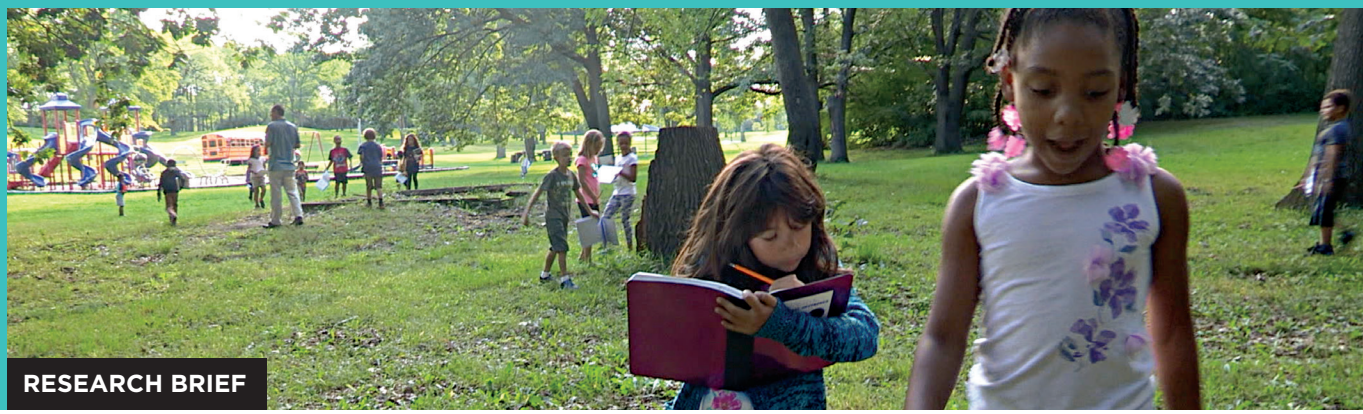

RESEARCH BRIEF

The Impact of Project-Based Learning on Social Studies and Literacy Learning in Low-Income Schools

Introduction

Project-based learning is an inquiry-based educational approach in which students are active learners who work on complex and authentic tasks leading to a public product. While a growing body of research shows the positive effects of high-quality, project-based learning (PBL) on student achievement, the majority of these studies have been conducted in middle and high schools. More investigation is needed into the impact of PBL on elementary school students' learning in social studies, reading, and writing as well as in low-income communities. For this reason, the research study described in this brief contributes to the field in important ways.

The study explored the effects of a PBL social studies curriculum on social studies and literacy achievement and motivation among second-grade students in low-income, low-performing schools. The results showed a statistically significant and positive effect of the PBL curriculum, with five to six more months of growth in social studies and about two more months of growth in literacy achievement. These effects were even greater with increased consistency in implementing the PBL lessons.

It is important to understand the impact of PBL on the academic achievement of students from low-income backgrounds because practices common to PBL, which give students more autonomy over their learning than typical instruction affords them, are less frequently used in high-poverty schools as compared with those with students from higher-income communities. The findings of this study indicate that this issue deserves the attention of system leaders and policy makers, as there is strong evidence that all students can benefit from engaging in sense making through project-based learning.

About the study

Researchers investigated the impact of project-based learning and limited, aligned professional development on social studies and literacy achievement and on student motivation. Participating students were second graders from schools serving predominantly low-income families.

Teachers were randomly assigned to teach four PBL social studies and literacy units or were assigned to a comparison group in which they taught social studies as they normally would. Each of the PBL sessions was approximately 45 minutes long, and teachers instructed between 48 and 86 sessions over the course of the year. At the end of the year, students in the experimental group showed greater growth than the comparison

group in social studies knowledge and informational reading.

Projects were designed to have an authentic purpose and address a problem or take advantage of an opportunity in the students' communities and beyond, such as persuading local officials to improve a park or another public space, creating informational fliers about a local business for that business to distribute, and developing a brochure to attract people to move to the area. Each project was the driver of learning throughout a unit.

The approach to PBL tested in the study included explicit instruction and student autonomy. Each lesson in the PBL classrooms involved a teacher-led component, in which educators explicitly taught skills or concepts, and a student-led activity, in which the teacher supported students in leading their own learning.

The researchers explored how this PBL approach impacted second graders' performance on measures of social studies knowledge, informational reading, informational writing, and student motivation. The study also examined whether—for the teachers using PBL—greater consistency with lesson plans led to greater student learning and motivation.

This study, funded by Lucas Education Research, a division of the George Lucas Educational Foundation, contributes to the research landscape in several important ways. It was carried out in high-poverty, low-performing schools, and the majority of participating students were from underrepresented racial and ethnic groups. As a result, the study provides important information about the effect of PBL on those groups of students. Schools with high proportions of students living in economic poverty and underserved minorities are more likely to provide instruction that is focused on basic reading and math skills and less likely to emphasize higher-order thinking and discussion skills found in rigorous PBL instruction. The study also addresses the need to explore the impact of PBL on student achievement in elementary grades. In addition, the study's randomized design allowed the researchers to identify the PBL curriculum as the key variable that is different between the groups.

