

The Effect of Project Based Learning and Student Engagement and Motivation: A Teacher Inquiry

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Introduction

Teacher Inquiry Question

What impact will using Project Based Learning (PBL) have on student engagement?

Rationale

In this inquiry, I would like to examine the principles of Project Based Learning (PBL) and their effect on student engagement in the classroom. My hope is that I will be able to apply these principles in my family studies classroom, where my students will become more engaged and interested in the lessons, thus contributing positively to their self-worth.

I have decided to use PBL for the following reasons:

- it is learner-centred
- it allows for learners to investigate a worthy topic
- the learner constructs “personally-meaningful artifacts that are representations of his/her learning”
- involves “beginning slowly with the implementation, teaching students to negotiate cooperative/collaborative groups and establishing multiple forms of performance assessments” (Grant, 2002)

Methodology

To gather evidence for my inquiry, I decided to interview an experienced teacher who has used PBL in her classes, conduct a literature review on PBL and watch some videos which show PBL in action. I plan to use the data collected from my primary and secondary research to inform my practice for this coming year. My ultimate goal is to be able to increase student engagement by introducing PBL in the family studies classroom.

Gathered Information and Analysis

Literature Review

Project Based Learning (PBL) is still in its developmental stage and as a result there isn't enough empirical data to prove that it is a better alternative to other forms of instruction. Since I am interested in using PBL as a strategy to increase student engagement in my class, I will focus on studies that looked at the effect of PBL on student engagement and motivation. Based on the literature that I read, there are pros and cons to using PBL in a classroom. In this literature review, I will look at both the benefits of PBL as well as barriers to implementing project-based learning in a classroom. My next step in the teacher inquiry is to interview a colleague who has used PBL in her classroom and come up with some conclusions and a plan of action for applying PBL in my own classroom this coming year.

According to Blumenfeld and others (1991), "PBL emphasizes depth of understanding over content coverage; comprehension of concepts and principles rather than knowledge of facts; development of complex problem solving skills rather than learning building block skills in isolation. [Moreover], PBL emphasizes student interest rather than following a fixed curriculum...It is also clear that PBL teaches students complex processes and procedures such as planning and communicating" (Phyllis et.al., 1991).

Similarly, Grant (2002) and Ginsberg and Wlodkowski (nd), state that PBL is a rigorous, relevant, and engaging instructional model that supports authentic inquiry and autonomous learning for students. Along with encouraging academic proficiency and meeting the traditional goals of education, PBL has important benefits for today's students.

Research conducted by the Small School Project (2003) using data collected from 17 schools indicates that using PBL has many benefits in the classroom which include: helping to support students in learning and practicing skills in problem solving, communication, and self-management; creating positive communication and collaborative relationships among diverse groups of students; meeting the needs of learners with varying skill levels and learning styles; and engaging and motivating bored or uninterested students. As well, "PBL builds trust between staff and students because students are given a voice and teachers are put in a place of learning right alongside students. Projects ask students to tap into their prior knowledge, helps them

expresses their culture, builds on their strengths, and validates their passions. Learning becomes powerfully fun.” (Small Schools Project, 2003)

When it comes to applying the principles of PBL in a classroom, there are many barriers that a teacher needs to consider in order to successfully implement it. In an excerpt from the *Buck Institute for Education’s Handbook for Project Based Learning (2010)*, implementing PBL in the classroom may present some challenges for experienced and novice teachers alike. The handbook lists some barriers to implementing project-based learning which include: teachers’ discomfort with their new role as facilitators and the resulting loss of class time; students’ inexperience with cooperative or collaborative learning; and designing appropriate assessment and evaluation instruments for such projects.

First, because project-based learning focuses on in-depth investigations that are student driven, the teacher may not be comfortable with their new role as facilitator and the resulting loss of control. Moreover, this may present some challenges in terms of class time and the ability to cover the necessary curriculum expectations. Next, almost all the projects that use PBL principles are rooted in cooperative or collaborative learning. Thus, students who are not experienced with working in groups may have difficulties negotiating compromise and managing conflict that may result from group work. Finally, for the classroom teacher, finding the right assessment and evaluation tools for PBL can be a challenge. Because learners are constructing artefacts that represent their learning, it is important to provide authentic and constructive feedback. The handbook recommends using portfolios and rubrics, but cautions that they might be somewhat subjective.

To summarize, PBL has a strong proven record of promoting student engagement. Applying the concepts of PBL can help teachers create engaging and challenging activities in the classroom that will support self-directed learning among students. The challenge remains, however, to effectively use PBL as a teaching method. Using PBL in a classroom requires time for both teachers and students to properly apply the strategies necessary for successful implementation.

