## Prairie Journal of Educational Research

Volume 2 | Issue 1

Article 3

2018

# Utilizing Project-Based Learning to Increase Engagement and Performance in the High School Classroom

Alan English Kansas State University, englishalan@ksu.edu

Follow this and additional works at: https://newprairiepress.org/pjer

Part of the Curriculum and Instruction Commons, Military History Commons, Secondary Education Commons, Secondary Education and Teaching Commons, and the United States History Commons

This work is licensed under a Creative Commons Attribution-No Derivative Works 4.0 License.

#### **Recommended Citation**

English, A. (2018). Utilizing Project-Based Learning to Increase Engagement and Performance in the High School Classroom. *Prairie Journal of Educational Research, 2*(1). https://doi.org/10.4148/2373-0994.1017

This Article is brought to you for free and open access by New Prairie Press. It has been accepted for inclusion in Prairie Journal of Educational Research by an authorized administrator of New Prairie Press. For more information, please contact cads@k-state.edu.

# Utilizing Project-Based Learning to Increase Engagement and Performance in the High School Classroom

#### Abstract

#### Abstract

Project-based learning was incorporated into a high school American History course unit where students were expected to write an original history of the Vietnam War based exclusively on primary sources. Throughout the school year, students working as a collective unit worked to raise funds at school events for the purpose of surprising a class guest speaker, a Vietnam veteran, with a sponsored flight to Washington D.C. through Kansas Honor Flights. In addition to creating an experience of civic participation, student engagement (as measured by rate of completion of the project) and performance (as measured by average grade on the project) were tracked. Statistically significant improvements with a moderate effect size were found in student engagement as compared to previous school years. No statistically significant improvements in student performance were demonstrated. Results support previous literature linking project-based learning to increased student engagement but potentially indicate that student performance is best manipulated by an alternative mechanism.

#### Keywords

Project-based learning, Civic participation, Engagement, Performance, Social studies, Vietnam, Kansas Honor Flights

# Utilizing Project-Based Learning to Increase Engagement and Performance in the High School Classroom

## **Alan English**

Project-based learning was incorporated into a high school American History course unit where students were expected to write an original history of the Vietnam War based exclusively on primary sources. Throughout the school year, students working as a collective unit worked to raise funds at school events for the purpose of surprising a class guest speaker, a Vietnam veteran, with a sponsored flight to Washington D.C. through Kansas Honor Flights. In addition to creating an experience of civic participation, student engagement (as measured by rate of completion of the project) and performance (as measured by average grade on the project) were tracked. Statistically significant improvements with a moderate effect size were found in student engagement as compared to previous school years. No statistically significant improvements in student performance were demonstrated. Results support previous literature linking projectbased learning to increased student engagement but potentially indicate that student performance is best manipulated by an alternative mechanism.

#### Introduction

As a former high school teacher, my greatest struggle with student outcomes was not with inability but disengagement. When students failed my class, it was all too often not because of low scores on a multitude of assignments or inability to grasp key concepts. Rather, it was because far too many assignments were never handed in, far too many classes were missed, or a student lacked the engagement to put forth a legitimate effort. It was my observation that many of these students struggled to see a purpose in the education being offered to them or meaning to their attendance in school. My experiences as a high school teacher are not in isolation. In fact, it has been indicated that, "40 to 60 percent of high school students are chronically disengaged; they are inattentive, exert little effort, do not complete tasks, and claim to be bored" (National Research Council, 2004, p. 18). Additionally, Larson (2000) described America's youth as displaying "boredom, alienation, and disconnection" (p. 170). What's more, the stakes of improving student engagement are high. Marks (2000) reported, "Students who are engaged with school are more likely to learn, to find the experience rewarding, to graduate, and to pursue higher education" (p. 154). Indeed, educators, education reformers, and anyone concerned with youth development cannot afford to ignore student engagement. Larson (2000) stated, "A central question of youth development is how to get adolescents' fires lit, how to have them develop the complex of dispositions and skills needed to take charge of their lives" (p. 170). As a high school teacher, this is perhaps the most central issue for which I sought a solution.

One potential solution to this chronic problem of student disengagement is project-based learning (PBL). While there is no universally accepted definition of PBL, one commonly-cited list of criteria of PBL is that of Gijbels, Dochy, Vanden Bossche, and Segers (2005):

1. Learning is student-centered.

- 2. Learning occurs in small student groups.
- 3. A tutor is present as a facilitator or guide.
- 4. Authentic problems are presented at the beginning of the learning sequence,

before any preparation or study has occurred.

5. The problems encountered are used as tools to achieve the required knowledge and the problem-solving skills necessary to eventually solve the problems.

