CHESTER PARK ELEMENTARY SCHOOL OF INQUIRY (CPESI) PROJECT-BASED LEARNING INITIATIVE

Summary

Chester Park Elementary School of Inquiry (CPESI) is a Title I school where 90% of the 435 students receive free or reduced lunch and 34% do not meet expectations on the Palmetto Assessment of State Standards (PASS) test. Designated a high-need school, CPESI was chosen to serve as a Professional Development School (PDS) as part of the Winthrop University-School Partnership Network. This regional Network functions to improve the quality of teachers in high-need districts in upstate South Carolina by providing innovative, collaborative professional development to preservice and inservice teachers. The overarching goal is to work with partner schools to improve student learning. The CPESI Project-Based Learning (PBL) initiative, which began in 2010, has just completed its third year. Student achievement scores on tests aligned with state benchmarks have increased each year during this three year period.

Demographics

- *Target Settings*: Elementary schools
- *Target Groups Served*: All students, with a particular emphasis on students who are at-risk for academic failure
- *Districts Served*: Chester Park Elementary School of Inquiry, Chester County School District, and Winthrop University-School Partnership Network schools in the following counties: Cherokee County, Fairfield County, Lancaster County, and Union County. CPESI teachers in partnership with Winthrop University Faculty are developing Professional Learning Opportunities that include workshops and an online Project-based Learning Resource Center. CPESI tailors project- based learning programming to meet the needs of students and teachers at these partner schools. The potential also exists for the CPESI Project-based Learning Initiative to impact school districts beyond the partnership network as Winthrop University teacher candidates who participate in the program graduate and share what they have learned with other professionals across South Carolina.

Research and Evaluation

What national or other research was considered during the development of this program/initiative? Describe the evidence that shows the program/initiative works.

Project-based learning or problem-based learning (PBL) has been utilized for over forty years across different disciplines. Meta-analysis of studies conducted from 1976 to 2007 compared PBL curriculum to a traditional curriculum (Strobel & van Barneveld, 2009; Walker et al., 2009). Findings indicated that PBL stimulates critical thinking and has the potential to create more in-depth understanding in areas such as science and math when students are engaged in learning activities that integrate in-class and on-line technology resources. PBL is effective with all populations of students including those at risk for academic failure in underperforming schools similar to those at CPESI and other Partnership Network schools (Boaler, 2002; Marx et al, 1997; Moore et al., 2002). Teachers and the Winthrop Faculty in Residence (WFIR) chose project-based learning (PBL) to establish conditions (Spencer & Logan, 2003) in which teachers, students, administrators, and university faculty could work collaboratively to develop an environment where students who are at risk can experience academic success.

Year one of the Project-based Learning Initiative resulted in gains in first and second grade classrooms piloting the use of PBL. Before receiving PBL instruction, students' average pre-assessment score was 51.5%. Post-assessment data revealed significant growth in student learning averaging 84%.

In year two, CPESI implemented project-based learning school-wide, with 13 classes and 251 students. Students averaged 46% on the pre-assessment and 86% on the post-assessment (assessments were content-based and aligned with state benchmarks). Year three, CPESI continued to see growth in student learning school-wide with students' pre-assessment scores at 53% and post-assessment scores at 87%. During this same time period math and science scores rose on the Palmetto Assessment of State Standards test (PASS). In 2010, 34% of CPESI students met expectations in math and 41% met expectations is science. As of 2012, 43% met expectations in math and 43% met expectations in science.

The sustainability and viability of the CPESI Project-based Learning Initiative was an important consideration from day one. Professional development was conducted using the Research to Lead Teacher Model for the purpose of building a self-sustaining program (Logan, Stein, Nieminen, Wright, Major, & Hansen, 1999; Logan & Stein, 2001; Spencer & Logan, 2003). The Research to Lead Teacher Model (RLT) is a framework from which a lead teacher is developed who then guides other teachers' to implement project based learning and other strategies taught during staff development sessions. At CPESI the Winthrop Faculty in Residence utilized the RLT model to develop lead teachers at each grade level. At the end of year three Lead Teachers have been identified or are emerging in Pre-K through fifth grade. They have all, regardless of status, begun delivering professional development to schools within the district, to Winthrop teacher candidates and other professionals at the local, state, and national levels.

Resources

- *Annual Cost*: Initial implementation requires technology purchases (laptop computers for student use) and substitute teachers to support the professional learning needs of teachers; additionally, materials such as subscriptions to technology resources and project-based learning resources (project boards, experiment materials, etc.) are needed annually.
- *Funding Sources*: Yearly Research and Inquiry Grant (approximately $1562.15) from the Winthrop University-School Partnership Network, school professional development budget.
- *Staffing Needs*: External support for professional learning needs (supplied through the Partnership Network). Funds needed to hire substitute teachers so that participants may attend conferences, conduct workshops, and provide in class support for each other while learning to implement PBL.
- *Infrastructure/Equipment Needs*: Mobile technology (laptops) to help eliminate the digital divide that exists for many children in poverty. Laptops also work best for student engagement in various environments; however, project-based learning can occur through stationery labs or with other media.
- *Partner Organizations:* Winthrop University Faculty in Residence, Chester County School Board, Winthrop University NetSCOPE Research and Inquiry Grant Program, Winthrop University NetSCOPE Partnership Network.

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- Sample PBL project and parent information http://questgarden.com/115/37/8/101129062059/, http://miniaturemeteorologists.blogspot.com/
- Video highlighting the annual Friends and Family Science Fair http://www.youtube.com/watch?v=8UIDPuBffGw&feature=youtu.be
- Article on CPESI PBL Initiative on page 5 of the Partnership Newsletter http://www2.winthrop.edu/netscope/NetSCOPE%20Newsletter%20Vol%202.pdf

CPESI students use project-based learning to conduct online research and work collaboratively with peers to solve real world problems.