Videotapes of PBL

(Source: The Buck Institute for Education, 2010).

http://www.bie.org/index.php/site/PBL/pbl_handbook/

I watched few videos about using PBL in the classroom from the Buck Institute for Education website. One of the videos that I found to be very interesting was *Elementary Project: Courtyard Redesign*; that video showed 5th graders from Madison Wisconsin public school in the US presenting their finished designs to a group of school architects, planners, & designers. The project was part of a whole school initiative to use PBL in their elementary classrooms. The school had a yard that was not used for anything. The school principal in collaboration with the classroom teachers told the kids to design the space. Starting with brainstorming, kids worked in groups and came up with ideas for using the space: reflection pond, benches, pathways, lights, recreational space for arts and science and another for fine arts. The kids looked very engaged and motivated as they presented their designs, drawn to scale, to 10 architects from across the country.

Another video showed high school students reflecting on their experience of project based learning and describe how they not only learned a great deal of content, but also practiced the 21st century skills needed for personal and workplace success.

To summarize, I thought the videos did an excellent job showing what PBL in action would look like. The students gained a deeper understanding of the concepts and standards at the heart of a project. The projects built vital workplace skills and lifelong habits of learning. The projects also allowed the students to address community issues, explore careers, interact with adult mentors, use technology, and present their work to audiences beyond the classroom. PBL can motivate students who might otherwise find school boring or meaningless.

Colleague Interview

I emailed my interview questions to an experienced classroom teacher, Stephanie. Stephanie has used PBL in both her grade 9 classes as well as part of her action research for her Junior ABQ. I found her responses to be quite useful.

When asked about how comfortable teachers are with PBL, her response was that it was not difficult for teachers to implement PBL as long as the appropriate classroom culture was

established prior to the PBL experience. Her description of “appropriate” included a “culture of no put downs and the right to pass”. Moreover, having the “appropriate” classroom will help facilitate student behaviour that is conducive to successful PBL experience for everyone in the class.

When it comes to difficulties faced by students who are inexperienced with group work, Stephanie indicated that the onus is on the teacher to create balanced groupings, with a mix of abilities and skills, and such that students who do not work well together are not placed in the same group. Once these groups are created, there is a higher chance of having “positive” groups with better chances for success.

My next question to Stephanie was about the student’s ability to handle a project both behaviourally and academically. Stephanie re-iterated that once an appropriate classroom culture was established and the teacher has created positive groups, then students are quite capable of engaging in learning from the PBL experience.

Finally, I asked Stephanie about whether assessment and evaluation of PBL can be a challenge. Stephanie indicated that she would use anecdotal assessment in her classes and would ask her students to demonstrate their learning using oral presentations. The use of rubrics that she would co-create with her students would be quite helpful for formative assessments as well as summative evaluations.

Analysis and Conclusions

Based on my interview with a seasoned high school teacher who has used PBL in her classes and my own research with PBL through the videos that I watched and the literature review that I read, I’ve come up with the following conclusions: some teachers use PBL extensively as their primary curriculum organizer and instructional method. Others use PBL occasionally during a school year. Projects vary in length, from several days to several weeks or even a semester. PBL can be effective at all grade levels and subjects, and in career/technical education, afterschool and alternative programs.

Moreover, in Project Based Learning (PBL), students go through an extended process of inquiry in response to a complex question, problem, or challenge. While allowing for some degree of student "voice and choice," rigorous projects are carefully planned, managed, and

assessed to help students learn key academic content, and practice 21st Century Skills (such as collaboration, communication & critical thinking).

I came to a conviction that PBL is a good tool to improve student engagement in any classroom. Creating a balance between student engagement and involvement in the classroom and covering the curriculum expectations remains to be a challenge.

BIBLIOGRAPHY

Blumenfeld, P., Soloway, E., Marx, R., Krajcik, J., Guzdial, M. and Palincsar, A. (1991). *Educational Psychologist*, 26 (3 & 4), pp. 369 – 398.

The Buck Institute for Education (2010). *The Buck Institutes for Education's Handbook for Project Based Learning*. Retrieved July 15, 2010

http://www.bie.org/index.php/site/PBL/pbl_handbook/

Ginsberg, M., Wlodkowski, R. (n.d). Creating Highly Motivating Classrooms for All Students: A School wide Approach to Powerful Teaching with Diverse Learners. Retrieved July 15, 2010

<<http://www.josseybass.com/>>

Grant, M. (2002, winter). *Meridian: A Middle School Computer Technologies Journal*, 5 (1). Getting a grip pm Project-Based-Learning: Theory, cases, and recommendations. Retrieved July 15, 2010

<<http://www.ncsu.edu/meridian/win2002/514>>

Small Schools Project (2003). Retrieved July 15, 2010.

<http://www.smallschoolsproject.org/PDFS/Planning_Resources/spring2003/spring2003-pbl.pdf>