6. New information is acquired through self-directed learning (pp. 29-30).

Whatever definition used, broadly speaking, PBL aims to give students more direct control over their learning experience by presenting them with authentic problems that they and their peers are collaboratively responsible for finding solutions. The aim of this paper is to demonstrate the application of a civic participation-themed PBL in a high school American history classroom and assess with a quasi-experimental design the effectiveness of the PBL in improving student behavioral engagement and student performance.

#### **Literature Review**

#### **Defining Engagement**

One of the most challenging aspects of studying student engagement is determining precisely what behaviors constitute a demonstration of engagement or disengagement. Furthermore, not all engagement is created equally. Engagement among students has been shown to be multifaceted in nature. One of the most common methods of dichotomization of engagement in an academic context is into the categories of behavioral, emotional, and cognitive engagement (Fredricks, Bluemenfeld, & Paris, 2004). Behavioral engagement is demonstrated by involvement, attendance, and effort in classroom activities (Fredricks, 2011). Most notably to this study, behavioral engagement has been previously measured by the completion of academic assignments (Connell, Spencer, & Aber, 1994; Finn & Rock, 1997; Fredricks et al, 2004). Emotional engagement includes prevalent positive emotions such as belonging, happiness, and interest as opposed to negative emotions such as isolation, anxiety, or boredom. Finally, cognitive engagement is defined as a willingness to put forth cognitive energies to understand complex ideas (Fredricks, 2011). Due to the multifaceted nature of student engagement, isolating factors that can demonstrate an influence upon engagement can prove problematic. This study, however, will emphasize behavior management and its role in completing assignments within a class.

#### **Benefits of Project-Based Learning**

Project-based learning (PBL) has been tied to a host of educational benefits. For example, PBL courses have demonstrated higher test scores in an Advanced Placement U.S. Government and Politics (Parker et al., 2013), science (Geier, Blumenfeld, Marx, Krajcik, Fishman, Soloway, & Clay-Chambers, J, 2008), and college entry-level chemistry (Barak & Dori, 2004). PBL has also demonstrated improved content knowledge and retention in a high school economics course (Mergendoller, Maxwell, & Bellisimo, 2006) as well as a master's level teacher education course (Garcia, 2016). PBL has been demonstrated to promote greater tolerance in diverse classrooms (Voronchenko, Klimenko, & Kostina, 2015). Additionally, in survey data collected in a graduate level PBL course, students demonstrated improved "responsibility, problem solving, self-direction, communication, and creativity" (Wurdinger & Qureshi, 2014, p. 283). In the same study, however, students demonstrated no benefits in "time management, collaboration, and work ethic" (Wurdinger & Qureshi, 2014, p. 283). Collectively, it can be seen that PBL represents a promising teaching methodology that justifies further research into its potential benefits.

#### **Targeting Engagement through Project-based Learning**

Although my teaching experiences and literature (National Research Council 2004; Larson, 2000) would indicate that student disengagement is a significant problem in America, engagement has also been shown to be a malleable quality that can be improved with effective instruction (Fredricks et al, 2004; Lerner, Almerigi, Theokas, & Lerner, 2005). It would seem logical that PBL, a strategy that specifically aims to increase the degree of student involvement in solving authentic, meaningful problems, would lead to increased student engagement if implemented effectively. Nevertheless, the data linking PBL's ability to improve student engagement is yet in its developmental stage. Several scholars have given theoretical support to giving students greater independence and authentic work in schools, a centerpiece of PBL, in order to increase engagement (Fredricks, 2011; Fredricks et al, 2004; Larson 2000; Marks, 2000). Lattimer and Riordan (2011) provided antidotal evidence of High Tech Middle School, a charter school which emphasizes project-based learning, leading to increased student engagement through practical, authentic project in all subject areas. Overwhelmingly, the content areas that had been able to produce the most promising data regarding PBL's potential to increase student engagement are science, technology, engineering, and mathematics (STEM). This is not surprising because PBL is most associated with STEM classes (Duke, Halvorsen, & Strachan, 2016). In STEM classes, PBL has been able to demonstrate increased student engagement (Chu, Minasian, & Yi, 2012; Holmes & Hwang, 2014; Robinson, 2013; Zhang, Peng, & Hung, 2009). While these results are encouraging, greater research needs to be done on PBL's ability to increase student engagement in social science courses, such as history. Additionally, greater attention is needed in differentiating between behavioral, emotional, and cognitive engagement among students (Fredricks et al., 2004).

