Instructional Practices and Computer in Schools Participating in Major Reform Programs: Comparisons with a National Probability Sample

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Non-Technology Programs

Nature of Entity	Program Participation at What Level	Programs or other Sources/ Number of programs participating	Schools Partici-pating/ Completed Surveys
Reform Programs	School-wide external programs	Accelerated Schools, ATLAS, Center for Collaborative Education (Teachers College), Coalition of Essential Schools, National Alliance for School Restructuring. Total = 21 programs	140 / 425
	School-wide individual school programs	Charter Schools, U.S. Dept. of Ed. Promising Practices. Total = 5 programs	32 / 104
	Department-wide	UCAN RSI, Milwaukee USI, City Science, CSMP / Total = 4 programs	26 / 76
	Individual teacher participants	Impact II, Project 2061 (AAAS), UCSMP / Total = 8 programs	59 / 220*
Teacher Recognition	Individual teacher participants	Milken Foundation, National Board for Professional Teaching Standards / Total = 2 programs	31 / 109*
Subtotal: Non-Technology-Specific Programs and Schools			**288 / 934**

*Out of the 329 responding teachers at reform/recognition programs based around individual teacher participants, 55 teachers were actual participants; the others were other teachers at the same schools.

Technology-Oriented Programs and Schools

Nature of Entity	Program Participation at What Level	Programs or other Sources/ Number of programs participating	Schools Partici- pating/ Completed Surveys
Technology -Embedded Reform Programs	School-wide	Co-NECT Schools, Schools for Thought, National School Network (BBN) / Total = 4 programs	28 / 94
	Individual teacher participants	Co-VIS, Global Lab, GLOBE, Learning Circles / Total = 9 programs	62 / 208**
High-End Technology Schools (no program)	School-wide emphasis on reform	Bozeman "Best Practices", Electronic Learning, "Kids on the Web", Web66 / NA	52 / 161
	Individual teacher tech reform program	Serim, "NetLearning"; Technology & Learning magazine / NA	20 / 73**
	Not a particular reform emphasis – just high-tech	QED Technology Presence Index, Clement's List / NA	110 / 362
Subtotal: Technology-Oriented Programs and Schools			**272 / 898**
Grand Total: Purposive Sample			**560 / 1832**

** Out of the 281 teacher respondents at schools with technology-specific programs or emphases, 52 were actual teacher participants identified through sources; the others were other teachers at the same schools.

Aspects of Teaching Practice on Which Probability and Purposive Samples Are Compared

- Constructivist Philosophy
- Constructivist Practice
- Critical Thinking
- Student Projects
- Complex Assessment
- Frequency of Computer Use with Students
- # of Classroom Computers
- Technology Resources Available
- Constructivist Objectives for Student Computer Use
- Extent of Use of Constructivist Software
- Variety of Software Use
- Recent Change Towards Constructivist Practice

Examples of Constructivist "Practices"

Critical Thinking	Project-Based Activities	Other Activities
• Hold a debate and argue for a particular point of view which may not be their own. • Represent the same idea in more than one way (in math by a table and a graph; in English, by a poem and an essay). • Work on problems for which there is no obvious method of solution. • Seriously assess their own work. • Make conjectures about what they will learn or discover in a new unit.	• Make a product that will be used by someone else. • Do hands on/laboratory activities. • Work on projects that take a week or more. • Demonstrate their work to an audience including people other than from the school or their family.	• Relate what they are working on to their own experience. • Suggest or help plan classroom activities. • Decide on their own procedures for solving a complex problem and then discuss among themselves their different procedures and results.

Background Variables Used as Controls

Student Clientele Differences:

- Community SES
- Chapter I Enrollment
- Minority Percentage
- Urban to Rural
- Student Ability

Teacher Background Differences:

- Teacher's Educational Investments
- College Selectivity
- Years of Teaching Experience

Teaching Responsibility Differences:

- Grade Level of Students
- Primary Teaching Subject

Student and Teacher Background Variables and Teaching Assignment Variables that are Related to Type of Sample

