CREATING COMMUNITIES OF ENGAGEMENT: A PROJECT-BASED LEARNING INITITATIVE THROUGH A PROFESSIONAL DEVELOPMENT SYSTEM

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ABSTRACT
In examining the importance of collaboration in a middle school, the authors explored project-based learning (PjBL) in collaborative interdisciplinary team settings. Through the use of surveys of sixth and seventh grade middle school students, teachers, and the school administrator regarding self-efficacy and perceptions, the researchers gained insights regarding perceptions of participants as they worked in communities of engagement. This manuscript focuses on the perceptions of teachers and the principal as well as the pivotal role that the university Professional Development System (PDS) model plays in building and fostering a community of engagement. Findings from surveys and interviews reveal insights regarding the learning environment and collaboration.
Keywords: Project-based learning, professional development system, collaboration

Introduction

Teachers genuinely desire to collaborate and to work together in supportive learning communities, but challenges remain (Metlife, 2010). Challenges such as finding non-instructional time to meet and having work during times outside of duties persistently appear in teacher surveys (North Carolina Teacher Working Conditions, 2016). Having administrative support and shared, consistent time to establish professional learning community (PLC) environments in an interdisciplinary context enables a team to strengthen greater levels of engagement for students and teachers. Teachers benefit from having purposeful time set aside in order to meet to discuss curriculum, learning objectives, teaching strategies, student success, and ways to work together.
Each member of the PLC ensures that he or she has an avenue to share insights and input in working together in a project-based learning effort (Authors, 2013a; Authors, 2014b; Authors, 2015c).
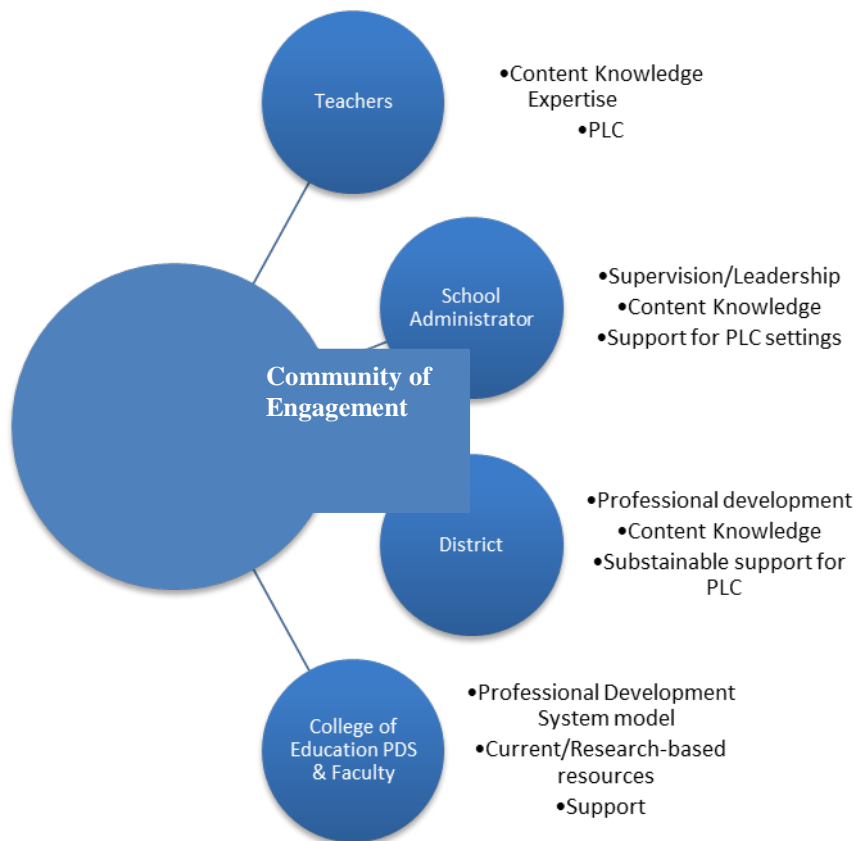
THE STUDY

