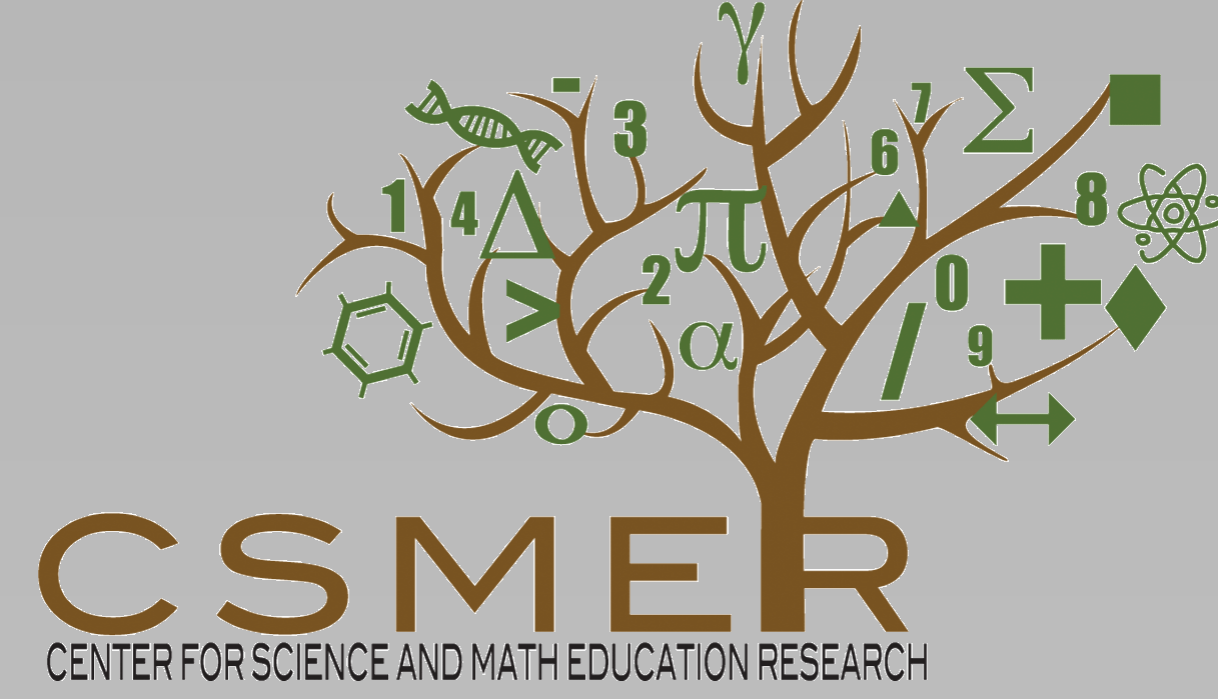


Strategies to develop and strengthen the scholarship of teaching and learning of high school teachers and college faculty



Maximizing Yield Through Integration (MYTI): Science & Math Education in the Context of a Disposing Society.

University of Puerto Rico, Río Piedras Campus

Ana R. Guadalupe (PI), Brad R. Weiner, Michelle Borrero, Rafael A. Rios, Elvira Cuevas (Co-PI's)