- Technology sample - higher income

- Technology sample - lower poverty rate

- Probability sample - lower % minority

- Reform sample - from larger community than Probability sample

- Reform sample - higher personal investment in education

- Technology sample - more selective college than Probability sample

Constructivist Philosophy and Practice
by Type of School, With Controls
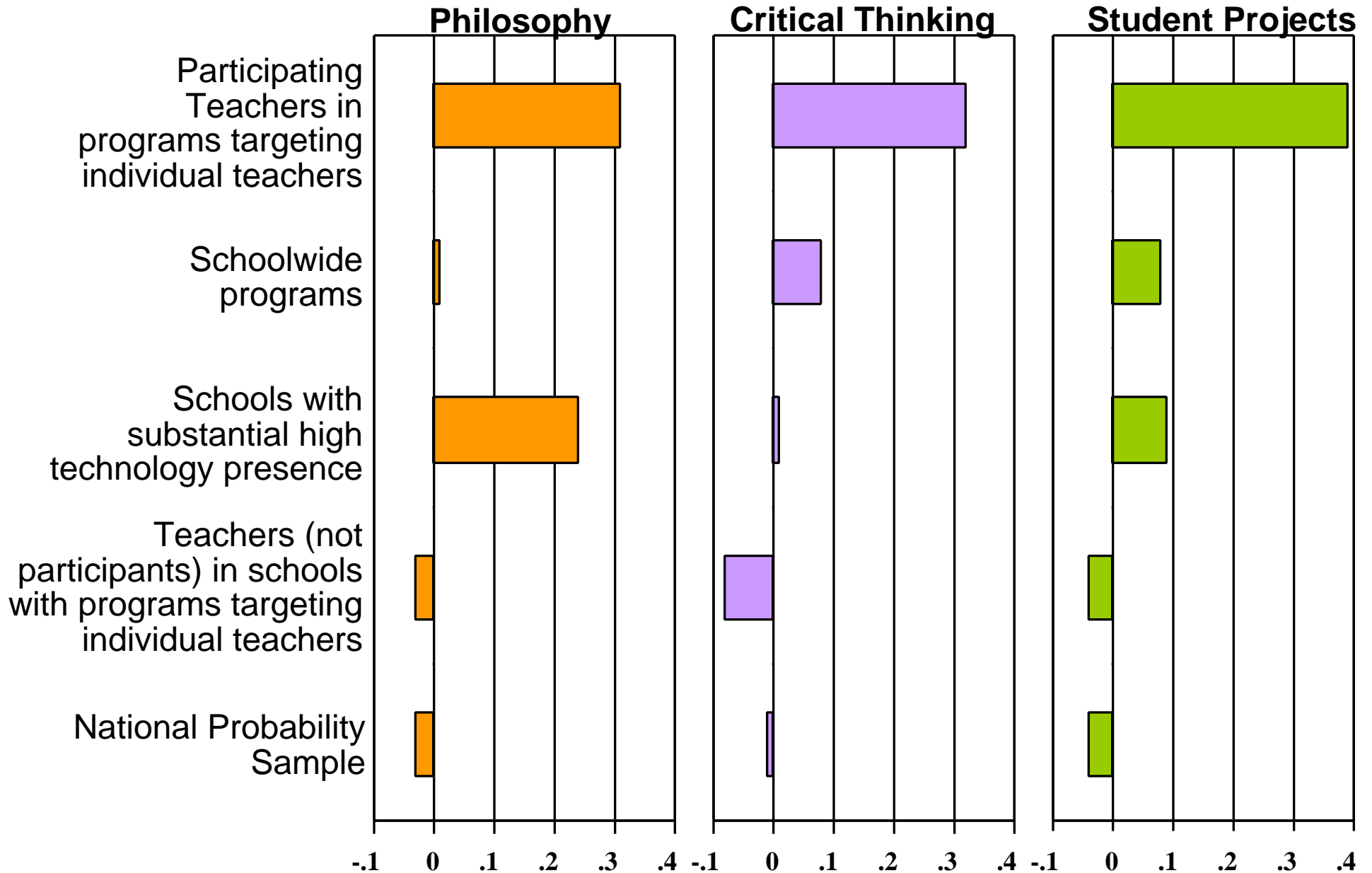
Constructivist Objectives for Computer Use
by Type of School, With Controls

Technology specific schools:

Indiv. participants in tech reform activities

Schoolwide technology-infused reform

High-Tech schools
—reform involvement unknown

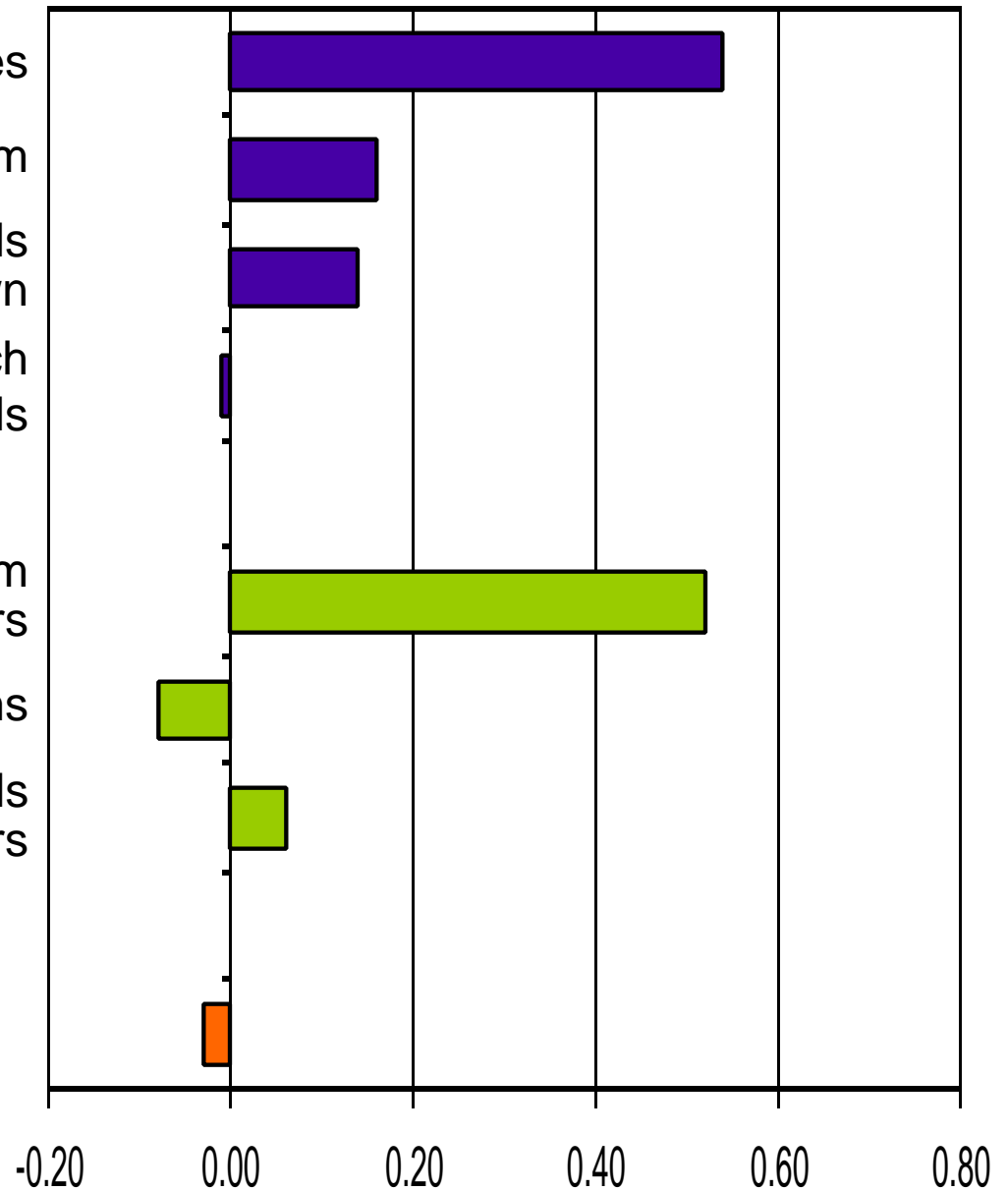Other teachers in indiv.-tech
reforming schools

Non-technology reforming schools:

Teachers participating in reform
programs targeting individual teachers

Schoolwide reform programs

Teachers (other than participant) in schools
w/ programs involving indiv. teachers

National Probability Sample

-0.20   0.00   0.20   0.40   0.60   0.80

Constructivist Software Use
by Type of School, With Controls

Technology specific schools:

Indiv. participants in tech reform activities

Schoolwide technology-infused reform

High-Tech schools
—reform involvement unknown

Other teachers in indiv.-tech
reforming schools

Non-technology reforming schools:

Teachers participating in reform
programs targeting individual teachers

Schoolwide reform programs

Teachers (other than participant) in schools
w/ programs involving indiv. teachers

