked about the critical components of PBL at BIS as well as the intentions of certain practices that were either observed or mentioned during the interview. Recurring concepts were recorded as themes during the data analysis process.

4.3 Implementation of Project-Based Learning Analysis

To explore the nature of PBL implementation at BIS it was necessary to identify what PBL, when implemented with fidelity, was intended to accomplish. The administrators expressed that PBL, when compared to more traditional teacher-centered approaches, would be more effective, engaging and efficient (See Table 4.2). Another theme in the interview data was that, according to administrators, PBL is particularly well suited to the particular demographics that make up the student body (see Table 4.3). This theme would also resonate later in the data collected from the teaching staff (see Table 4.6).

Related to this theme of PBL being most appropriate for the school's majority demographics, is the concept of accessibility. One administrator explained that the school's intention for PBL is to grant greater access and equity to populations of students who were traditionally underserved (see Table 4.4).

Administrators not only explained their reasons behind practicing PBL but provided information about their aspirations for how PBL ought to occur at BIS. They expressed that it was their intent for the school curriculum to be comprised of units designed in-house, standards-based, and vertically aligned among the different grade levels (see Table 4.3).

According to administrators, what is the intended use of PBL instruction in the curriculum?

Both administrators (A01, A02) indicated that PBL is meant to be more engaging and effective than more traditional approaches. Based on their reports, there are perceived gaps in how engaging the curriculum would be apart from PBL elements. The school administrators are also concerned with the transient population in the student body. These are students that either do not remain at the school for the duration of the year or enter school at a time other than the beginning of the year. It is the intent of BIS administrators to use PBL to teach integrated units of instruction for the sake of efficiency.

Table 4.2: Theme 1

Theme 1: Project-Based Learning is More Engaging, Efficient, and Effective Than Traditional Methods A 01

Gaps:- I think we started going in to PBL in one because we saw that there were gaps in our so-called mandated texts.

Engagement :- I think some of the mandated texts don't always have very engaging units for our kids in Hawaii and I think I could see where some of the teachers felt like it wasn't that exciting to teach these things.

Efficient :- So, the idea of trying to combine topics and disciplines like language arts and science into a unit or math and art and language arts into a unit was appealing to a lot of us in the school.

So, I think there was an appeal for, you know, just being more efficient in our teaching, but also being more engaging with what we're teaching, looking at what's around us, our environment, the people.

So, I think there was an appeal…but also being more engaging with what we're teaching…

Traditional Methods A 02

Gaps:- Yeah, I would say whereas traditional means you have a stated instructional method, whether it be worksheets or you do this book report or whatever it is. I think PBL allows more flexibility because some of the differentiation should be built in.

Engagement :- I would say that it is a structural approach that aims to break free of the traditional text book worksheet model and move towards more. An approach that's more interesting and more connected for kids.

Efficient :- We have some transient kids that come in and out. And so, it's a good way to incorporate a lot of different skills at one time.

Source: own computation, (2024)

The PBL practices are also intended to fill gaps in how effective the curriculum is in reaching the students in the high English language learner demographic. As was previously mentioned, A02 noted that transient students merit the use of PBL for its ability to allow teachers to address multiple skills in less time. PBL is also meant to benefit those students who come from households with low SES. Both administrators express that the PBL practice at BIS should, by definition, integrate scaffolds and differentiation that better meets the needs of ELL students.

Table 4.3: Theme 2

Theme 2: Project-Based Learning is Especially Effective for the Particular Students at Berhan International School

Participant A01

Transient :- We have some transient kids that come in and out. And so, it's a good way to incorporate a lot of different skills at one time.

Low SES :- I think the school feels that PBL is a good way to reach our specific population that we have here, including ELLs low socio-economic status kids.

ELL ;- I think the school feels that PBL is a good way to reach our specific population that we have here, including ELLs low socio-economic status kids.You don't have to learn a lot of English. You just have to have some passing knowledge and not everyone [needs to] be on the same reading level to participate in PBL. (***Source: own computation, (2024))***

Administrators' explanations of their intention for the way PBL is practiced at BIS included thoughts about how PBL can provide greater access. A01 conceives of PBL implementation in terms of what educators determine are the priority standards, based on what their students' needs are and scaffolding to meet those needs. Using the common core state standards, the curriculum maps that the teaching staff develops provides a framework for designing PBL units that are vertically aligned. A02 cites the school's efforts to align with the state's goals for access and equity by implementing PBL with fidelity.

