

Problem-Based Design

A technology oriented teacher technology professional development model

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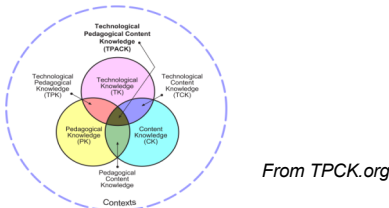


Abstract: This poster describes a technology-focused teacher professional development model aimed at helping teachers to better and integrate 21st century teaching and learning skills in their classrooms. The model is based on both a theory of teacher knowledge, technological pedagogical content knowledge (TPACK), and the inquiry-oriented instructional method of problem-based learning. The model relies on problem based learning as a method for helping teachers engage in design in order to increase both their technology knowledge and integration skills. Findings should large gains in terms of participants' knowledge and attitudes, while web usage data also should strong evidence of impact on participants' technology integration skills.

Research Question
What is the impact of the PD model on participants' technology knowledge, attitudes & behavior?

Theoretical Background

Technological Pedagogical Content Knowledge (TPACK)



From TPACK.org

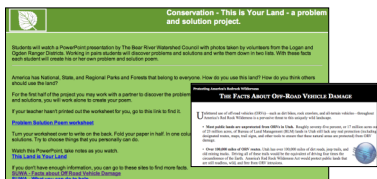
Pedagogical Context

Problem based learning (PBL)

Inquiry method, small groups, teacher as facilitator, authentic problems, scaffolding

Technology Context

The Instructional Architect & online resources



<http://ia.usu.edu>

Professional development

Phase	Pedagogical Activities	Theory
Workshop 1	Small group formation	PBL
	Demonstrate IA	TK
	Discuss PBL	PK
	Participants select design problem	CK
	Introduce online resources	TPACK
	Groups design IA projects	PBL
	Review	TPACK
In-between activities	Design & implement IA project	TPACK, PBL
	Review peers' IA designs	TPK
	Revision based on feedback	PBL
	Write reflection paper	PBL
Workshop 2	Small group reflection	TPACK
	Whole group reflection	TPACK
	Revisit instructional problems	PBL
	Review use of IA & online resources	TK, PBL

Findings

Participant Self Report on Technology Integration

N=20	Pre-survey		Post-survey		d
	M	SD	M	SD	
Experience creating online lesson	1.64	1.40	2.89	.94	1.07
Knowledge using technology in the classroom	1.88	1.05	2.84	.96	.98
Confidence in teaching with technology	1.92	1.08	2.95	.78	1.12

Webmetrics (Usage) Analyses

	M	SD	Min	Max
# of logins	29.68	21.23	4	92
# of IA projects created	8.63	6.93	2	28
# of online resources used	36.31	36.61	1	275
# of visits to IA project	142.61	260.37	1	1792