#### Background

In 2010, I had the opportunity to attend the National Council for the Social Studies Conference in Denver, CO. Among the many excellent speakers I was able to see over the weekend was Dr. Eric B. Freedman. Dr. Freedman presented on a unit of instruction he had created on the Vietnam War and had based his dissertation upon. In the unit, students were asked to create an original textbook on the Vietnam War based exclusively on primary sources provided by the instructor. By creating their original history on the Vietnam War, they were simulating the work of historians. For a complete account of Dr. Freedman's original unit, see Freedman (2015). I was immediately impressed because of the potential I saw for creative and rigorous work with primary sources as well as an appreciation for the history-making process, the work of professional historians. I used an adapted version of Dr. Freedman's work as a focal point of my high school American History course for the last seven years.

#### **Vietnam Textbook Project**

In my unit adapted from Dr. Freedman's, students were presented a series of primary sources (see table 1). My choice of sources, which varied slightly from year to year but remained constant within the years included in this study, admittedly gave an American emphasis to the Vietnam War. This was not out of a desire to skew the unit toward an exclusively American perspective but rather out of recognition of content covered by the same students with my colleagues the previous year in their World History course. In retrospect, a more global perspective of the Vietnam War could have been taken, although at the time of this

study, I decided it necessary to keep the primary source selection consistent, as to not introduce unnecessary extraneous variables.

Table 1

Document	Date		
The Final Declaration of The Geneva Conference:	July 21, 1954		
On Restoring Peace in Indochina			
Thích Quảng Đức Photograph/Dept. of State Telegraph on	June 11, 1963/ August 24, 1963		
Ngo Dinh Diem			
Tonkin Gulf Resolution	August 7, 1964		
Dean Rusk NBC Interview Excerpt	August 5, 1964		
Lyndon Johnson/Robert Anderson Phone Conversation	August 3, 1964		
Excerpt			
McGeorge Bundy Memo to Lyndon Johnson Excerpt	January 6, 1964		
Lyndon Johnson Speech on Vietnam Excerpt	July 28, 1965		
Richard Nixon Silent Majority Speech Excerpt	November 3, 1969		
John Kerry Senate Hearing Excerpt	April 22, 1971		
Martin Luther King Jr. Speech at Riverside Church Excerpt	April 4, 1967		
A Marine's Guide to the Republic of Vietnam Excerpt	May, 1968		
"Dear America: Letters Home from Vietnam"	1987		
Treaty of Paris Excerpts	January 24, 1973		
Vietnam Veteran Guest Speaker	No Date		
Fall of Saigon News Coverage – NBC and BBC	April 30, 1975		
What Should We Tell Our Children About Vietnam?	1988		
Excerpts			

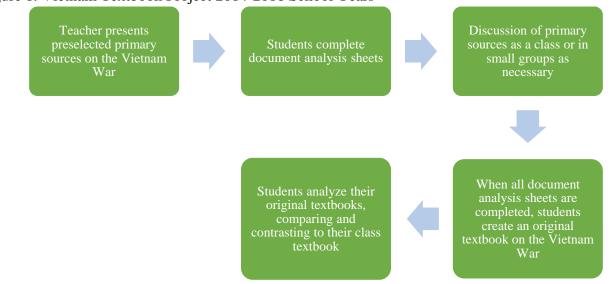
Vietnam Textbook Project Documents

Note. The Vietnam Veteran Guest Speaker primary source is bolded for emphasis. Vietnam veterans came to speak to my classes every year the project was conducted, however, it only included a project-based learning experience during the 2016-2017 school year.

Additionally, I am aware that my definition of "primary" source is taken a bit liberally, particularly with the documentary, "Dear America: Letters Home from Vietnam". The video is based around a compilation of letters written by American Vietnam servicemen and servicewomen. Consequentially, my students watched the video as a convenient, efficient, and student-friendly substitution for reading dozens of letters. In many years, when students were absent the day of our class viewing of the video, I provided transcripts of several of the letters presented in the video. It was a seamless substitution, the only downside of which was that absent students reading the texts were exposed to less letters and therefore less content. Additionally, the video is of sufficient quality to justify its use in a unit of otherwise more "pure" primary sources. Finally, in two cases, I chose to combine two primary sources: first the Thích Quảng Đức photograph and Department of State Telegraph on Ngo Dinh Diem and secondly the NBC and BBC broadcasts of the Fall of Saigon. This was again done for efficiency's sake. In the case of the former, it was also done so that I could more directly show the relationship between the two documents. Protests against the Diem government due to its corruption were an important factor in the American government's reconsideration of its support for the Diem regime.

For each primary source, students were asked to complete a document analysis sheet, see Appendix A. It has been abbreviated only by reducing the spaces for students to write. This form, along with class discussion, encourages students to engage in the historical thought process about a document's perspective, bias, and message as well as its usefulness or limitations in the history-making process. Upon completion of their primary sources and document analysis sheets, students had compiled a large amount of data on the Vietnam War. Their greatest challenge was then deciding how to prioritize and organize that wealth of information. Students were asked to create a three-page textbook of the Vietnam War in a digital format. Each textbook was an original history of the Vietnam War with few limitations placed upon the students other than the inclusion of three pictures. Students were able to use any approved computer program, arrange their textbook in any fashion they found to be of the greatest historical effectiveness, and emphasize any aspect of the War they saw fit. Because of the limitation of three pages, however, students were forced to make difficult decisions about what to leave out or how to abbreviate.