Critical Components

What is the nature of PBL implementation at BIS?

Sub questions were used in this investigation to find out what teachers and administrators identify as the critical components of PBL. Observations of classroom instruction were conducted to identify which critical components were present, which were not, and what adaptations there may be. Data from participant interviews and documentary sources identify collaboration as a critical component of PBL (see Table 4.5). This component is evident in participants' report of small groups (01,02, 03, 04, 05, A01, A02), discussions (04, 05, A01, A02), and peer tutoring (02).

Table 4: Theme 4 Collaboration is a Critical Component of Project-Based Learning at Berhan International School

Participant A01

Interview :- :- I think collaboration among the students is a big part of it. And if the kids weren't 100 percent accurate. That's okay. Because a lot of I think but PBL, we want the kids to be able to collaborate.

Participant A02

Interview :- :- I think you would look for kids interacting with each other, because that's a hallmark.

Participant 01

Interview :- :- So, a small group. Like for the ones that just came we almost like had different lessons. They just they think it's the greatest thing ever. And they don't care who they work with. This is your partner. That's who you work with. But all of them do get excited.

Participant 02

Interview :- :- And now they're driving, they're discussing, they're learning from each other, going through the book. A lot of times are just being able to collaborate nicely with the other their partner group and speaking nicely with each other.

Participant 03

Interview :- :- I guess I expect them to have a little more leadership skill. Taking responsibility when they are working with partners, being able to focus on even being able to work hard to they should be able to create questions on their own. And that they're willing to act as community interpreter, translator.

Participant 04

Interview :- :- I'm not going to be doing it for a very long time before the students have a chance to talk to each other about what we just learned or anything they want to share. And then every time we do a collaborative project, we go over it again. And then it’s kind of helps out other kids end up talking to each other.

Participant 05

Interview :- You know, because they have to plan. They have to agree to disagree.

Source: own computation, (2024)

Similarly, student-centered exploration was another theme evident in the data (Table 4.6). Participants identify this theme as being present in their PBL implementation through the way students voice and choice is leveraged (01, 02, 03, 04, 05, A01, A02).

Participants 02, 03, and 04 explain that there are close ties with collaboration and student voice. The students are instructed through PBL to manage their time and make wise choices about who their partners might be. In the case of 02, students were encouraged to conduct themselves in ways that would allow them to work with anyone in their class.

Just as administrators recognize the high percentage of ELL students at BIS, teachers realize the importance of languaging (Table 4.7). Languaging or language acquisition became a theme in the data (01, 02, 03, 04, A01, A02). Participants report that to help students collaborate with one another and explore the content effectively guided language acquisition is essential to their implementation of PBL. The high ESL population at BIS has become a contextual factor in the nature of PBL on the campus . For example, in the case of 03, we found that technology was used to provide visual aids for students to develop language and content area proficiency . 04 explained that GLAD (guided language acquisition development) strategies were relatively new to that class but that building language proficiency helps develop the discussions on which his PBL practice depends

When discussing the structural or curricular aspects of PBL, nearly all participants name the standards as a critical component . 03 discusses the standards as they provide a starting place to plan and conceive of appropriate assessments. 04 mentions the close connection that standards and integrating multiple content areas have in the planning process for their PBL implementation. A01 mentioned the essential role that standards play in BIS' PBL design and implementation as a starting point for conceiving of new PBL units .

One notable outlier in the data is participant A02. A02 never mentions standards. However, A02 does discuss BIS' use of data team meetings. According to A02, data team use at BIS illustrates the relationship between content area standards and PBL implementation. The time spent conducting data team meetings were spent examining student achievement data. This consisted of teachers analyzing the skills and competencies that students were developing as a result of the instruction provided to them. While standards may be where instructional planning begins, for A02, teachers' focus on raising student achievement is emphasized when they consider how PBL is implemented .***Source: own computation, (2024)***

Omissions

Omissions in BIS' PBL implementation are the critical components that were present in the interview and documentary data but were not present in the observation data. 01 mentions that inquiry and collaboration are present in the instruction though no inquiry was observed . Collaboration was not observed as part of the lesson. However, the interview data describes that inquiry, though present and important, looks different for students in a lower elementary classroom. 01 explains that before students can be expected to effectively engage in inquiry to formulate complex solutions to authentic projects, they must first gain practice asking and answering questions . Similarly, in order for the youngest students at BIS to collaborate effectively, they must first receive instruction in basic communication skills.