The researchers began initial work at a local middle school in southeastern North Carolina in the vein of service, and over time, research questions developed for further inquiry. Building on the importance of collaborative voices and shared engagement during the implementation of this instructional approach had been a focus of the work in this middle school (Authors, 2013a). Through this group effort, a connected community was developed, as Wenger's (1998) social theory of learning supports was established that allowed for shared visions and common goals to be exchanged through meaningful discourse. The six goals of the University of North Carolina Watson College of Education Professional Development System model addressed this effort as follows:

1. Improve the lives, learning, and opportunities of all students;
2. Prepare teacher and administrator candidates in a professional, collegial environment;
3. Enhance the curriculum, structures, school culture and community ties for P-12 school and University of North Carolina Wilmington staff and faculty;
4. Provide professional support to beginning and veteran teachers through extended professional development opportunities;
5. Assess and evaluate the work undertaken through this collaboration; and
6. Conduct research to enhance the field of education and disseminate the results of this work (University of North Carolina Professional Development System, n.d.).

The administrator of the school was familiar with the university's Professional Development System (PDS) model, which provided a foundation in establishing this continued research endeavor. The immediate presence of university faculty in the school environment, specifically invited to and present in PLC meetings, provided more conversations with teachers and administrator strengthening the focus of the project-based learning ideas and building on the "four-cylinder collaborative process" (Authors, 2013a, p. 131). Here, school-based supervision was effectively transformed into a collaborative leadership role, as the role of the principal was seen as supportive and involved in the collaborative process. Figure 1 provides a snapshot of the community of engagement model used in this study. This model highlights the process of building relationships among the teachers, administrator, district leaders, and the university roles throughout the study.

Figure 1 The Community of Engagement Process Model.

The key players in this model all contributed their expertise and resources in supporting the effective implementation of this method of instruction. Teachers provided knowledge of the content areas, voices and creative mindsets as they engaged in the PLC. Administrators offered supervision resources and knowledge of content as they support the process and conversations needed for the PLC to be effective. Districts offered resources to support content knowledge and innovations such as professional development. The College of Education and its faculty of researchers contributed professional development as well as academic and research-based resources to support the innovations in teaching the content and fostering the PLC conversations. Each sphere had a big role to help in supporting the implementation of project-based learning instruction and any other instructional approach at the middle school.

METHODS
University researchers utilized a modified survey instrument for both sixth and seventh grade students that consisted of self-efficacy scales (Bandura, 2006). In addition to this instrument, surveys and interviews were administered to the teachers and the school administrator to explore their respective perceptions as they collaborated in this community of engagement (Author, 2016e). As noted by York-Barr and Duke (2004), the school leaders (teachers and principal) contributed a vital role in engaging students and improving the learning environment.

The survey was administered to 195 sixth graders and 177 seventh graders who completed the participant researcher's consent forms (Authors, 2016d, in preparation). An accompanying survey tool and interview protocol designed by the researchers was given to the sixth and seventh grade teachers and principal. Likert-scaled items comprised the initial teacher questions regarding their levels of satisfaction with the subject areas (science, math, language arts, and social studies) and then an open-ended question allowed for further comments. The sixth grade teachers also completed an additional survey designed by researchers to indicate consistency with responses since the team has been participating in this collaborative effort for four years.

Qualitative analysis also included observation notes throughout the planning and presentations along with unstructured questions to obtain the viewpoints of the teachers and principal about the continued use of this

approach to teaching specific concepts and skills in content areas. Interviews were conducted with school administrator, and teachers at the end of the school semester to provide feedback on project-based learning implementations and working in PLCs.

FINDINGS
Teacher leaders play a pivotal role in helping students learn and in enhancing the overall quality of the school (Bond, 2011; York-Barr & Duke, 2004).   At the end of the fifth year of this collaborative project based learning (PBL) project, the researchers surveyed students' perceptions of learning and teacher satisfaction through research instruments and interviews. The sixth grade team of teachers had undergone some personnel changes but the team continued to support the PBL research effort.