Upon completion of the project, students were able to reflect on their history-making experience and use it to critique their classroom's textbook. This stage of the project offered perhaps the most fulfilling lessons for me as a teacher to watch my students realize. Once they had created an original textbook, students were able to realize the limitations of textbooks in general. They were able to see that textbooks are often forced to give limited coverage of important aspects of history. Finally, they received a basic introduction into being a critical historian, a creator, and a critic of history rather than a retainer of it. See figure 1 for a visualization of the textbook project from 2014-2016 school years. Figure 1. Vietnam Textbook Project 2014-2016 School Years



#### **Kansas Honor Flights Service Project**

For several years, I was largely satisfied with my adapted version of Dr. Freedman's unit. I had overseen many students create content rich, professional looking textbooks. During the 2016-2017 school year, however, I decided that I could be successful at a higher level and with a higher purpose. In an effort to decrease the number of students who became disengaged and did not complete the assignment, I decided to imbed a project-based learning experience. As noted in table 1, I had been privileged to have had a number of Vietnam veterans come to my class and

share their experiences, stories, and insights with my students. Every year I had taught the Vietnam textbook assignment, I incorporated these guest speakers as one of our primary sources. It was always a highlight of the year. Our "authentic problem" (Gijbels et al., 2005, p. 30) presented in our project-based learning experience was to fund raise to surprise our Vietnam veteran guest speaker with a flight to Washington, D.C. through Kansas Honor Flights.

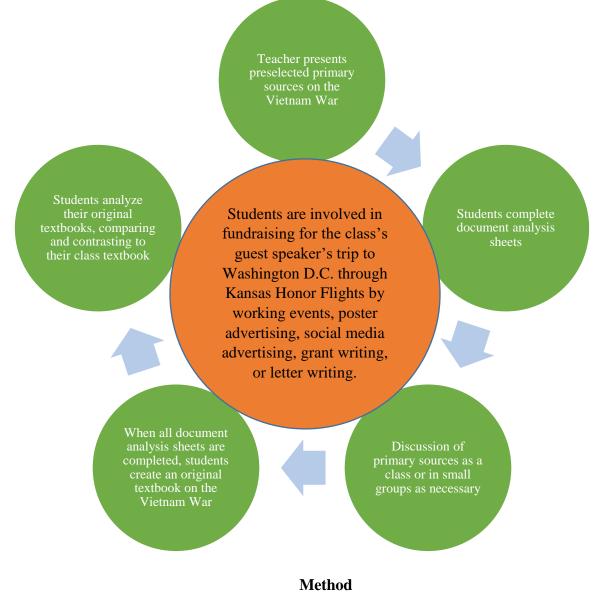
Kansas Honor Flights is an organization whose sole purpose is to raise funds to fly Kansas veterans to Washington, D.C. to visit memorials, meet representatives, and experience other points of interest as a small demonstration of gratitude toward those who served our nation. I first became familiar with Kansas Honor Flights when my grandfather-in-law, a Korean War veteran, was fortunate enough to be able to participate in a Kansas Honor Flight. Focusing on our oldest veterans, they are currently transitioning from primarily servicing World War II and Korean War veterans to Vietnam veterans. When I had the opportunity to meet my grandfatherin-law and the rest of the participants in that particular Kansas Honor Flight for their arrival flight, I was impressed by the mission and grassroots nature of the organization. It was not until after later reflection that I decided that an excellent project experience for my students would be to work to raise funds to sponsor our guest speaker for the year to participate in such a Flight.

The fund-raising project would take the entire school year with admittedly bold goals. I sought to facilitate a meaningful experience of civic participation through project-based learning. Additionally, I planned to study the impact of project-based learning on student behavioral engagement (as measured by rate of completion of the project) and student performance on the project (as measured by average percentage grade on the project). Because our guest speaker was a primary source in our Vietnam textbook project, our project-based learning experience was engrained into our class curriculum. While I had given the general structure of the project, much of the decision making and control of its ultimate success or failure was up to the students.

I first contacted my building principal who was immediately supportive of the project. Next, I contacted Kansas Honor Flights. They were not only open to but excited about my potential class project and interested in helping any way they could. I then contacted our building's athletic director about potential school-related fundraising opportunities. I was able to obtain opportunities for students to work tailgate events for our home football games in the fall and concession stand events for four track events in the spring.