Though discussed in interviews, integrated content area instruction was not present in observation data for certain cases. 01 was observed teaching an ELA (English language arts) lesson and integrated no other content area standards. In contrast, 02 had students engaged in an ELA lesson wherein they discussed a text that incorporated social studies content. In the other classes observed, there were language content standards being taught alongside either science or social studies standards.

Another notable omission is the use of reflection before, during and after the project. In every case, though inquiry may have been used, the kinds of reflection found in the documentary data was not observed in the classrooms. These planning documents are useful in exploring the nature of PBL instruction at BIS. Participants suggest in their discussions of collaboration and inquiry

that reflection does happen. However, according to 01 and 02, reflection can be irregular and informal throughout the course of the project . Knowing more about the perceived practice of PBL among participants will help complete this study. (***Source: own computation, (2024)***

Perceived Stage or Nature of Practice

Each participant described their practice of PBL as being toward a beginning stage . A01 explained that BIS teachers have all designed and implemented PBL but have not yet reflected on their work or redesigned their units based on that reflection. A02, 03 confirms the school being in the beginning stages . A02 and 02 also mention that for some in the school, there are concerns over the time constraints that PBL implementation can place on teachers. 05 offered that part of the difficulty of practicing PBL is a need for training . (***Source: own computation, (2024)***

Adaptations and Discrepant Cases

A01 maintains that adaptation is expected and acceptable at BIS . Explaining further, A01 expects that PBL components be practiced across content areas as they would be useful in a variety of lessons regardless of the discipline being taught. For the purposes of this study, therefore, a summary of instances when PBL was adapted will be useful. Discrepant cases, or instances when observed behaviors were significantly different from the other cases, are also included.

Technology was used in every classroom to facilitate instruction and collaboration in a more efficient way . In cases 04 and 05 the technology enabled small group collaboration that would otherwise have been possible through sharing hardcopy texts as in the case of 03, and 02. Technology was used in case 01 to facilitate the whole group instruction. Students used recordings to respond to and practice using certain language. So prevalent was the use of technology for instruction and assessment that it was considered a possible theme or critical component. However, as the documentary data does not mention technology as an explicit enough component of PBL, it is more likely that BIS' use of technology is not directly correlated

to their use of PBL. None of the interview data reflects that teachers or administrators conceive of technology as being necessary for their practice of PBL.

01 was not observed implementing inquiry or collaboration in the way documentary data describes inquiry and collaboration. However, interview data reveals that the students in this class require direct instruction in prerequisite foundational skills . A review of the documentary data alongside the observation and interview data reveal that the use of certain critical components is adapted to be appropriate for students in the earliest grade levels at BIS.

A02 posits that implementation at BIS is characterized by a need to balance academic achievement in foundational skills and fidelity in PBL . This is one possible explanation for why implementation is different in the 01 classroom than described in the documentary data. (***Source: own computation, (2024)***

4.4 Discussion

The problem prompting this study was that despite being expected to implement PBL, that teachers are not implementing PBL with fidelity. PBL is a learner-centered approach to teaching and curriculum design that increases engagement, inquiry, and is designed to ultimately lead to greater student achievement. This qualitative case study utilized Century et al.'s (2010) FOI as it provides a theoretical framework that allows one to examine an intervention based on its critical components. In the data gathered, themes and subthemes regarding the intentions and practice of PBL at BIS are apparent. Themes found in the data include information about meeting the needs of English language learners, increasing engagement, critical components of PBL, omissions or adaptations, and the perceived level of practice that educators have at BIS. The intended and actual practice of PBL seen at BIS is largely oriented around the needs of the students. Teachers and administrators have explained that PBL is intended to engage students who are learning English as a second language. The critical components that participants described, like collaboration and authenticity, were strategies meant to attend to these students' specific needs. Certain omissions and adaptations were observed. The most notable was the absence of collaboration or inquiry in a kindergarten class as well as the ubiquity of technology in every class.

