

Qualitative Project

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## CHAPTER 1: INTRODUCTION

### Introduction

Project-Based Learning (PBL), also referred to as Problem-Based Learning, is a non-traditional pedagogical approach to engage and teach students. In a typical classroom setting, teachers provide students with information in a manner they feel is important, and eventually assess students on the knowledge they have acquired. With PBL, teachers relinquish control, and allow students to take more ownership in their learning. Teachers take on a more facilitative role and allow students to explore and design a solution for the problem they are presented with. When PBL is combined with technology, students use technology to drive and express their thinking as they solve a particular problem.

### Statement of the Problem

Every year, the Philadelphia Zoo invites all of the schools in ABC District to participate in their UNLESS Contest. This contest presents students with an opportunity to complete a PBL project that integrates technology. The project presents students with a problem in the environment to solve with a campaign that uses various technologies to reach people in the surrounding community. For example, concerns in the environment can be micro-plastics in water or rapid growth in landfills. Students are also presented with endangered animals around the world as part of the challenge and provide materials that are aligned to the State Standards. In turn, students create a campaign to raise awareness on how to solve said problem using social media and other technological methods. For the campaign, there are no limitations. Students can be as innovative as they choose to be, which opens an opportunity for PBL to be integrated into the curriculum. This opportunity entails a free trip to the Philadelphia Zoo, unlimited video

conferencing support with zoo experts, and a chance to win over \$1,500.00, all while making a global difference. The district endorses the contest every year, and all schools within the district have high participation rates, except ABC School. In fact, only 1-3 teachers (out of 20) sign up annually for the event. The objective of this research is to discover the reasoning behind teachers not signing up for this PBL opportunity with the Philadelphia Zoo. ABC District has incorporated this PBL opportunity as a way to conduct a cross-curricular technology integrated adjustment to the schoolwide curriculum; however, ABC School is the only school within the district that has not displayed interest or desire. This research will further explore how technology can enhance the curriculum; ABC District wants to provide support for teachers to incorporate said PBL annually, as the other schools within the district have already done so.

#### Purpose

The researcher wants to target opportunities from respondents' reasonings to better understand how to provide support and gain teachers' interest in a technology based PBL project within ABC School's curriculum. The purpose of this study is to explore reasons behind teachers not signing up for the annual UNLESS Contest with the Philadelphia Zoo, and to explore ways to enhance its curriculum with opportunities to include technology integrated tools within its instructional design through PBL.

#### Research Questions

The following research questions will be used to guide this research:

R1: How can administration in ABC School encourage teachers to be a part of the district's annual PBL opportunity?

R2: How can ABC School best integrate districtwide PBL technology initiatives within its schoolwide curriculum?

R3: What do teachers need in ABC School to successfully integrate a technology-based project?

### Limitations, Delimitations and Assumptions

Students in ABC School are transitioning to a one-to-one technology initiative. This transition is new for both teachers and students alike. ABC School is located in Glassboro, New Jersey and has approximately 300 students, most of which obtain free or reduced lunch. ABC School is a Title 1 School, as are all of the schools within the district. ABC houses all first through third grade students within the ABC District. Students obtain technology classes once a week and have access to a laptop 2-3 times a week for 20 minutes in class. Administration is currently amending the curriculum to incorporate more technology. All neighboring schools within ABC District have integrated PBL to pilot various technology tools, except for ABC School.

Limitations for this research may include the researcher's bias on the benefits of PBL from personal experience. Researchers prior work may be seen as the expectation for other teachers and can cause discouragement due to unrealistic expectations or may seem difficult to attain. For example, researcher creates a yearly schoolwide demonstration to showcase students' work for the UNLESS Contest. This showcase includes technology integrated projects, Mock Trial and a traveling exhibit with artwork and various Makerspace projects. These multiple ideas may appear to be the expectation, and cause teachers to get frustrated.

Delimitations for this research are that the researcher has participated in the Philadelphia Zoo's UNLESS Contest for over five years. The researcher has had firsthand experience with

the contest and has served on the Zoo's Teacher Advisory Board. The researcher can provide useful insight about the overall contest and benefits of the experience to teachers. Researcher can also provide authentic examples and step-by-step procedural requirements. However, the multiple uses of technology may appear unrealistic due to lack of training and/or exposure.

Assumptions for this research is that the UNLESS Contest may seem as additional work on top of the workload teachers already have, instead of PBL being seen as an opportunity in conjunction with what is already taking place within the classroom. Perhaps teachers lack knowledge of the benefits of PBL and/or the skills on how to gradually release such a project. Some teachers may feel the UNLESS Contest is out of their students reach. Another assumption is that teachers may feel the project is too time consuming and its cross-curricular components may interfere with scheduling. Lack of exposure to overall technology may heighten frustration and/or pushback.

