

Research Institute on Problem Solving

"The Institute functions to promote, conduct, and translate research to improve data-based problem-solving."

PROMOTE RESEARCH

Activities to generate research questions, collaborations, and projects:

Retreat (Fall 2011)

Brownbag Colloquia (ongoing)

Application for postdoc and research grants

Problem-Solving Summit/Think Tank/Conference (Fall 2011)

Revision of Data-Based Program Modification manual

CONDUCT RESEARCH

<i>Problem-Solving Components:</i>	<i>Domain:</i>	<i>Ongoing Projects</i>	<i>Future Research</i>
Identify Problems	Reading:	Ted Christ: Computer-Based Assessment System for Reading (CBAS-R): OSEP funded project (2005-2011) to develop a 5 to 10 min computer-based assessment that taps the primary domains of reading achievement using a common assessment to index growth from K to 5th grade (Concepts of Print, Phonological, Phonetic, Vocabulary, & Comprehension): http://www.cehd.umn.edu/edpsych/C-Bas-R/default.html	
	Writing/Spelling:	Kristen McMaster: CBM-W Project: Establishing technical adequacy of CBM to gauge writing proficiency across grade levels (1 to 7). Includes questions of reliability/validity as well as classification accuracy.	
	Math:	Ted Christ: Computer-Based Assessment System for Math (CBAS-M): OSEP funded project (2010-2012) to develop a 5 to 10 min computer-based assessment that taps the primary domains of reading achievement using a common assessment to index growth from K to 5th grade (Counting & Cardinality, Operations & Algebraic Thinking, Numbers & Operations, Measurement & Data, Geometry)	
	Behavior:		
	Early literacy:		
Define (Operationalize) Problems	Reading:	Ted Christ: Formative Assessment Instrumentation & Procedures for Reading (FAIP-R) Project: IES funded project to develop an optimal set of CBM-R progress monitoring passages with online graphing and interpreting tools: http://www.cehd.umn.edu/EdPsych/FAIP-R/	

	Writing/Spelling:	Kristen McMaster: CBM-W Project: Establishing technical adequacy of CBM to gauge writing proficiency across grade levels (1 to 7). Includes questions of reliability/validity as well as classification accuracy.	Kristen McMaster: Teachers' Use of CBM-W to define problems: (including questions of feasibility, reliability, use of technology, decision rules for determining existence and magnitude of problems).
	Math:		William Bart: Explore development of origami booklets to teach geometry
	Behavior:	Ted Christ: Examination of use of direct observation of behaviors in the identification and monitoring of secondary-school students with behavior difficulties. Funded by SLOA. Study conducted in the Netherlands.	
	Early literacy:		
Explore Alternatives (Assess/Intervene)	Reading:	Chris Espin: Examine validity and reliability of CBM measures in reading and second language learning for secondary-school students. International study -- study being conducted in the Netherlands. Project funded by SLOA and done in collaboration with Johann de Witt Scholen in The Hague.	Chris Espin: Study of teachers' use of data -- what factors influence teachers' interpretation and use of data for decision making.
	Writing/Spelling:	Kristen McMaster: CBM-W Project: Establishing technical features of CBM slopes (including reliability/stability of slopes, capacity of measures to detect growth over time)	Kristen McMaster: Teachers' Use of CBM-W to identify individual interventions (including questions of feasibility and use of technology; decision rules for determining the best intervention such as via BEA/experimental teaching approaches; additional data sources for informing focus of intervention such as rubrics, miscue analysis)
	Math:		William Bart: Explore cognitive effects of chess training among learners; Explore methods to develop higher-order thinking skills (e.g., problem-solving skills, decision-making skills, planning skills, critical thinking skills, creative thinking skills) among learners.
	Behavior:		
	Early literacy:		
Apply Solutions (Assess and Intervene)	Reading:	Ted Christ: Formative Assessment Instrumentation & Procedures for Reading (FAIP-R) Project: IES funded project (2009-2013) to establish an optimal set of CBM-R progress monitoring passages with online graphing and interpreting tools (http://www.cehd.umn.edu/EdPsych/FAIP-R/)	
	Writing/Spelling:		Kristen McMaster: Same as above; in addition, research is needed to determine effects of different types of interventions, and how much growth on CBM-W can be expected at various grade levels and under varying instructional conditions.
	Math:		
	Behavior:	Ted Christ: Direct Behavior Ratings: a simple, efficient and cost effective approach for teachers, parents, and others to collect progress monitoring data on key behaviors, including "The Big Three" of Academic Engagement, Disruptive Behavior, and Respectful Behavior in the classroom: http://www.directbehaviorratings.com	
	Early literacy:		

Look at Effects of Solutions (Evaluate)	Reading:		
	Writing/Spelling:		Kristen McMaster: Research in which CBM-W is used as a DV (more to come here)
	Math:	Asha Jitendra: Project MAPSS & Project RAPPs: Evaluate the effects of schema-based instruction (SBI) on the mathematical problem-solving performance of elementary and secondary students with and without math difficulties. Funded by NIH and IES.	
	Behavior:		
	Early literacy:		

		TRANSLATE RESEARCH TO PRACTICE		
		<i>Activities to promote educators' use of data-based problem solving:</i>		
		Retreat (Fall 2011)		
		Brownbag Colloquia (ongoing)		
		Problem-Solving Modules for pre- and inservice educators (ongoing)		
		Revision of Data-Based Program Modification manual		