Early in the school year, I presented my plan to my students. While they must have been taken aback by their new teacher introducing an unconventional class project, they were for the most part excited. I discussed each of the project committees I had created and told them that after I was able to discuss it with all of my classes, I would allow for open signups. Committees included grant writers, who would apply for a small grant through a local educational foundation; poster advertising, which would construct our physical advertising for the project; poster setup/tear down; social media advertising; and workers for the actual fundraising events. For all Kansas Honor Flights, in the weeks leading up to a flight, family members of the veterans are discreetly contacted and asked to write letters of thanks to the service men and women. To fulfill this aspect of the flight for our guest speaker, I created a committee of letter writers who would write to our veteran guest speaker and express our collective gratitude. I created committee chairs for several of the committees who acted as liaisons between the committee and myself and leadership within the committee. At the time, I decided that some of the committees were too small to justify a chair. All positions including committee chairs were entirely voluntary, but involvement in the project was an expectation of the class. See figure 2 for a visualization of the Vietnam textbook project for the 2016-2017 school year.

Figure 2. Vietnam Textbook Project 2016-2017 School Year



#### **Participants**

All students involved in this project were enrolled in my American History course in the same Midwest urban high school. The overwhelming majority of students were juniors (age 16 or 17) with an occasional student taking the course a second time as a senior. The Kansas State Department of Education (2016) reports that through the years of the study, the school student population averaged approximately 1000 students. The free/reduced lunch rate averaged approximately 60 percent. The race/ethnicity breakdown averaged approximately 65 percent White, 18 percent Hispanic, 5 percent African American, and the remaining classified as "other." During the years of this study, no significant demographic changes to the school occurred.

#### **Research Design**

This study consisted of a quasi-experimental research design. The control group consisted of my students from the 2014-2016 spring semesters (n=302) who completed the

7

Vietnam textbook project but without a project-based learning experience. The experimental group was my students from the 2017 spring semester (n=70) who participated in the project-based learning experience. While this study lacked randomization, the cornerstone of experimental research, quasi-experiments if well-designed can be powerful research models, particularly in educational settings where randomization is not possible or appropriate (Schneider, Carnoy, Kilpatrick, Schmidt, & Shavelson, 2007). In my case, as a practicing high school history teacher with no control over my rosters from one year or even class to another, randomization would have been problematic or impossible. Furthermore, including certain groups of my students in a given year in the project-based learning experiment while excluding others would have likely made for a toxic environment in the control group classes and further introduce extraneous variables, thereby calling the validly of the randomization into question.

While I had assigned the Vietnam textbook project since 2011, only three years of control group were included in this study. This was in order to control extraneous variables such as improved instruction after having taught the project for several years and that I began teaching in a "class within a class" setting in 2014. This added a significant special education population to my classes and changed the teaching environment with my co-teacher also providing instruction. From 2014-2017, the textbook project remained nearly identical with no known significant changes to student population.

I tracked two dependent variables. First, student performance was measured by percentage grade of completed textbook projects. Scores for all groups were calculated by a class rubric, consistent for every year of the study. See appendix B for a copy of the project rubric. While an identical rubric was used for all students involved in this study, it was not a validated instrument. This study represents the utilization of previous school years' data in the Vietnam textbook unit and the introduction of project-based learning into the current year. Because of this structure, it was deemed necessary to keep the textbook project as identical as possible (outside the introduction of project-based learning). Consequentially, the previouslyused rubric was retained. In that spirit, efforts were made to be consistent to the rubric, particularly in terms of expectations of the experimental group as compared to the control group. While the rubric for the textbook project lacked validation, it was my (as a classroom teacher rather than researcher) attempt to measure students' achievement in the creation of a complete, accurate, logical, and cohesive representation of the Vietnam War, expectations that remained consistent throughout all groups involved in the study. The second variable tracked was student behavioral engagement. This was measured by the straightforward measure of completion rate of the textbook assignment.

#### **Results**

This study had an 80.5% participation rate. While high school students proved problematic to get to complete a consent form and return it, considerable efforts were made to include as many of my students into the study as possible. Although they were not available yet, parents that came to parent-teacher conferences were alerted ahead of time that the consent forms would be coming. Students were given the forms and reminded of them daily. After approximately two weeks, all parents who had not yet signed a consent form were emailed. Parents that did not respond that week were then called as a reminder. Finally, another email was sent, this time to students, reminding them of the consent form.