The main survey instrument data from the teachers in Grade 6 and Grade 7 and the school administrator indicated the overall satisfaction with the PBL instruction and collaborations. A total of 14 teachers completed the survey including seven sixth grade teachers and seven seventh grade teachers. The open-response data and interview with administrator and teachers indicated there is still a need for "buy in" from the entire team and school environment. They mentioned some challenges that impacted some of their decisions in using project-based learning throughout the year. They included the following: dealing with change (both administrator and teacher), risk (both administrator and teacher), buy in (both administrator and teacher), and trust (administrator). The teachers on the sixth grade team also commented that they were pleased with their progress and noted the students were excited about each of the projects. Comments included, "Our projects flowed nicely this year" and "Teachers worked well together to plan and collaborate on activities."

Interviews from teachers and administrator indicated their satisfaction with the collaboration and indicated the benefits of collaborating professional learning for the benefit of implementing PBL learning activities was in part due to the PDS model. Some of the comments included:

"… they had collaborative group talk discussions and ideas since then as a result of that I don't think would have happened had you guys not come in." "…I am exceptionally grateful and thankful…for the partnership. I genuinely want to know what we could have done to have made the relationship stronger. I want to know what potential we have to grow the relationship moving forward…" (Administrator)

"It's like that community of practice and community of engagement. All of us are partners in having that discussion and having set up those PLTs, PLCs. It's great that we felt a part of that whole community. (College Faculty)

Regardless of the changes with school leadership at the school, the presence of transformative administrators throughout the effort strengthened the collaboration and supported the development of teacher leaders. The ability to create a community of engagement that allowed for the sharing of ideas strengthened the collaborative leadership at the school and offered more opportunities for sharing this knowledge with other teachers in the school. The PDS relationship that allowed the university researchers to establish this collaborative effort with the teachers and administrators is vital for enhancing the quality of teaching and leadership by the team. Having this collaborative environment had many benefits for the teachers, principal, partnership and school. The teachers and principal indicated some of the benefits of collaboration were cohesion, being "on the same page", and the ability to generate ideas as a team.

Table 1: Shared Ownership to Project-Based Learning in Middle School (Teachers/Educators)

Response Percentage (Frequency) Questions	1	2	3	4	5	6
Satisfaction with the science activities presented with project based learning activities?	.75 (3)	.50 (2)	0	0	0	0
Satisfaction with the math activities presented with project based learning activities?	.50 (2)	.75 (3)	0	0	0	0
Satisfaction with the language arts activities presented with project based learning activities?	.75 (3)	.50 (2)	0	0	0	0
Satisfaction with the social studies activities presented with project based learning activities?	.50 (2)	.75 (3)	0	0	0	0

Note. Sixth grade teacher responses are presented above (n=5); Survey scale rating were as following: 1=Very Satisfied   2=Satisfied   3=Neutral   4=Dissatisfied   5=Very Dissatisfied   6=Other, please specify

See Appendix for overall analysis of teachers' responses from PBL Teacher Perception Survey. Table 2 indicates years of participating in collaborative professional learning activities for PBL implementation at the school for teachers in Grades 6 and 7. Most sixth grade teachers had 1-4 years participation in professional learning activities and almost half of the teachers had more than five years of participation. Most of the seventh grade teachers had less than one year of experience participating in collaborative professional learning activities for PBL.

Results in the survey indicated how the teachers' responses towards learning the curriculum of other subjects in grade level and learning communities created while working on the collaborative PBL activities. The highest frequency of responses, for the Grade 6th teachers, fell under curriculum support as a positive benefit of collaborative professional learning for implementing PBL activities. Moral support, advice, and reflection of practice had the lowest frequency with four teachers selecting these options as positive benefits of collaboration.

The seventh grade teachers had a range between two and eight for level of collaboration in PBL professional learning activities and level of implementation of PBL practices in the classroom. Most of the 7th grade teachers fell between "not at all" or "moderate" in regards to the extent their participation in the learning community influenced the level of implementation in the classroom. Other responses included student involvement/application of skills. Almost half of the teachers identified curriculum support, advice, and support through challenges as positive benefits from collaborative professional learning for the purpose of implementing PBL activities. Moral support had the lowest frequency of identification for seventh grade teachers. Table 3 and 4 provide survey findings for all teachers.

