

Our Journey into Project Based Learning: Improving Practice and Teacher Quality¹

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Abstract

We describe both our professional experiences and processes while implementing a Professional Development School (PDS) model for our teacher preparation program using Project-Based Learning (PBL) as a teaching methodology embedded in all content methods courses in our teacher preparation program. We also include testimonials from two PDS interns (EC-6 generalist) who implemented PBL to teach a learning unit during their student teaching semester. Finally, we will share our reflections, as methods instructors, on professional development of teacher educators, authentic curriculum/student learning, and the challenges of using PBL as an innovative and reflective practice.

Background

The research on Project Based Learning (PBL) as a teaching methodology underscores its strengths and benefits for the learner. These include, more in-depth learning, more student autonomy and engagement in their learning, learner-centered classroom, and meaningful connections to real problems (Cameron, 2010). Project-based instruction provides opportunities for realistic and student driven activities built around a constructivist learning philosophy (Thomas, 2000). In order to meet the needs of our students in the 21st century teachers in all levels, instructors need to model and apply teaching practices that support communication, critical thinking, and collaboration among the teacher candidates (Newell, 2000). As content methods instructors in a teacher preparation program, we should emphasize and model strategies that provide opportunities for future teachers to use data, examine contextual factors,

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identify problems related to teaching and learning diverse population, to initiate possible solutions, and defend how and why they might work.

A Short History and Tribute. Our Professional Development School (PDS) at Sam Houston State University was launched in fall 2011 with 19 interns (one out of seven sections) in the content methods semester under the leadership of Dr. Joan Myer-Ickes (now retired). Our PDS addressed a great need by rural schools to develop, nurture, and retain teachers living in the same community in East Texas. Our school partners needed to “grow their own” teachers who understand the contextual factors of their schools and become effective leaders. The authors are content methods (Math, Science, Social Studies) instructors as well as field supervisors for the PDS section. We teach our courses in one of the partner districts (New Waverly ISD). The content methods instructors embraced PBL as a primary teaching practice since this was a perfect match to our goal for our PDS which was to engage our interns in applying and assessing their instructional decision making knowledge, skills, and dispositions to solve real problems associated with teaching mathematics, science, and social studies (Grades EC-6).

PDS Full-Year Residency Model. During Residency I (content method semester) PDS interns spend at least 200 hours in the classroom with their mentors participating in all aspects of planning, teaching, and assessing instruction. The following semester (Residency II) our interns return to the same classroom ready to teach for 16 full weeks. During this period the interns do not waste time getting oriented with the school culture (e. g., faculty, policies, schedule, etc.) and climate. They are already part of the school community and they know their students well.

Interdisciplinary lessons through PBL. We have adapted PBL early on in our teacher preparation program in order to model a constructivist teaching and to implement a rigorous curriculum that is relevant and focused on building relationships between young learners and

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adults (Newell, 2003). Driving questions for our PBL varied each semester to ensure that interns are cognitively engaged in their learning about teaching diverse students in rural communities. An example of a PBL was to identify problems and solutions associated with the campus they are placed in. In small teams, interns used contextual factors, campus data, state assessment results, and further research to provide solutions to a specific problem. The interns presented their solutions to an authentic audience (principals, teachers, instructors), articulated answers questions from the audience, and reflected on their experiences with PBL as a process of learning and improving teaching practice. The end product was an interdisciplinary learning unit that met the needs of diverse learners, especially those from low SES families.

Interns' Implementation of PBL in the Real Classroom

After experiencing PBL as learners during Residency I, two interns (Tanya and Aileen) used PBL in teaching a learning unit during Residency II even if this was not a program requirement. We followed up on Tanya and Aileen (not their real names) during their full-year residency and met with their mentors during informal visits. In this section Aileen and Tanya share their thoughts about implementing PBL in their teaching during Residency II.