#### **Student Engagement**

In order to quantify student engagement, the rate of completion of Vietnam textbooks was tracked. Students in the 2017 (experimental) group completed their textbook at a 12% higher rate than the 2014-2016 (control) group (92.9% verses 80.8%). In order to put greater meaning to that, an analysis of variance (ANOVA) was calculated. Because of unequal variances, the Brown unequal variance *F*-test was utilized to compare the effects of method of instruction (2014-2016 verses 2017) on rate of completion (Klockars, 2010). A statistically significant effect was found at the p < .05 level, [F(1, 152.78) = 9.853, p = 0.002]. Furthermore, the Cohen's *d* effect size was .361. This demonstrates that with a moderate effect size, students in the 2017 spring semester were statistically more likely to complete their textbooks than their peers in the 2014-2016 spring semesters.

#### **Student Performance**

Student performance was tracked by percent grade on the project-based on the project rubric. In order to avoid the influence of a change in student engagement (completion of the project), all zeros were removed from the data for this analysis. This way, only students who completed the project were compared. An analysis of variance (ANOVA) was used to compare the effects of method of instruction (2014-2016 verses 2017) on student performance (Klockars, 2010). Statistically significant results were not found at the p < .05 level, [F(1, 307) = 0.051, p = 0.82]. This means that students in the 2017 spring semester did not show statistically significant improvement in their performance on their textbooks than their 2014-2016 spring semester peers. It should be noted that the experimental group increased their average score compared to the control group by a very small, insignificant degree (70.2% average grade in the control group, 70.8% in the experimental group).

#### Discussion

These results suggest that incorporating project-based learning into course work can increase student behavioral engagement. This supports the growing body of literature indicating PBL's usefulness in increasing student engagement (Chu, et al., 2012; Holmes & Hwang, 2014; Robinson, 2013; Zhang, Peng, & Hung, 2009). Still, current inconsistency of both measurement of engagement and differentiation of the multiple facets of engagement (behavioral, emotional, and cognitive) make placing this study in the context of existing literature problematic. Still, otherwise disengaged students seem to benefit from PBL.

This study was not able to demonstrate improved performance on the class project with the introduction of PBL. While a number of studies have been able to demonstrate a positive impact of PBL on student performance, (Barak & Dori, 2004; Garcia, 2016; Geier et al., 2008; Mergendoller et al., 2006; Parker et al., 2013), most of this existing literature measured performance and/or knowledge retention as a test rather than a project that was embedded into the project-based learning experience. Despite the inability to demonstrate an association between PBL and student performance, it is worth nothing that student behavioral engagement demonstrated improvement without sacrificing student performance. In other words, this study demonstrated that more of my students completed their assignment but at the same average quality of previous years.

#### **Implications and Conclusion**

This study was able to demonstrate a significant increase in behavioral student engagement with the implementation of PBL. These results confirmed much of existing

As the classroom teacher that implemented the PBL experience, I was not surprised by these positive results linking PBL to increased behavioral engagement. Throughout the unit, I felt as though my students were engaged in a way I had not previously experienced. Time after time, I was impressed and humbled by seeing high school teenagers, perhaps at times the most difficult possible population to engage, truly seeing meaning in this project. I saw this when my poster-making committee decided to meet at a local coffee shop to make posters on a weekend. I saw this when one student, who transferred from my class after the fall semester and was therefore unable to complete her obligation to the project, approached me and asked if she could work a concession stand event just to help the cause. I saw this when a group of students were crying in the front row the day of our veteran guest speaker's presentation when I was about to surprise him with his sponsored flight. I saw this with the attentiveness with which my students listened to me read the local newspaper article that had been written about our project. Finally, I saw this in the resistance my students gave me when I suggested opening our guest speaker event to other classes in the school. As one student put it, "If they want a guest speaker, they can put in the work we did." Although the spirit of this comment was a bit more selfish than I would like out of my students, I can't imagine that any teacher has ever seen this sense of ownership, engagement, and class unity from students who have been assigned worksheets. My only question was if this increased engagement which I perceived based on my experience as a classroom teacher would lead to more students completing the assignment. This study indicated that it can.

This is not to say the project went perfectly. First, any teacher would love to improve student performance in addition to engagement. This study was not able to achieve this. Additionally, the structure of the project itself was imperfect. If I were to recreate it, I would create a committee chair for every committee. At the time of creating the committees, it did not seem necessary to give some of the smallest committees a chair. Several committee chairs, however, seemed to thrive when given a sense of leadership. I would have loved to have given this opportunity to a few more of my students. If given the chance, I also would do a better job at brainstorming with the social media committee. My intention was to give the committee considerable freedom, responsibility, and the sense of an authentic problem to solve. This was based on best practices by current literature (Fredricks et al., 2004; Larson, 2000; Marks, 2000). In my case, this was perhaps in error. The social media committee proved ineffective, uninspired, and unmotivated; the end result of which was the replacement of the committee chair. Had I given more direction and leadership to the committee, this potentially could have been avoided. Finally, I would have found more for my grant writing committee to do. The grant writing process proved very simple, and those students ultimately put in considerably less work than their peers in other committees. Those flaws considered, the project was a success, one that I hope other teachers are inspired to emulate, and the source of greatest pride in my secondary education career.