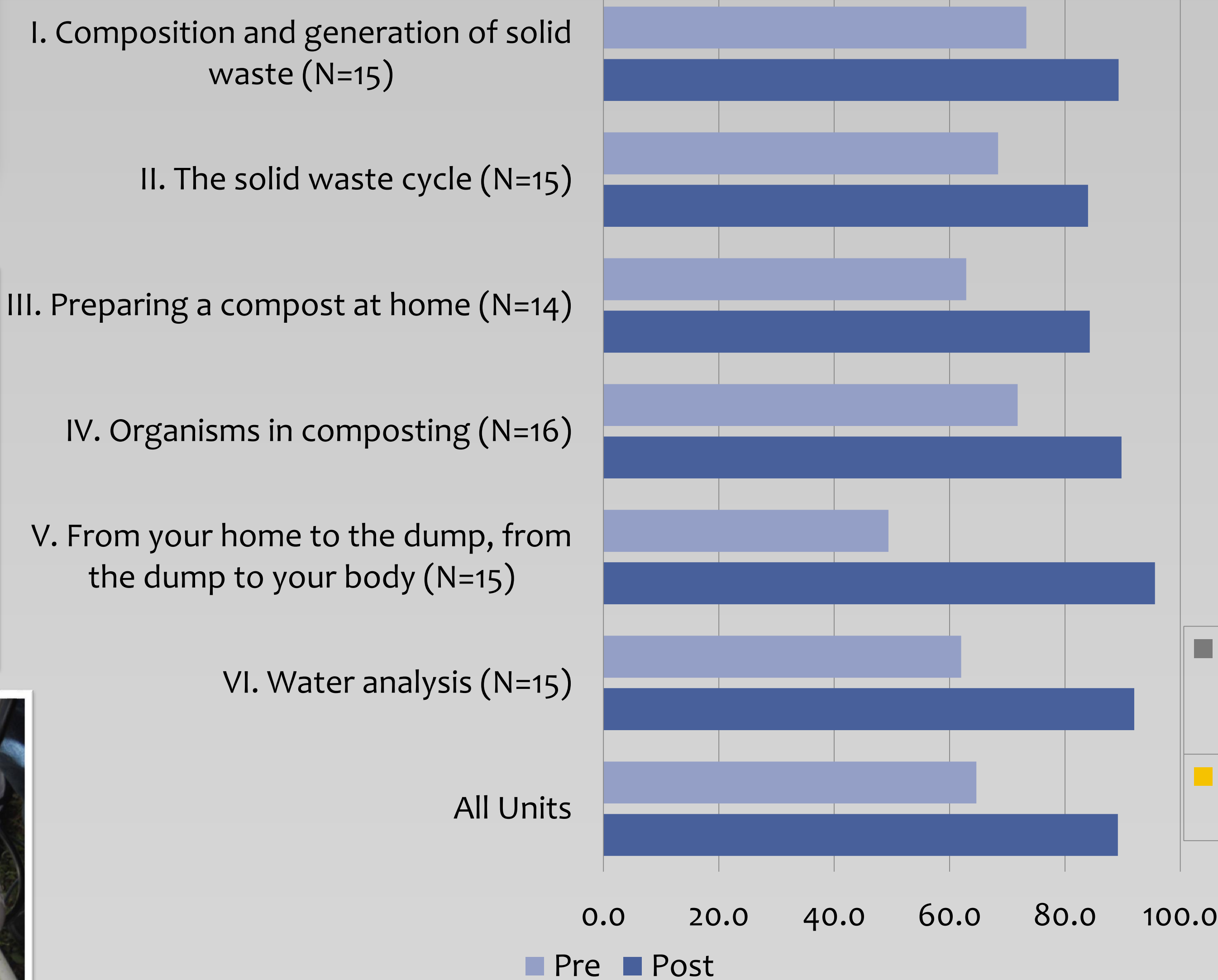
Introduction: We have established a **Center for Science and Mathematics Education Research (CSMER)** to “maximize our yields” as we integrate research and education through the incorporation of existing NSF funded programs in the broad area of environmental sciences and science education. The CSMER provides support to conduct research on science education and establish outreach opportunities with partnering K-12 schools. The Center fosters the integration of research on science education, action-research by teachers and educational practice focus on the solid waste problem in Puerto Rico with the potential to expand to other relevant interdisciplinary issues. It also provides the infrastructure for developing cooperative teaching approaches, supporting pilot studies, support for internet resources and for research in science education, including statistics support, building survey support, and other assessment tools.