## **CHAPTER 2: LITERATURE REVIEW**

### **Introduction**

Project-Based Learning can entail unlimited technology and innovative ideas, as it is a student-centered approach to learning. For this reason, the Philadelphia Zoo hosts their annual UNLESS Contest to help raise awareness of climate change and the impact on our world's ecosystems. The contest opens up at the beginning of every schoolyear and allows participants about 6-7 months to complete their projects. In the past, students have created prototypes with 3D printers, digital storyboards, commercials, YouTube videos, etc., as part of their campaigns. Students are engaged in saving the planet and its animals. Students have incorporated the use of

social media to publicize their projects to gain momentum. To date, more than 17,000 students from over 400 schools have participated in the contest which has reached over 12 million people to date through this program.

### Relevant Studies and Theory

John Dewey was a philosopher and an advocate for education reform in the 1900s. He coined the phrase “learn by doing” which is a foundational principle of PBL. Since then, many educational facilities have opted to mimic a more traditional method of teaching and learning with basic pedagogical practices that tend to be more teacher centered. The teacher stands in front of the class as “a dispenser of information and instruction” and provides what he/she feels is relevant for students to know (Thomas, 2000). In turn, students regurgitate what they have learned through some form of an assessment. Using this knowledge-based approach, many students do well on formative assessments. However, when a study was conducted between two schools – one that practiced PBL and one that did not, the researcher noted the school that integrated Project-Based Learning principles into their curriculum were “superior in answering applied and conceptual problems” (Bell, 2010).

Project-Based Learning practices develop skills to be able to answer applied and conceptual concerns because of its design. When PBL is incorporated into the instructional design, teachers introduce the problem or area of concern to students. In turn, students are asked to respond and/or solve the problem. Students collaborate, research and develop innovative ways in groups to solve said problem. In doing so, students develop skills to ask relevant questions, and make informed decisions. It is not uncommon for students to talk and share ideas with one another as the teacher facilitates. Engagement is heightened because students feel they

are involved in a topic that is important to them (Chen, 2010). When students are engaged, students take ownership of their learning. This shift in paradigm is a result of PBL. Students gain invaluable skills that are overarching in content as they unravel a cross-curricular project.

In a second study Keegan, A. & Turner, J., (2001) analyzed nineteen facilities in Europe. Both researchers wanted to explore the effectiveness of PBL on their overall level of productivity. All nineteen facilities had comparable amounts of personnel working together to complete various tasks at hand. Researchers noted the quantity of work produced by all of the groups and made an interesting conclusion. Keegan, A. & Turner, J., (2001) highlighted that the workers introduced and involved with PBL principles did not outperform the other groups in quantity. The non-PBL control groups were able to outperform the PBL groups in overall productivity. However, the researchers noted that the quality of the two groups were vastly different in their levels of quality. The PBL group showed evidence of “organic learning” which resulted in better quality overall as quantity does not equal quality (Keegan, A. & Turner, J., 2001).

Project-Based Learning allows students to be engaged in an authentic simulated experience that mirrors the real-world, which results in knowledge and preparedness (Garran, 2008). Apprentice-like practices allow students to gain a better feel for how a particular field of study is. Project-Based Learning principles promotes teachers to reach out to their surrounding community for resources and expertise. Since PBL is not teacher-centered, teachers are not expected to know everything and answer every question; instead, teachers take on the role of a liaison. Teachers can incorporate advice from experts in the field. With the UNLESS Contest, teachers can reach out to video conference with experts in the Zoo, as well as use external resources and contact environmental engineers, architects, and lawyers. In doing so, students

gain vital communication skills by conducting interviews. These are the types of experiences that can occur when PBL is promoted and implemented into instructional practices. Students gain real-world application because the learning taking place is authentic and involves solving a real-world problem.

There are many different types of personalities in the classroom, workplace and in the world as a whole. For this reason, it is important for educational facilities to provide the opportunities for students to learn to interact with people from diverse backgrounds and abilities, this includes children with disabilities. In a study conducted by De La Paz and Hernandez, R. (2013), the role of children with disabilities was noted when involved in an academic setting. A general education classroom participated in a Problem-Based Learning project. Students with disabilities were involved with the general education population. Typically, the classroom teacher would provide modified work for the students with disabilities; however, since the PBL project is student-centered, students were engaged in collaborative thinking and discussion. This also included the students with disabilities. De La Paz and Hernandez, R. (2013) noted that the PBL procedures that were taking place in the classroom allowed an educational opportunity for the students with disabilities to participate and be included in the learning process. The students with disabilities engaged in conversation and provided input and ideas to the group. PBL allowed for a seamless inclusive environment.

