PROJECT BASED LEARNING

New Tech Network &
J.L. Mann Academy High School

Why Project Based Learning? (PBL)

There is forty years of accumulated evidence that the instructional strategies & procedures that make up standards-focused Project Based Learning are effective in building deep content understanding, raising academic achievement and encouraging student motivation to learn. Research studies have demonstrated that PBL can:

- Be more effective than traditional instruction in increasing academic achievement on annual state-administered assessment tests.[1]
- Be more effective than traditional instruction for teaching mathematics,[2,3] economics,[4] science,[1,5,6] social science,[7]
- Be more effective than traditional instruction for long-term retention, skill development and satisfaction of students and teachers.[1,9,2]
- Be more effective than traditional instruction for preparing students to integrate and explain concepts.[10]
- Improve students' mastery of 21st-century skills.[11,12]
- Be especially effective with lower-achieving students.[1,4,6]
- Provide an effective model for whole school reform.[13]

PBL and College/Career Readiness

PBL emphasizes skills needed for post-secondary plans

Huffington Post *(March 22, 2013)*

Pathways to Employment: Graduating Students Ready for College and Career

"(We have been) challenged to redesign America's high schools so they better equip graduates for the demands of a high tech economy…

In that spirit, the time is now to redesign how high schools educate, making them learning organizations that provide real, relevant and engaging opportunities for students to learn…

Employers indicate that graduates entering the workforce need the skills of Deeper Learning -- finely honed communication skills, the ability to work in teams and collaborate, the knowledge to think critically, the drive to be an innovative learner and the impetus to work with self-direction and initiative."

A Glimpse Inside: Student Perspectives

"It really, actually changed my life."

High school students reflect on their experience of project based learning and describe how they not only learned a great deal of content, but also practiced the 21st century skills needed for personal and workplace success. [Time: 4:00]

Why New Tech Network

- Infrastructure and system already in place
- Nationwide with over a hundred schools participating
- One-to-one technology
- Opportunity to best prepare our students for college and the workplace
- Five years of Professional Development (starting summer 2013) and Support provided by the organization

THANK YOU FOR YOUR ATTENTION!

References

1. 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(8), 922-939.
2. Boaler, J. (1997). Experiencing School Mathematics: Teaching Styles, Sex and Settings. Buckingham, UK: Open University Press
3. Cognition and Technology Group at Vanderbilt. (1992) The Jasper series as an example of anchored instruction: Theory, program description and assessment data. Educational Psychologist, 27, 291-315.
4. Mergendoller, J.R., Maxwell, N., & Bellisimo, Y. (2007). The effectiveness of problem based instruction: A Comparative Study of Instructional Methods and Student Characteristics. Interdisciplinary Journal of Problem-based Learning, 1(2), 49-69.
5. Hickey, D.T., Kindfeld, A.C.H., Horwitz, P., & Christie, M.A. (1999). Advancing educational theory by enhancing practice in a technology-supported genetics learning environment. Journal of Education, 181, 25-55.
6. Lynch, S., Kuipers, JU., Pyke, C., & Szesze, M. (2005). Examining the effects of a highly rated science curriculum unit on diverse students: Results from a planning grant. Journal of Research in Science Teaching, 42, 921-946.
7. Walker, A. & Leary, H. (2008) "A Problem Based Learning Meta Analysis: Differences Across Problem Types, Implementation Types, Disciplines, and Assessment Levels," Interdisciplinary Journal of Problem-based Learning, 3(1), 12-43. (Available at: http://docs.lib.purdue.edu/ijpbl/vol3/iss1/3)
8. Vernon, D. T. & Blake, R. L. (1993). Does problem-based learning work? A meta-analysis of evaluative research. Academic Medicine, 68(7), 550-63.
9. Strobel, J. & van Barneveld, A. (2008) "When is PBL More Effective? A Meta-synthesis of Meta-analyses Comparing PBL to Conventional Classrooms," Interdisciplinary Journal of Problem-based Learning, 3(1), 44-58. (Available at: http://docs.lib.purdue.edu/ijpbl/vol3/iss1/4)
10. Capon, N, & Kuhn, D. (2004). What's so good about problem-based learning? Cognition and Instruction, 22, 61-79.
11. Hmelo, C. (1998). Problem-based learning: Effects on the early acquisition of cognitive skill in medicine. Journal of the Learning Sciences, 7, 173-208.
12. Gallagher, S.A., Stepien, W.J., Rosenthal, H. (1992) The effects of problem-based learning on problem solving. Gifted Child Quarterly, 36, 195-200.
13. National Clearinghouse for Comprehensive School Reform (2004). Putting the Pieces Together: Lessons from Comprehensive School Reform Research. Washington, DC: Author.