All the participants described their practice of PBL as being in its beginning stages. One teacher explained that there is a need for a training that includes being able to observe a more experienced teacher's practice of PBL. One of the administrators mentioned that there is a need for implementation to be taken to the next step through a reflecting on previous practice and refining implementation. By addressing the needs identified in the data, there may be a way to better support teachers and increase student achievement.

4.5 Research Questions Discussion

RQ1: According to administrators, what is the intended use of PBL instruction in the curriculum at BIS?

Answer: The intended use of Project Based Learning (PBL) instruction in the curriculum at Berhan International School (BIS), as perceived by administrators, is to foster a student-centered approach to learning. Administrators envision PBL as a method to engage students in real-world projects that promote critical thinking, problem-solving, and collaboration skills. By emphasizing student-centered learning, administrators aim to create a dynamic educational environment where students take an active role in their learning process. This intended use of PBL aligns with the broader educational goal of preparing students for the challenges of the 21st century by equipping them with essential skills for success in a rapidly changing world.

RQ2: What is the nature of PBL instruction in BIS classrooms?

Answer: The nature of PBL instruction in BIS classrooms reflects a shift towards experiential and hands-on learning experiences. Teachers at BIS implement project-based activities that aim to enhance student engagement, foster creativity, and deepen students' understanding of content through practical applications. By incorporating PBL into their instructional practices, teachers create opportunities for students to work collaboratively, think critically, and apply their knowledge in authentic contexts. The nature of PBL instruction in BIS classrooms emphasizes active participation, inquiry-based learning, and the development of essential skills such as communication, problem-solving, and teamwork. This approach not only enhances student engagement but also cultivates a deeper understanding of concepts through real-world projects.

Discussion of Research Sub questions:

SQ1: What do teachers report are the instructional critical components present in their PBL curriculum?

Answer: Teachers at Berhan International School (BIS) report that the instructional critical components present in their Project Based Learning (PBL) curriculum include student-centered learning activities, authentic real-world projects, opportunities for inquiry and investigation, and collaborative group work. These components are designed to engage students in active learning, promote critical thinking and problem-solving skills, and encourage creativity and innovation. By incorporating these instructional critical components into their PBL curriculum, teachers aim to create a dynamic and interactive learning environment that fosters student growth and development.

SQ2: What do teachers report are the structural critical components present in their PBL instruction?

Answer: Teachers at BIS report that the structural critical components present in their PBL instruction include clear project objectives and goals, well-defined timelines and milestones, assessment criteria aligned with learning outcomes, and opportunities for reflection and feedback. These structural components provide a framework for organizing and implementing PBL activities effectively, ensuring that students understand the expectations, have a roadmap for project completion, and receive meaningful feedback on their progress. By incorporating these structural critical components into their PBL instruction, teachers create a supportive and structured learning environment that promotes student success and achievement.

SQ3: What critical components do teachers omit from their PBL curriculum?

Answer: Some teachers at BIS may omit certain critical components from their PBL curriculum, such as opportunities for student voice and choice in project selection, scaffolding and support for diverse learners, integration of technology for enhanced learning experiences, and connections to real-world contexts and applications. Omitting these critical components may limit the effectiveness of PBL implementation and hinder student engagement and motivation.

To address this gap, teachers can explore ways to incorporate these omitted components into their PBL curriculum to enhance student learning outcomes and promote a more comprehensive and inclusive educational experience.

SQ4: What critical components do teachers omit from their PBL instruction?

Answer: Teachers at BIS may omit critical components from their PBL instruction, such as explicit instruction on collaboration and teamwork skills, opportunities for student reflection on learning processes, formative assessment practices to monitor student progress, and differentiation strategies to meet the diverse needs of learners. Omitting these critical components may impact the quality and effectiveness of PBL implementation, leading to missed opportunities for student growth and development. By addressing these omissions and incorporating these critical components into their PBL instruction, teachers can create a more inclusive, engaging, and supportive learning environment for all students.

SQ5: What critical components exist in the classroom apart from what teachers report?

Answer: In addition to the critical components reported by teachers, other critical components may exist in the classroom environment at BIS. These components could include student-led discussions and presentations, peer collaboration and feedback opportunities, integration of interdisciplinary content and skills, use of technology for research and project development, and opportunities for student reflection on learning experiences. These additional critical components contribute to a rich and diverse learning environment that supports student engagement, creativity, and academic growth. By recognizing and leveraging these existing critical components, teachers can further enhance the quality and impact of PBL instruction at BIS.