TEACHER'S PROFESSIONAL DEVELOPMENT

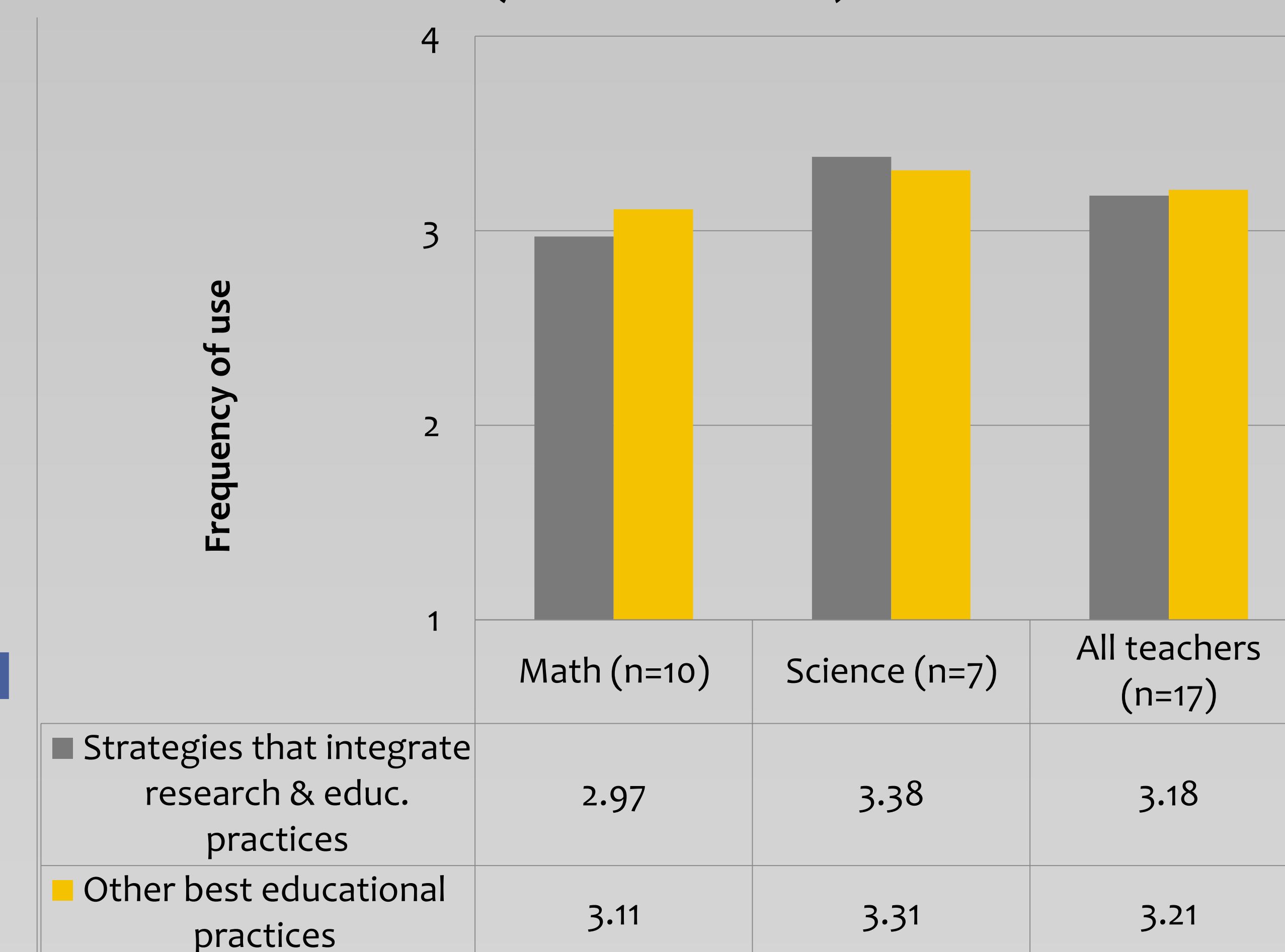
- Faculty, IGERT fellows, and undergraduate students design instructional units
- IGERT fellows assist teachers in the design and implementation of environmental science school projects and action research
- Teachers conduct action research
- Teachers and IGERT fellows work on presentations and/or manuscripts
- Teachers train other teachers



Teachers' knowledge of Math & Science content presented on instructional units



Teachers' use of best educational practices (mean total scores)