About Project PLACE

The researcher-developed Project PLACE curriculum is openly available. This year-long, interdisciplinary PBL approach to social studies and literacy includes four projects designed to be completed over 20 sessions lasting approximately 45 minutes. The topics covered include the following:

ECONOMICS

Producers and producing in our community
Students create an informational flyer about a local business for that business's use and then create and sell their own good or service to raise money for a cause.

GEOGRAPHY

Brochure about the local community
Students develop a brochure to persuade people visiting or considering settling in the local community that it has compelling natural and human characteristics.

HISTORY

Postcards about the community's past
Students develop postcards about the history of the local community to display or sell in a local institution, such as a library or historical society.

CIVICS AND GOVERNMENT

The park/public-space proposal project
Students develop a proposal, conveyed in letters and a group presentation, to persuade the local city government to make improvements to a local park or another public space.

Methodology

Researchers from the University of Michigan and Michigan State University designed the study as a cluster (or group) randomized controlled trial. The researchers randomly assigned 48 teachers to an experimental or a comparison group within second grade in each school. The teachers were from 20 elementary schools in 11 districts. At least 65 percent of the students in the schools were eligible for free or reduced-priced lunch. In addition, performance on state tests in social studies, reading, and writing were below the state average.

STUDY DETAILS

48 teachers from 20 elementary schools in 11 districts participated in the study. At least 65% of the students were eligible for free or reduced-price lunch.

All but one of the teachers in the experimental group had no experience with PBL. They attended a three-hour initial professional-development workshop and watched three follow-up recorded webinars. Research assistants visited the teachers in the experimental group an average of 11 times to observe them and provide coaching. The experimental group also received detailed lesson plans that highlighted opportunities for connections to the local community and provided space for teacher and student voice and choice. Sessions typically involved whole-group instruction to generate and sustain interest in a project and provide direction, then guided small-group or individual instruction, and finally an opportunity for review and reflection as a class.

Teachers in the comparison group were asked to teach social studies as they normally would during any other school year. They used a number of curricular approaches. Each teacher in that group agreed to teach the same number of lessons as those in the experimental group—a target of 80 lessons. Teachers in both groups were systematically observed.

To measure student learning growth, researchers developed, validated, and administered assessments in social studies, informational reading, and informational writing near the beginning and end of the school year. They also administered a survey to assess students' motivation in learning social studies and literacy.

Results

The study produced the following results:

- The experimental group, those using project-based learning, scored higher than the comparison group on the social studies assessment (see Table 1). PBL led to a **63 percent gain** in social studies for this group as compared with the comparison group. That translates to **five to six months of increased learning for the year**.
- The experimental group also scored higher on the informational-reading assessment (see Table 1). PBL led to a **23 percent gain in informational reading**, which represents an **additional two months in learning for the year**.
- Overall, the Project PLACE PBL program did not have a statistically significant effect on measures of student achievement in informational writing or motivation. However, performance on those measures was significantly greater in classrooms with higher levels of implementation. More consistent use of the curriculum's lesson plans was associated with higher growth across measures, with statistically significant and positive effects in favor of the PBL groups' performance on informational reading (*ES* = .583, *p* = .03), informational writing (*ES* = .239, *p* = .06), and motivation (*ES* = .287, *p* = .016). Note that *ES* stands for "effect size," a simple way of quantifying the difference between two groups. The *p* stands for "probability." A *p* value helps to determine the significance of the results.

Table 1. Significant Effects of Project PLACE on Student Performance

	Effects of Project-Based Learning			
	Coefficient	Standard Error	*p* Value	Effect Size
Social Studies	0.078	0.018	<.001***	0.482
Informational Reading	0.031	0.018	.083†	0.182

†$p < .10$ ***$p < .001$

Discussion

Results of this study confirm that PBL is an effective way to bolster student achievement in social studies and informational reading. PBL led to learning gains representing five to six months of greater learning in social studies knowledge. It also led to about two months of increased learning in informational reading. Curriculum developers and teachers should take note and try using a project-based approach—in this case an approach through which young children learned by completing a combination of teacher-led and student-led activities all driven by an authentic purpose.

An important contribution of this study is what it reveals about the benefits of PBL in high-poverty schools. Research has shown that schools in low-income communities provide fewer opportunities for students to engage in inquiry-based approaches and student-led activities than schools in wealthier areas. This study demonstrates, using a causal design, that when schools do provide the opportunity for low-income students to engage in such practices, significant learning occurs.

Conclusion

This research study found that project-based learning can have a statistically significant and positive impact on second graders' academic achievement. Furthermore, it demonstrated that when students in low-income school settings have the opportunity to engage in practices that include explicit instruction and a chance for student autonomy, significant learning in multiple content areas occurs. Policy makers and school-system leaders should consider PBL as a lever for increasing and improving student learning and equity outcomes.

Given the findings that greater consistency by teachers in presenting the PBL curriculum as designed led to greater growth in informational reading, informational writing, and motivation, future research should examine the factors that enable and hinder high-quality enactment of project-based learning.

ACKNOWLEDGMENTS

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Images courtesy of Edutopia