21<sup>st</sup> Century skills are needed to be a productive member of society in general, as well as a productive participant in the workplace. These skills include critical thinking, project management, and collaboration. Hattie, J. (2008) is an advocate for Project-Based Learning. He has seen firsthand the long-term benefits of the acquired skills of student-centered learning. Hattie believes that the goal of PBL is to ensure that every child, regardless of their differences

and abilities, acquires growth in knowledge by learning to assess themselves by taking governance of their learning, and by also holding each other accountable. In the process, students gain intrapersonal skills, which is an important skill to develop in life.

Project-Based Learning provides a deeper understanding of content, as the parameters are not pre-established for students. PBL allows teachers and students the flexibility of transformative thinking through real life application. *Buck Institute for Education: PBL Works* (<https://www.pblworks.org/>) is an online platform that provides endless resources for educators that are implementing, or interested in incorporating PBL in their classrooms. This online platform provides support, examples and research-based information that backup PBL principles. The site also includes workshops for novice teachers, as well as veteran teachers who are interested in incorporating PBL into their instructional design practices. The site promotes transitioning from “theory to practice” to target topics that are important for students and to truly engage them throughout the learning process, using a more inclusive hands-on approach.

### Summary

The Philadelphia Zoo’s UNLESS Contest is an opportunity for teachers to integrate Project-Based Learning into the classroom. The Zoo will present students with a real-world problem; students will be challenged to come up with a unique way to spread awareness of the importance of conservation as they see fit. The parameters of the student-led campaign project lend itself to student creativity and endless technology integration. In addition, both the Philadelphia Zoo and *PBL Works* have additional resources that support teachers throughout their project implementation. Students will gain a unique hands-on experience that will develop various communication and planning skills, while aligning to the State Standards. This project

will also allow students to connect to their surrounding community and world as they make a difference.

## **CHAPTER 3: METHODOLOGY**

### Introduction

For this research, a Qualitative Approach is taken to explore the reasons behind the lack of teacher signups for a free Project-Based Learning opportunity provided yearly by the Philadelphia Zoo's UNLESS Contest. Students who have participated in the past have acquired critical thinking skills, intrapersonal techniques and achieved State standards. However, 1-3 signups out of twenty teachers needs to be further explored to be understood. The reasoning behind the lack of involvement will guide the researcher in providing tools to better support teachers, in hopes that there will be an increase in participation.

An increase in student participation in the UNLESS Contest will translate into more students involved with Project/Problem-Based Learning. When students are involved with PBL they will be in a learning environment that revolves around their interests and curiosities. Student ownership lends itself to heightened engagement throughout a cross-curricular thematic unit. This inclusive opportunity will allow students to develop skills that will be beneficial to them in and out of the classroom.

### Research Design

Based on Phenomenological Research (Creswell, 2018), the researcher will combine the information coming from the teachers from their interview responses. What the teachers think and why as described by the teachers will be noted and evaluated. In addition, based on

Grounded Theory (Charmaz, 2006), the actions taken by the participants will also be noted and cross referenced with corresponding interview responses. All of this evidence will serve as data collection for the researcher to analyze and explore.

A qualitative approach is taken for this type of research as the reasoning behind the low participation rate for the district wide PBL initiative through the UNLESS Contest is unknown for ABC School. Teachers will be asked a series of questions by researcher so that the reasoning is explored and rectified to suite the needs of teachers. When compared to neighboring schools within the same district, the low habitual participation is questioned and the rational is unknown. Therefore, research will be conducted to obtain data that will give a better understanding of how ABC School can be more intentional with their PBL proposal and gain better traction with teacher signups.

### Population and Sample

Teachers are the population that can best help understand the phenomenon as to why ABC School has the lowest signup participation for the UNLESS Contest in the district. Therefore, every teacher within ABC School will be interviewed by the researcher. Teachers are the ones in this scenario that can provide information crucial to this research, as they are the ones that have the ability to sign up. Some teachers may feel as though they do not have a voice and being asked their opinion in this matter will allow them to share their thoughts and insight. Teachers can provide detailed understanding to the research questions entailed in this study.

The researcher will also conduct sampling with the other schools within the district and ask the teachers who signup for the contest annually to provide their reasoning and insight on

their PBL experience. This information obtained from the other schools within the same district may provide helpful insight as well to cross-reference at the end of all of the interviews.