FACULTY'S PROFESSIONAL DEVELOPMENT

Education Research: Action Research and Inquiry in the Classroom

Quasi-experimental Designs in Educational Settings

Workshop: Survey Monkey

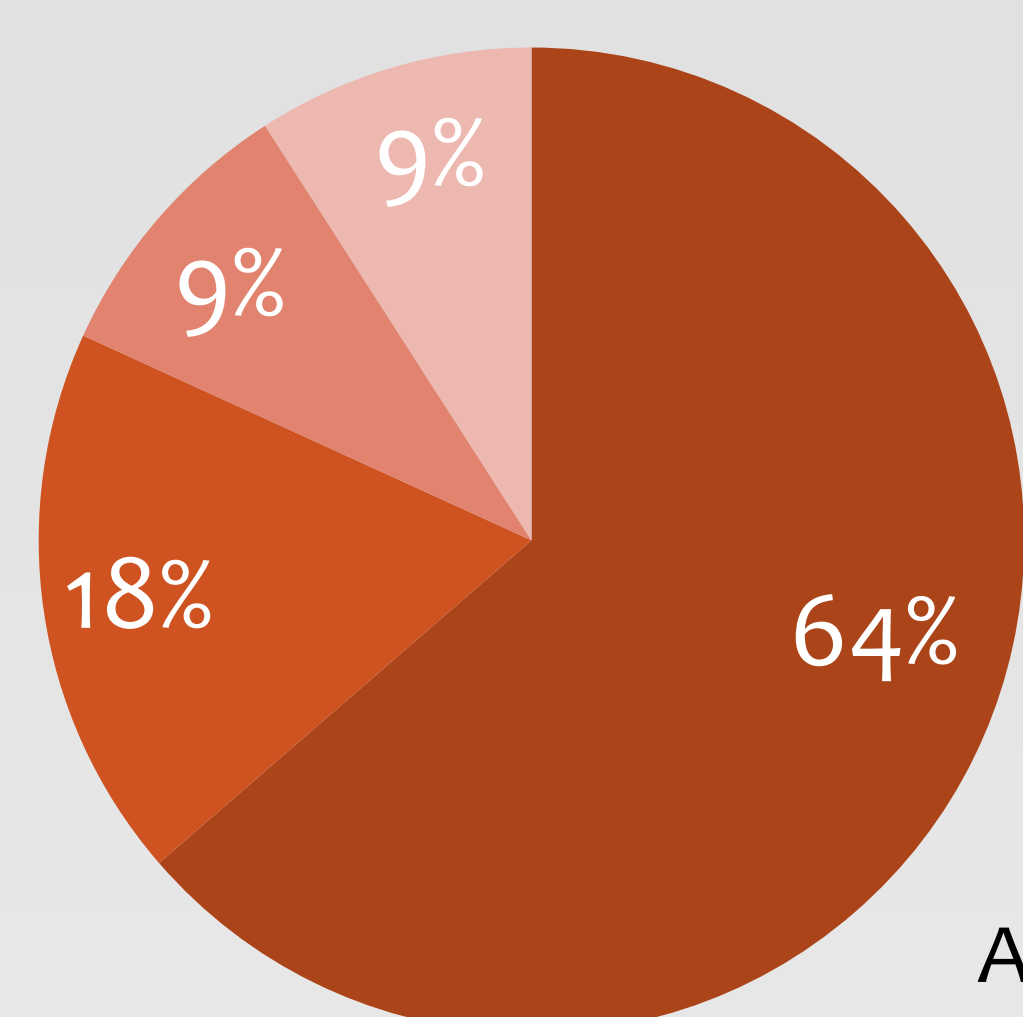
Interview: A Technique For Data Collection