Aileen completed Residency I and II in a fifth-grade classroom, graduated May 2013, passed all Texas certification exams, and accepted a position in a rural district in east Texas. She completed an action research on a science unit in which she adapted PBL. Results showed Aileen's students improved significantly on three learning objectives using pre and post assessment. The following excerpt is Aileen's account of her PBL journey:

At the beginning ... I had very little faith that I could implement a PBL lesson because I was still trying to figure out what "Project Based Learning" looked

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like in the classroom. The more I tried to implement pieces of PBL in everyday lessons, the more it became second nature in my planning. I learned to find one leading question that will drive my unit and then list smaller questions that fit within the leading question. I try to visualize a final project that allows the students to show their knowledge in a variety of ways. Although these projects appear elaborate, students seem to love being responsible for their own learning.

Behind Aileen's success was a supportive mentor who had attended a PBL workshop at Sam Houston State University but had not implemented it herself. Her mentor used "labs out of books and worksheets", according to Aileen. After observing Aileen teach the unit on landforms, the mentor had expressed how much she learned about PBL by watching Aileen teach her unit. Later, the mentor realized she "could not go back to her old way of teaching because it now seemed boring." Feeling validated, Aileen gained more confidence in her PBL teaching approach. In terms of her students, Aileen concluded: *PBL is effective, exciting and allows the students to own their leaning and helps them become problem solvers for life.*

Tanya had one mentor in a third-grade class during her full-year residency. According to Tanya, her mentor mainly used direct teaching, paper-pencil assessment, and, occasionally, engaged the students in activities like learning centers. At first, Tanya's mentor hesitated when Tanya presented her plan to use PBL. The mentor was concerned about upcoming state assessments. However, she was pleased to see her students engaged in higher thought processes and abuzz discussions. When the state test results arrived in May 2013, these third graders performed remarkably well. Having taught three short science units using PBL during Residency II, Tanya shared the following thoughts on her journey into PBL:

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I found that engaging students in PBL kept them interested and excited. Students found these more difficult, higher-level thinking type activities to be fun because they were allowed to be creative, work collaboratively, explore new ideas, and take risks. They soon learned that it was more about how they worked to solve the problem and being able to explain their work to their peers and to me.

After experiencing initial success with PBL, Tanya viewed PBL as a way of “giving students the opportunity, the courage, the desire, and the will to explore, create, try, fail, discuss, reflect, and critically think”. Her third grade students came to class each day asking, “Are we doing something fun today?”

Instructors’ Reflections

This paper presents a snapshot of our PDS with project based learning built into its structure as the primary pedagogy. Our PDS’ main goal is to help interns develop critical thinking in order to effectively use school data, research, and communication for identifying and solving school related problems. All our content methods courses introduce and model PBL to our interns in Residency I. Our positive experience with PBL in our PDS teacher preparation program was reassuring and has given us more confidence in modeling PBL before Residency II (student teaching). Every semester our PDS interns responded eagerly to the PBL tasks and challenges. They worked best in small collaborative team. Their solutions to the problems at hand reflected their use of critical thinking and informed decision making.

Our joint effort resulted in a stronger collaboration and professional development for all involved. Our partner schools have been supportive of our PBL effort and the high expectations

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for our future teachers to develop a strong commitment to the school community. Our journey into PBL was not a smooth ride at all. We stumbled along the way as we (instructors) were still learning how to incorporate PBL into our courses. Integration of subject areas was important in our team planning for PBL questions, entry events, and products. We still need continuous professional development in this area. We rely so much on the Buck Institute website (www.bie.org) for quality resources. We also have joined the National Association for Professional Development Schools (NAPDS) and attended its annual meetings since 2012. Our future plans include, providing continuous professional development on PBL for our PDS mentors and supervisors and using our PDS alumni as resources since most of them are teaching in our PDS districts. The *Center for Project Based Learning, Assessment, and Teaching*, recently established in our department of Curriculum and Instruction, will assist in providing professional development for our PDS partners. Issues related to “managing the project” and classroom management need to be addressed in professional development. Moreover, we need to ensure that, while our PDS interns are engaged in PBL they are also developing teaching competencies aligned with the state standards that are assessed on the Texas teacher certification examination (i. e., Pedagogy and Professional Responsibilities EC-12).

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