#### References

- Barak, M. & Dori, Y. (2004). Enhancing undergraduate students' chemistry understanding through project-based learning in an IT environment. *Science Education*, 89, 117-139. doi:10.1002/sce.20027
- Chu, R., Minasian, R., Yi, X. (2012). Inspiring student learning in ICT communications electronics through a new integrated project-based learning approach. *International Journal of Electrical Engineering Education*, 49(2), 127-135. doi:10.7227/IJEEE.49.2.3
- Connell, J. P., Spencer, M. B., & Aber, J. L. (1994). Educational risk and resilience in African American youth: Context, self, action, and outcomes in school. *Child Development*, 65, 493–506. doi:10.2307/1131398
- Duke, N., Halvorsen, A., & Strachan, S. (2016). Project-based learning not just for STEM anymore. *Phi Delta Kappan*, *98*(1), 14-19.
- Finn, J. D., & Rock, D. A. (1997). Academic success among students at risk for school failure. *Journal of Applied Psychology*, 82, 221–234. doi:10.1037/0021-9010.82.2.221
- Fredricks, J. (2011). Engagement in school and out-of-school contexts: A multidimensional view of engagement. *Theory into Practice*, *50*, 327-335. doi:10.1080/00405841.2011.607401
- Fredricks, J., Blumenfeld, P., & Paris, A. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Education Research*, 74, 59-109.
- Freedman, E. (2015). "What happened needs to be told": Fostering critical historical reasoning in the classroom. *Cognition and Instruction*, 33, 357-398. doi:10.1080/07370008.2015.1101465
- Garcia, C. (2016). Project-based learning in virtual groups Collaboration and learning outcomes in a virtual training course for teachers. *Procedia - Social and Behavioral Sciences*, 228, 100-105. doi:10.1016/j.sbspro.2016.07.015
- Geier, R., Blumenfeld, P. C., Marx, R. W., Krajcik, J. S., Fishman, B., Soloway, E., & Clay-Chambers, J. (2008). Standardized test outcomes for students engaged in inquiry-based science curricula in the context of urban reform. *Journal of Research in Science Teaching*, 45, 922-939.
- Gijbels, D., Dochy, F., Vanden Bossche, P., & Segers, N. (2005). Effect of problem based learning: A meta-analysis from the angle of assessment. *Review of Educational Research*, 75, 27–61.
- Holmes, V. & Hwang, Y. (2014). Exploring the effects of project-based learning in secondary mathematics education. *The Journal of Educational Research*, 109, 449-463. doi:10.1080/00220671.2014.979911
- Kansas State Department of Education. (2016). *Kansas report card 2015-2016*. Retrieved from http://ksreportcard.ksde.org/demographics.aspx?org\_no=State&rptType=3
- Klockars, A. (2010). Analysis of variance. In G. Hancock & R. Mueller (Eds.), *The reviewer's guide to quantitative methods in the social sciences* (pp. 1-13). New York, NY: Routledge.
- Larson, R. (2000). Toward a psychology of positive youth development. *American Psychologist*, 55, 170-183. doi:10.1037//0003-066x.55.1.170
- Lattimer, H., & Riordan, R. (2011). Project-based learning engages students in meaningful work. *Middle School Journal*, 43(2), 18-23. doi:10.1080/00940771.2011.11461797
- Lerner, R., Alberigi, J., Theokas, C., & Lerner, J. (2005). Positive youth development. *Journal of Early Adolescence*, 25, 10-16. doi:10.1177/0272431604273211