Mentoring And Support On Publications And Research Projects

Construction Of An Evaluation Instrument For The Physics Laboratory

Affiliation of faculty that receive services at CSMER

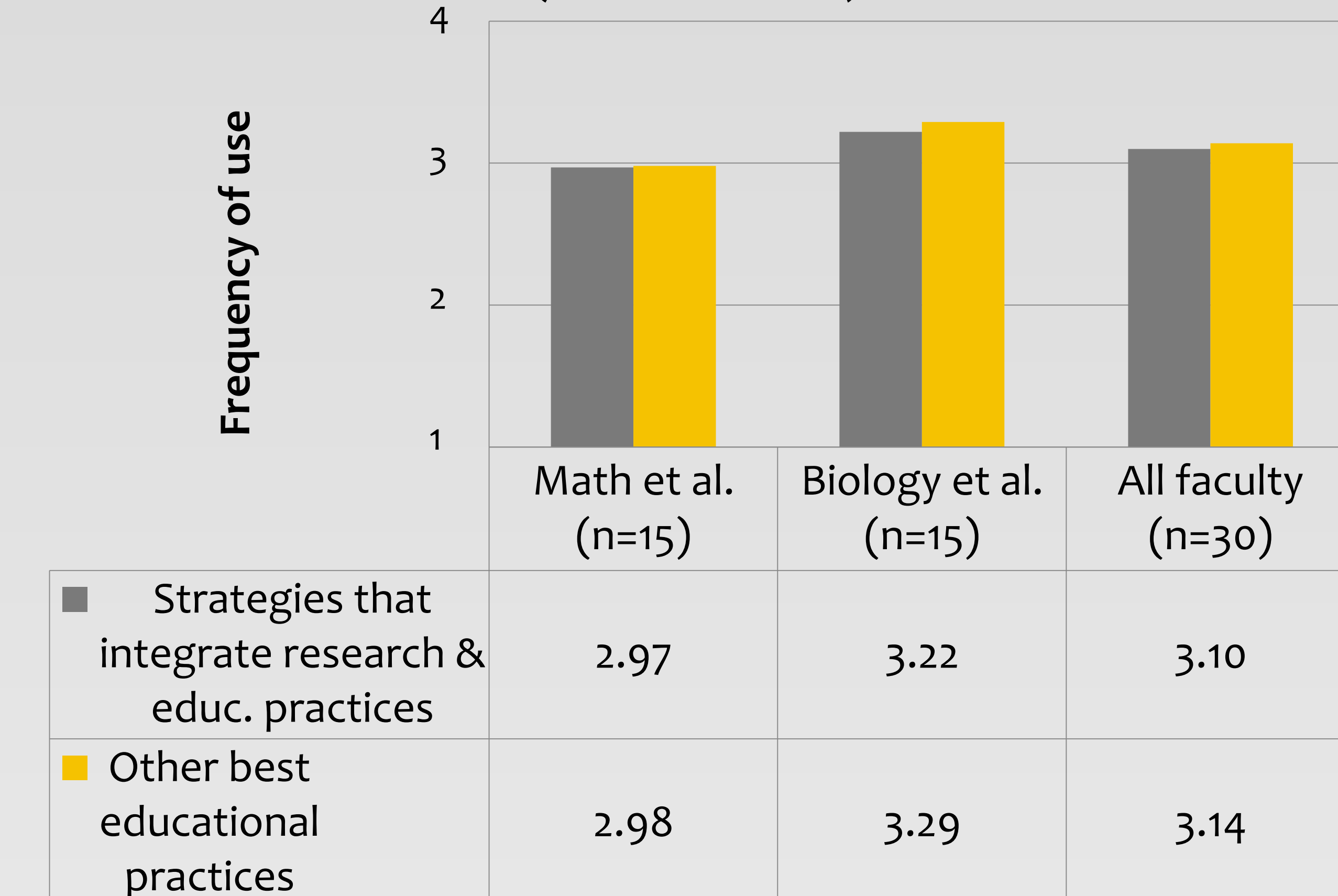
■ Natural Sciences ■ General Studies ■ Social Sciences ■ Education



STEM Education Research Baseline Data for Faculty (2007-2011)

	#	Presentations		#	Publications	
		Meeting/ Congress/ Symposia			Journal	
Natural Sciences	10	Symposium at National Academy of Science International Congress of Education and Critical Thinking American Chemistry Society National Meeting Latin American Chemical Congress Biennial Conference on Chemical Education Innovation and Change in Higher Education		8	Life Sciences Education Am. Biology Teacher The Chemical Educator J Chemistry Education	
General Studies	4	International Congress of Education and Critical Thinking		4	J College Science Teaching Pedagogía	
Social Sciences/ Education	0	--		1	Cuadernos de Investigación	
TOTALS	14			13		

Faculty's use of best educational practices (mean total scores)



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