National Probability Sample

-0.20   0.00   0.20   0.40   0.60   0.80

Teacher's Technology Resources by Type of School, With Controls

Technology specific schools:

Indiv. participants in tech reform activities

Schoolwide technology-infused reform

High-Tech schools
—reform involvement unknown

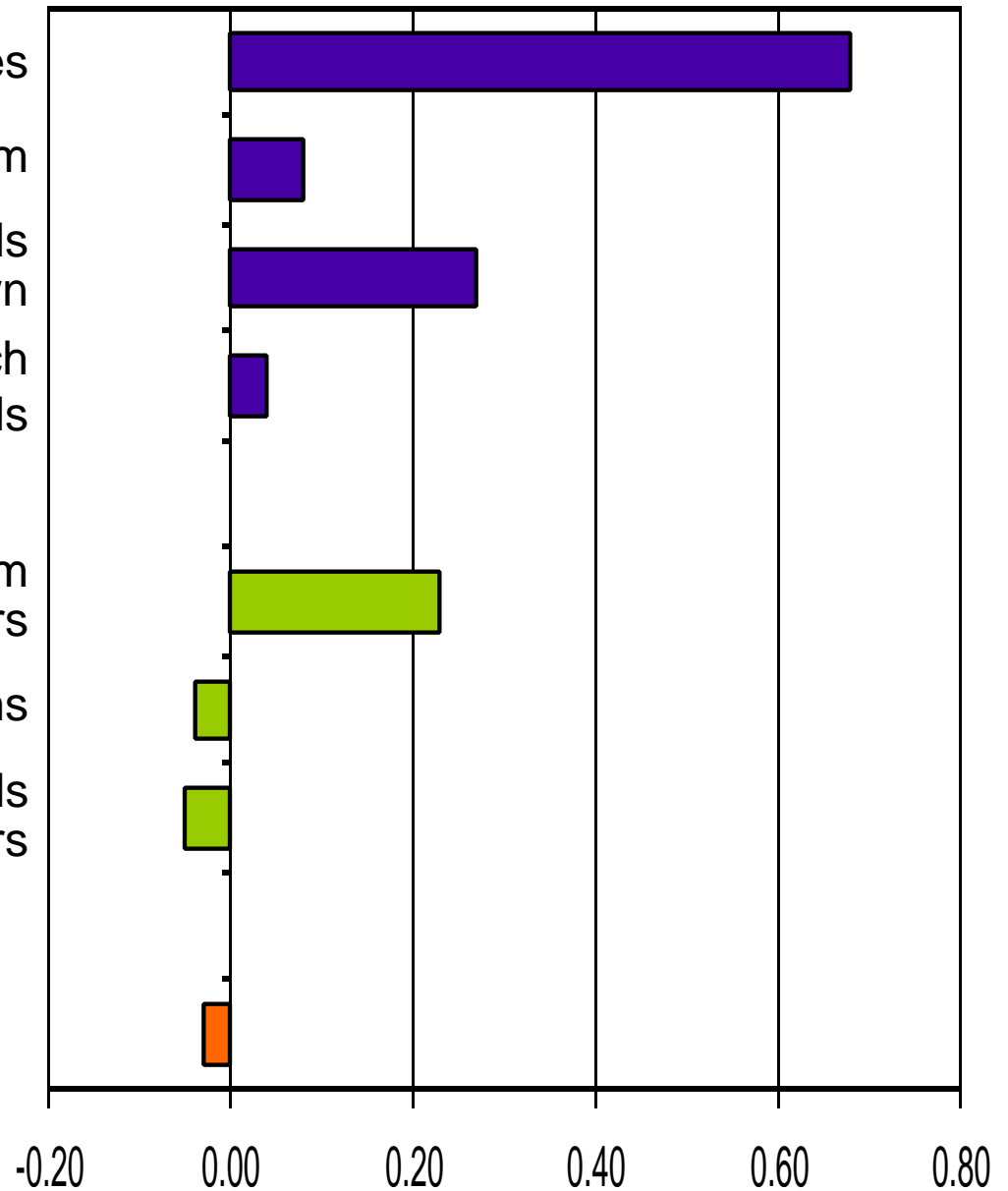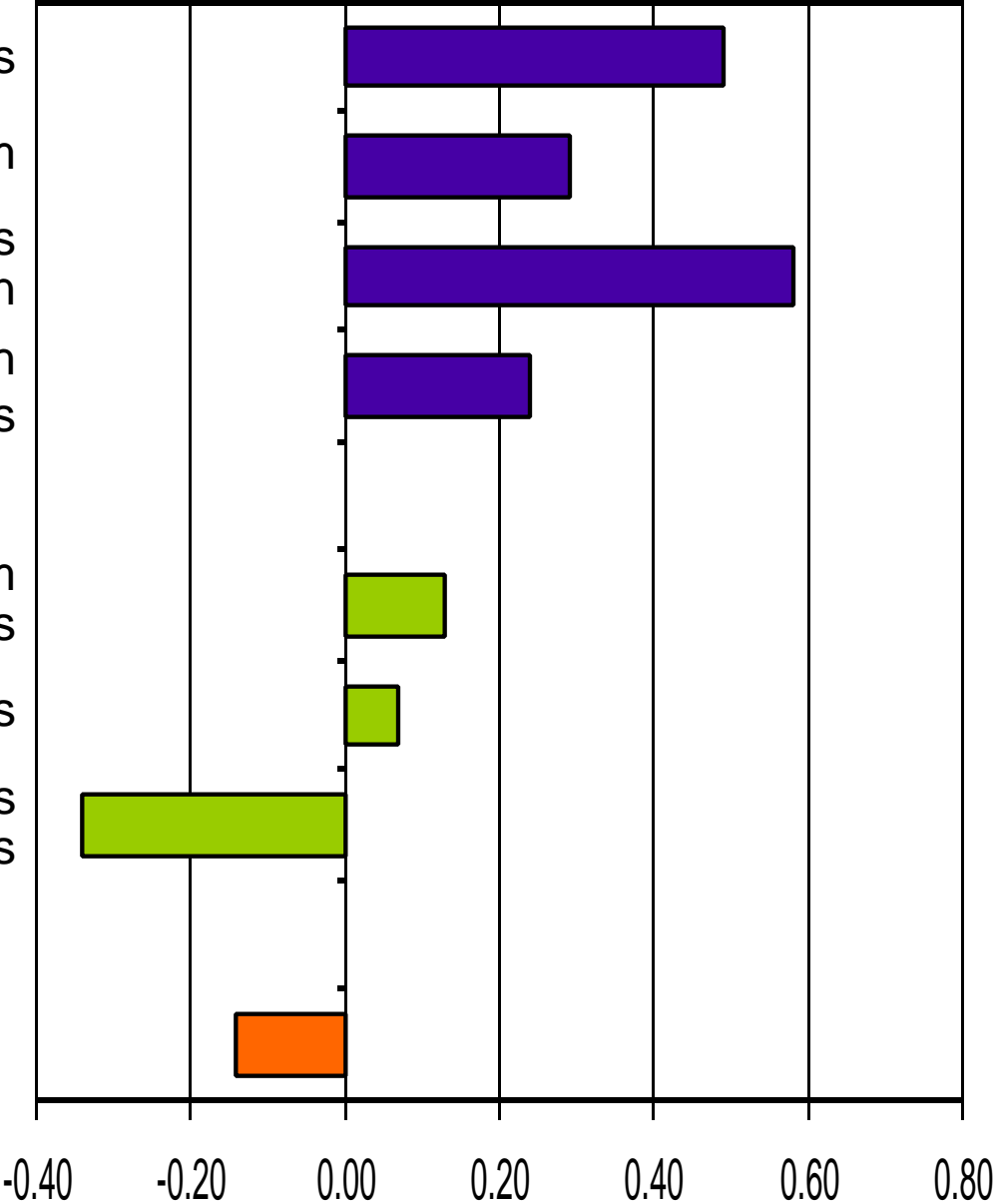Other teachers in indiv.-tech
reforming schools

Non-technology reforming schools:

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programs targeting individual teachers

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National Probability Sample

-0.40   -0.20   0.00   0.20   0.40   0.60   0.80

Constructivist Philosophy and Practice
In Reform and Tech-Reform Settings, With Controls

Philosophy | Critical Thinking | Student Projects

Individual participants in reform:
- Non-tech ref. programs
- Tech. reform program

Schoolwide reform programs:
- Non-tech ref. programs
- Tech. reform program

Other teachers in reforming schools:
- Non-tech ref. programs
- Tech. reform program

-.2   0   .2   .4   -.2   0   .2   .4   -.2   0   .2   .4