CHAPTER FIVE

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.1 Summary of the findings

The assessment of Project Based Learning (PBL) implementation at Berhan International School in Addis Ababa City revealed a varied landscape of fidelity among teachers. While some educators demonstrated a strong commitment to PBL principles and effectively integrated project-based approaches into their instruction, others faced challenges in fully implementing

PBL practices. Factors influencing fidelity included teacher training, support from school leadership, and individual teacher beliefs and attitudes towards PBL. Recommendations for enhancing fidelity encompass ongoing professional development, peer collaboration, and regular feedback mechanisms to monitor and improve PBL implementation across all classrooms.

Teachers at Berhan International School encountered several obstacles in implementing PBL, including limited time for planning and collaboration, resource constraints for project-based activities, resistance to traditional teaching methods, and differing student readiness levels. Addressing these challenges necessitates a comprehensive approach involving adequate support and resources, a culture of innovation and risk-taking, and the promotion of professional learning communities to share best practices and strategies for overcoming implementation barriers.

The study highlighted that teachers and administrators generally perceived PBL as an effective approach for promoting student engagement, fostering critical thinking and problem-solving skills, and enhancing overall learning outcomes. Positive feedback emphasized the benefits of hands-on, collaborative projects in increasing student motivation and deepening content understanding. However, concerns were raised regarding assessment practices, scalability of PBL across different grade levels, and the need for ongoing evaluation to measure the impact of PBL on student achievement.

The research supervisor supported the study by guiding the qualitative case study using Century et al.'s Framework of Implementation (FOI) to examine PBL implementation based on critical components. Themes and subthemes emerged regarding the intentions and practices of PBL at Berhan International School, focusing on meeting the needs of English language learners, enhancing engagement, critical components of PBL, omissions or adaptations, and the perceived level of practice among educators. Participants described their PBL practice as in its early stages, emphasizing the importance of training, observation of experienced teachers, and reflection on previous practices to refine implementation and support teachers for increased student achievement.

Overall, the study contributes to the understanding of PBL implementation in an urban elementary school setting, shedding light on the complexities and challenges faced by educators

in adopting this student-centered approach. By identifying areas for improvement, providing recommendations for enhancing fidelity, and emphasizing the benefits of PBL for student engagement and learning outcomes, the research offers valuable insights for educators, administrators, and stakeholders in the field of education. The findings underscore the importance of ongoing support, professional development, and collaborative efforts to promote effective PBL implementation and maximize its impact on student success.

5.2 Conclusion

This qualitative exploratory case study sought to examine the nature of PBL implementation at an urban elementary school. Seven participants were interviewed (5 of whom were observed) to collect data about the intentions and the actual practice of PBL at the school. An analysis of the perception data revealed that omissions and adaptations of the PBL critical components were apparent. The data suggested the need for a training that provided a clear understanding of PBL implementation and an accelerated professional growth model that would build teacher capacity over time.

Teachers at Berhan International School were not implementing PBL with fidelity despite the availability of training opportunities and resources. Limited evidence of PBL implementation was observed, indicating a gap between intended practice and actual implementation.

Teachers and administrators perceived their current practice of PBL as being in the early stages of adoption, with room for improvement in fidelity and consistency. Omissions and adaptations of critical components of PBL were evident in teacher practices, highlighting the need for targeted training and support.

Teachers expressed a need for additional training and support to deepen their understanding of PBL principles, critical components, and best practices. There was a consensus among participants on the importance of ongoing professional development to enhance PBL implementation.

School leadership support was identified as crucial for promoting a culture of PBL within the school and providing resources for teacher professional development. Collaboration among

teachers and administrators was seen as essential for fostering innovation and sustaining PBL practices over time.

Challenges included the lack of formal observations of PBL implementation, inconsistent delivery of instruction, and the need for sustainable fidelity and acceptable adaptations. Opportunities for improvement included aligning PBL practices across grade levels, enhancing school-wide understanding and implementation of PBL, and fostering a culture of continuous improvement.