In order for purposeful sampling to occur, for this study researcher will conduct Theory Sampling. This method of sampling will provide different perspectives for the researcher to consider when examining data and responses. In order for the researcher to discover reasoning, every teacher in ABC School will be interviewed because only the teachers in this scenario, can provide a clear understanding of the problem. Once the interviews are conducted, the researcher will obtain data that will be shared with Administration to problem solve in a way that will promote the PBL initiative.

#### Researchers' Position

The researcher is an employee within the district that has participated in the UNLESS Contest for over five consecutive years and serves on the Teacher Advisory Board for the Philadelphia Zoo. Researcher has seen firsthand the endless benefits of being involved in a PBL format within the classroom setting. Researcher participated in the PBL initiative while as a general education teacher for first and third grade.

Researcher's relationship with classroom teachers is one that is open and approachable, which will promote teachers to be honest and open with during interviews. For this reason, face-to-face interviews will be attempted first, and then electronic questionnaires will be sent out if warranted. Having an open relationship with colleagues, administrators and serving on the Zoo's Advisory Board helps broaden researcher's perspective on topic from various vantage points. Following interviews, the data will provide administration with information to be able to make more informed decisions regarding professional development and curriculum changes.

## Procedures

In order to gain a better understanding of the low participation rate for teacher signups in ABC School for the PBL technology initiatives with the Philadelphia Zoo, face-to-face interviews will be conducted. In the first week, the researcher must establish setting, identify actors and create a log of potential participants. Researcher must meet with the building Administrator of ABC School to process questions that will be asked during face-to-face interviews with staff. If possible, the researcher should have the Administrator share purpose of interview with staff beforehand in ABC School. Completing this task will ensure the questions are approved by Administrators and enough copies are in hand for interviews. In addition, a log should be used to identify names of teachers that will be interviewed and created log will be an organizational tool used to keep track of interviewees.

During the second week, the first round of data collection will be conducted. During this time the researcher will conduct face-to-face interviews and document most relevant information on forms. The researcher will document any interesting observations that are pertinent to the study. (View Appendix for list of questions.) Once the first round of data collection is complete, the researcher will update log accordingly as interviews are conducted to keep track. After the researcher compiles data from round 1, the researcher will decide when to conduct a second round of data collection. The researcher will follow up with teachers that have not been interviewed. The researcher will provide a paper copy of questions to teacher interviewees in person with return date, as well as an electronic copy. Once this is done, the researcher will await feedback, and follow up with those who have not responded.

During the third week, the data will be analyzed. The data obtained will be coded accordingly and cross referenced with responses. The researcher will look for patterns and applicable information regarding ways administrators within ABC District can support technology integration in ABC School. At this point, the researcher may have additional questions to explore further with an individual or with the group. These exploratory situations should be logged and followed through within a timely manner to avoid delaying research. This step should be done accordingly to ensure the researcher have a clear understanding of teachers' needs.

During the fourth and final week, the researcher will compile a report and share it with administrators and stakeholders within ABC School. Concerns that were shared will be assessed and examined. The commonalities that evolved during data collection and analysis will be documented in report. During this time, the researcher will meet with Administration in ABC School and District to share findings. A strategic plan will be created that aligns to findings in research. At this point, decisions regarding technology integration with PBL will be decided.

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Websites mentioned in text:

- <https://philadelphiazoo.org/unless-contest/>
- [www.pblworks.org/](http://www.pblworks.org/)

## APPENDIX

PBL Interview Form	
<b>Teacher:</b> _____	<b>Grade:</b> _____
<b>Would you like your responses to remain anonymous? ___YES ___NO</b>	
<b>Researcher:</b> <i>Thank you for meeting with me. This interview is to gain a better understanding of the low signups for the annual UNLESS Contest for the Philadelphia Zoo's PBL opportunity. The Zoo's PBL incentive promotes Project-Based Learning and allots over 6 months to complete a unique student-centered project to address a real-world problem. I will ask you a few questions to gain a better understanding of how Administration can better support your needs as a teacher, in hopes to gain more signups for the next PBL initiative.</i>	
<b>Question 1:</b> <i>What different types of technology do you currently use in the classroom?</i>	
<b>Response:</b>	
<b>Question 2:</b> <i>What is your understanding of Project-Based Learning?</i>	
<b>Response:</b>	
<b>Question 3:</b> <i>How can the school support you if you with technology integration?</i>	
<b>Response:</b>	
<b>Question 4:</b> <i>What resources would you need to take part in PBL?</i>	
<b>Response:</b>	
<b>Question 5:</b> <i>How can the UNLESS Contest benefit you and/or your students?</i>	
<b>Response:</b>	
<b>Additional Questions:</b>	
<b>Additional Comments/Observations:</b>	

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