Working in a diverse school allows for collaboration with teachers, administrators and students to "identify and remove factors that limit student learning and opportunity and instituting practices that enhance them" (Owings & Kaplan, 2012, p. 482). This work related to the UNCW Professional Development System mission of "enhancing the quality of teaching and school leadership to ensure that student work is challenging, engaging, and relevant" (UNCW Professional Development System, n.d., para. 2). Findings from the survey data indicated that both grade level teachers supported the model of this system through this collaborative effort and valued having the support of the college in improving and enhancing their development and implementation of curriculum.

CONCLUSIONS

It is important that we understand the perspectives of teachers and administrators – who are empowered to serve as leaders within a collaborative learning community – in order to continually refine what Dewey (1938) famously called "the *quality* of the experience" (p. 27). Through continuation of this partnership in terms of curriculum and planning (Authors, 2013a; Authors, 2014b) researchers hope to promote and expand shared ownership of all participants involved in this work, in order to better understand the various perspectives present within the learning community. The role of the principal as supervisor is important as the "supervisor should be available to peer teams as a resource person" (Glickman, Gordon, & Ross-Gordon, 2010, p. 297) and be willing to help as needed.

This work seeks to realize the collaborative potential of an ongoing partnership with a middle school and a university to further the efforts of an interdisciplinary team to foster greater student success. Future studies could include additional grade levels and teacher participants and focus on longitudinal perspective as the effort continues in subsequent years. Continuing to seek to better understand the work of a collaborative community that is focused on project-based instruction will be strengthened by recognizing challenges and opportunities experienced by teachers in these important roles.

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Table 2. *Spring 2015 PBL Teacher Experiences: Sixth and Seventh Grade*

Experience	Grade 6 Teachers	Grade 7 Teachers
Less than 1 year	0	4
1 year	1	0
2 years	1	0
3 years	1	1
4 years	1	0
5 years	0	1
More than 5 years	3	1

Note. *N* = 14 teachers that completed the survey. Results indicate the years of implementation for sixth- and seventh-grade teachers at the school.

Table 3. *Spring 2015- PBL Teacher Perception Survey: Sixth and Seventh Grade*

Questions	n = 14	Response Percentage (Frequency)									
		1	2	3	4	5	6	7	8	9	10
2. How would you describe your level of collaboration in PBL professional learning activities?	6th Grade Teachers	0	0	0	0	.14 (1)	0	0	.71 (5)	0	.14 (1)
(One with no response)	7th Grade Teachers	0	.14 (1)	0	0	.14 (1)	.14 (1)	.29 (2)	.14 (1)	0	0
3. How would you describe your level of implementation of PBL practices in the classroom?	6th Grade Teachers	0	0	0	0	0	0	.29 (2)	.29 (2)	.43 (3)	0
	7th Grade Teachers	0	.14 (1)	.14 (1)	0	.14 (1)	0	.43 (3)	.14 (1)	0	0
5. To what extent has your participation in the learning community influenced your level of implementation of PBL in the classroom?	6th Grade Teachers	0	0	0	0	0	.29 (2)	.14 (1)	.29 (2)	.14 (1)	.14 (1)
	7th Grade Teachers	.14 (1)	0	.14 (1)	.29 (2)	0	0	0	.14 (1)	.14 (1)	0

Note: As shown in the table the response percentages for 3 question items and corresponding frequency (in parenthesis), and the item mean and standard deviation (SD). Grade 6th teachers n=7 and Grade 7th teachers n=7. Scale survey was as following: **1=Not at all   2   3   4   5=Moderately   6   7   8   9   10=All the time**

Table 4. *Spring 2015- PBL Teacher Perception Survey Continue*

Note: As shown in the table the response percentages for three items and corresponding frequency (in parenthesis). Grade 6 teachers (*n* =7) and Grade 7 teachers (*n* = 7).

		Response Percentage (Frequency)				
4. What are some positive benefits from collaborative professional learning for the purpose of implementing PBL activities? Circle all that apply.	*n* = 14	Curriculum Support	Moral Support	Advice	Reflection on Practice	Support through Challenges
	6th Grade Teachers	.86 (6)	.57 (4)	.57 (4)	.57 (4)	.57 (5)
	7th Grade Teachers	.43 (3)	.14 (1)	.43 (3)	.29 (2)	.43 (3)