Through my research, I found that no training or strategy would make an impact if it could not have a lasting effect on teacher practice after the training was over. To have any real significance, the training would have to incorporate common components from both andragogy and PBL. Soft skills such as communication, creativity, and collaboration had to be part of the model if the training would have any lasting effect. Insights from this study also suggested that the model needed to account for acceptable adaptations to practice. By addressing the school's need to purposefully adapt and develop leadership skills among teachers over time, this project may promote positive social change.

5.3 Practical and Theoretical Implications of the Study

Practical Implications:

- **Teacher Training:** The study highlights the importance of targeted training programs for teachers to enhance their understanding and implementation of PBL. Practical implications include the need for ongoing professional development opportunities to support teachers in effectively integrating PBL into their instructional practices.
- **Leadership Support:** Practical implications suggest that school leaders play a crucial role in promoting a culture of PBL within the school, providing resources for professional development, and creating structures that facilitate collaboration among teachers.
- **Evaluation and Feedback:** Practical implications emphasize the importance of establishing systems for evaluating PBL implementation through observations, feedback

mechanisms, and self-assessment tools to support continuous improvement and reflective practice among teachers.

Theoretical Implications:

- **Andragogy and PBL Integration:** The study underscores the theoretical implications of integrating elements of andragogy (adult learning principles) with PBL practices to enhance teacher capacity and fidelity of implementation. This integration can lead to more effective professional development strategies tailored to adult learners.
- **Long-Term Impact Assessment:** Theoretical implications include the need for longitudinal studies to assess the sustained impact of PBL on teacher practice and student outcomes. This research can contribute to the theoretical understanding of how PBL influences educational practices over time.
- **Community Engagement:** Theoretical implications highlight the importance of involving parents, students, and other stakeholders in the PBL implementation process to create a shared understanding of the approach and foster community support for innovative educational practices.

The study's practical implications can inform the development of targeted interventions and support mechanisms to enhance PBL implementation at Berhan International School and similar educational settings. Theoretical implications contribute to the broader understanding of how educational theories, such as andragogy and project-based learning, can be integrated to promote effective teaching practices and student learning outcomes. By considering both the practical and theoretical implications of the study, educators, researchers, and policymakers can work collaboratively to improve the implementation of PBL, support teacher professional development, and enhance student engagement and achievement in project-based learning environments.

5.4 Recommendation

Based on the findings of the following recommendations are proposed to enhance the fidelity and effectiveness of PBL implementation:

- **Targeted Training Programs:** Develop and implement targeted training programs for teachers that focus on PBL principles, critical components, and best practices. These programs should incorporate elements of andragogy and provide opportunities for teachers to observe experienced PBL practitioners in action.
- **Professional Development:** Offer ongoing professional development opportunities for teachers to deepen their understanding of PBL, improve their instructional strategies, and enhance their collaboration skills. This can include workshops, seminars, and coaching sessions tailored to the specific needs of teachers at Berhan International School.
- **Evaluation and Feedback:** Establish a system for evaluating PBL implementation through formal observations, feedback mechanisms, and self-assessment tools. Regular feedback sessions can help teachers reflect on their practice, identify areas for improvement, and track their progress in implementing PBL effectively.
- **Leadership Support:** Provide leadership support at all levels to promote a culture of PBL within the school. School administrators should demonstrate a commitment to PBL, allocate resources for professional development, and create structures that facilitate collaboration and innovation among teachers.
- **Long-Term Impact Assessment:** Conduct a longitudinal study to assess the long-term impact of PBL implementation on teacher practice and student outcomes. This evaluation can help measure the effectiveness of PBL in improving student engagement, learning outcomes, and transferable skills across different grade levels.
- **Community Engagement:** Involve parents, students, and other stakeholders in the PBL implementation process to create a shared understanding of the approach and garner support for its continued use. Engaging the community can help build a strong foundation for sustainable PBL practices at Berhan International School.

By implementing these recommendations, Berhan International School can strengthen its PBL implementation, support teacher growth, and ultimately enhance student learning experiences and outcomes. Continuous improvement efforts and a collaborative approach to professional

development are essential for creating a vibrant and effective PBL learning environment at the school.