- Marks, H. (2000). Student engagement in instructional activity: Patterns in elementary, middle, and high school years. *American Educational Research Journal*, *37*, 153-184.
- Mergendoller, J. R., Maxwell, N. L., & Bellisimo, Y. (2006). The effectiveness of problem-based instruction: A comparative study of instructional methods and student characteristics. *Interdisciplinary Journal of Problem-Based Learning*, 1(2). doi:10.7771/1541-5015.1026
- National Research Council. (2004). *Engaging schools: Fostering high school students' motivation to learn*. Washington, DC: The National Academies Press.
- Parker, W.C., Lo, J., Yeo, A.J., Valencia, S.W., Nguyen, D., Abbott, R.D. ... Vye, N.J. (2013). Beyond breadth-speed-test: Toward deeper knowing and engagement in an Advanced Placement course. *American Educational Research Journal*, 50, 1424-1459.
- Robinson, J. (2013). Project-based learning: Improving student engagement and performance in the laboratory. *Analytical and Bioanalytical Chemistry*, 405, 7-13. doi:10.1007/s00216-012-6473-x
- Schneider, B., Carnoy, M., Kilpatrick, J., Schmidt, W., & Shavelson R. (2007). Estimating causal effects using experimental and observational designs: A think tank white paper. Washington DC: American Educational Research Association.
- Voronchenko, T., Klimenko, T., & Kostina I. (2015). Learning to live in a global world: Projectbased learning in multicultural student groups as a pedagogy of tolerance strategy. *Procedia - Social and Behavioral Sciences, 191*, 1489-1495. doi:10.1016/j.sbspro.2015.04.472
- Wurdinger, S. & Qureshi, M. (2015). Enhancing college students' life skills through project based learning. *Innovative Higher Education*, 40, 279-286. doi:10.1007/s10755-014-9314-3
- Zhang, K., Peng, S., & Hung, J. (2009). Online collaborative learning in a project-based learning environment in Taiwan: A case study on undergraduate students' perspectives. *Educational Media International*, 46, 123–135. doi:10.1080/09523980902933425

## Appendix A Abbreviated Document Analysis Sheet

Name						
Document Analysis Sheet						
Document:						
Author/Creator:						
Type of document (diary, photograph, speech, e	tc):					
Date the document was created (if known):						
Who is the intended audience?						
What is the purpose of the document?						
How might the author's identity, intended audie	nce, and the document	's purpose affect what				
was written or depicted?						
Give an overall summary of what the document	is saying or showing:					
How much space in your 3 page history of the V	vietnam War does this	author's perspective				
merit? (This is not binding but rather for the put	pose of getting you to	think about each				
source's importance)						
1 2 3	4	5				
Justify your answer:						

	Vietnam Textbook Project Rubric							
Completeness of the Vietnam War Story								
0	5	10	15	20	25			
Student does	Student has	Student has	Student has	Student has	Student tells			
not tell the	some but	told the	told the	told the	a complete			
Vietnam War	little	Vietnam War	Vietnam War	Vietnam War	story with no			
story in any	historical	story but	story but with	story but with	significant			
meaningful	information	with several	a few major	a few minor	historical			
way		major gaps	gaps	gaps	gaps.			
	ſ	Use of a Vari	ety of Sources		Γ			
0	3	6	9	12	15			
Student uses	Student has	Major gaps	Minor gaps	Student has	Student has			
no primary	used a few	exist in the	exist in the	largely	creatively			
sources in	sources only	student's use	student's use	woven the	woven the			
any logical,		of sources	of sources	sources	primary			
historical			and/or the	together in a	sources			
fashion.			student has	logical	together. All			
			unsuccessfully	fashion, but	sources are			
			woven the	minor gaps	used or any			
			sources	may exist	unused			
			together		sources are			
					for a clear,			
					logical			
					reason			
	[		ormatting		Γ			
0	2	4	6	8	10			
No clear	Many	Several	Many minor	Only a few	No			
effort to	significant	significant	formatting	minor	significant			
format paper	formatting	formatting	errors	formatting	formatting			
was made	errors	errors	(grammar,	errors are	errors			
(grammar,	(grammar,	(grammar,	spelling,	present	(grammar,			
spelling,	spelling,	spelling,	punctuation, 3	(grammar,	spelling,			
punctuation,	punctuation,	punctuation,	pages, 3	spelling,	punctuation,			
3 pages, 3	3 pages, 3	3 pages, 3	pictures, etc.)	punctuation,	3 pages, 3			
pictures, etc.)	pictures, etc.)	pictures, etc.)		3 pages, 3	pictures, etc.)			
				pictures, etc.)				
		mpleted Docum	ent Analysis Sh		I			
0	3	6	9	12	15			
None	1-5	6-9	10-12	13-15	All 16			
completed	completed	completed	completed	completed	completed			
Visual Appeal of Textbook								
0	2	4	6	8	10			
Textbook	Major	Reformatting	Major errors	Minor errors	Student			
looks	reformatting	of the	exist that keep	exist that	clearly took			
sloppily done	of the	textbook's	the textbook	keep the	pride in			

Appendix B Vietnam Textbook Project Rubric

and/or	textbook's	appearance is	from	textbook	creating a	
unacceptable	appearance is	needed	appearing	from	professional-	
	needed		professionally	appearing	looking	
			done	professionally	textbook	
				done		
	Proper Use of Class Time					
0	1	2	3	4	5	
Student	Student	Student	Student	Student	Student	
refused to	accomplished	required	required	required only	diligently	
work in class	little work in	many major	major	minor	worked in	
	class	redirections	redirections in	redirection in	class with no	
		in class	class	class	redirections	
					needed	
Total 🔹						

**Comments:** 

Total



18