5.5 Future works

Based on the study several potential areas for future research and development are identified:

- **School-Wide Practices:** Explore the implementation of PBL practices across all classrooms and grade levels within Berhan International School. Investigate how PBL is integrated into the school's curriculum, instructional strategies, and assessment methods to create a cohesive and comprehensive approach to project-based learning.
- **Teacher Preparation Programs:** Investigate the impact of integrating PBL training into preservice teacher education programs. Explore how preservice teachers' exposure to PBL principles and practices influences their readiness to implement project-based learning in their future classrooms.
- **Scaling Up Research:** Replicate the study in multiple schools within the district or region to gather a larger sample size and broaden the scope of the research. Compare PBL implementation practices across multiple schools to identify common challenges, effective strategies, and variations in implementation fidelity.
- **Leadership Support and Professional Development:** Explore the role of school leadership in supporting PBL implementation and fostering a culture of innovation and collaboration among teachers.
- **Student Outcomes Research:** Investigate the impact of PBL on student outcomes beyond academic achievement, such as critical thinking skills, creativity, collaboration, and problem-solving abilities.

By addressing these future research areas, educators, policymakers, and researchers can further advance the understanding and implementation of Project Based Learning in educational settings, leading to improved teaching practices, enhanced student learning experiences, and positive outcomes for all stakeholders involved.

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APPENDIX

ST. MARY`S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

Dear Sir/Madam I am a Master's student in ST. Mary`s University, School of Graduate Studies, currently, I am conducting a research study entitled as "Assessment on Project Based Learning Implementation at Berhan International School in Addis Ababa City". I have designed this questionnaire to collect data from employees working in Berhane International School, Addis Ababa City.

The questionnaire will be used to collect the primary data needed for a research study. Therefore, I seek your assistance to be as open, fair, and honest in terms of responding to your response to each question as much as possible you can. The researcher assures you that no individuals will be identified from their responses and there are no requests for confidential information included in the questionnaire. The results of the analysis will be strictly used by the researchers for study purposes only.

INSTRUCTIONS

- ✓ No need for writing your name in this questionnaire
- ✓ Read each statement carefully.
- ✓ Multiple responses are not possible.
- ✓ For **MORE** information, call 0902514384

"THANK YOU FOR DEVOTING YOUR PRECIOUS TIME TO FILL THIS QUESTIONNAIRE"

BY: ROMAN JENATO

Appendix 1

Peer Observation Template

Section 1 Back Ground Information

Name of Educator: _____ Name of Observer: _____

Date: _____ Time: _____ Content Areas: _____

Strategies being observed:

_____

Areas of interest that the teacher wants to be observed:

_____

What goal or desired personal outcome does the educator have for this lesson?

_____

What desired outcomes do you have for your students?

Group 1:

Group 2:

Group 3:

Group 4:

Group 5:

Reflection (Individual):

Complete this section before debriefing with your PLC partner.

1) In what ways did you meet your goals and desired personal outcomes?

_____

2) Who benefitted from your instruction? Who did not benefit?

_____

3) What outcomes surprised you about the effect of your instruction today?

Observation Notes

1. **What is the teacher doing?**	
What do I see?	**What do I think?**
2. **What are the students doing?**	
What do I see?	**What do I think?**

Interview

1. How might the learning today impact your teaching?

2. What are your next steps?

3. What are some questions you might have about what was addressed today?

4. What support or information might you need in order to leverage the learning today?

Appendix II: Interview Protocol

International School in Addis Ababa City with the topic of "Assessment on Project Based Learning's Potential Effects on Student's Knowledge and Soft Skill Development". As the interview questions are tools used to collect data regarding the topic, I kindly seek your assistance in responding to the questions listed below. Any information you present will be kept utterly confidential and will be used only for academic purpose.

I would like to appreciate your cooperation and prompt response in advance.

Interview Questions: Teachers

1) How would you define PBL?
2) What are the components of PBL that are necessary for instruction?
3) What would you say were critical components to a PBL lesson or unit?
4) How might you describe your practice of PBL?
5) Observation Debrief question(s): (e.g., I noticed you…Tell me about the purpose of this practice/strategy.)

Interview Questions: Administration

1) How would you define PBL?
2) What are the components of PBL that are necessary for instruction?
3) What would you say were critical components to a PBL lesson or unit?
4) How might you describe your school's practice of PBL?
5) How would you describe the intentions of your school's implementation of PBL?

Appendix III: Direct Observation Protocol

Observation Notes

1. **What is the teacher doing?**	
What do I think?	
2. **What are the students doing?**	
	What do I think?

THANK YOU IN ADVANCE

ROMAN JENATO