

If Not Here, Where? Teachers' Use of Technology in Silicon Valley

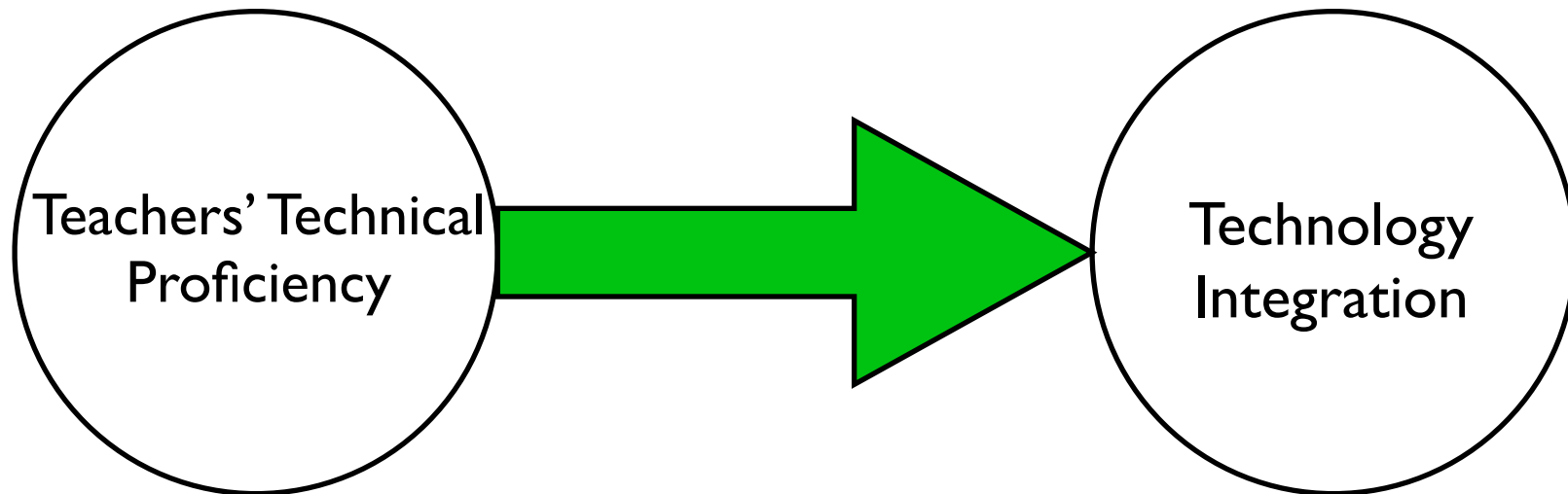
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Study

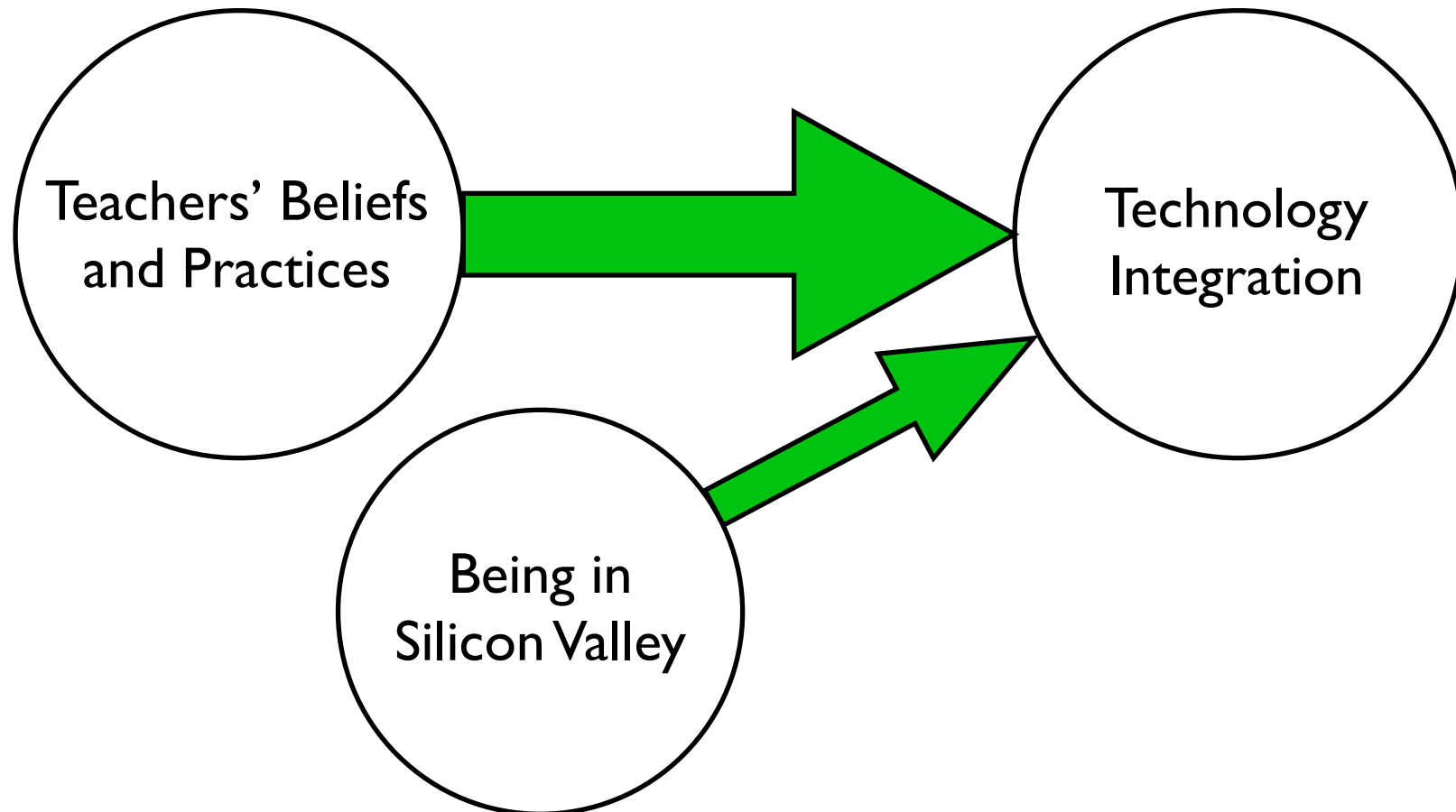
- Are schools and teachers in Silicon Valley more likely to use technology than teachers in other parts of the country?
- Research Question: **What factors influence K-12 teachers' integration of technology?**
- Null Hypothesis: *Exposure to technology in teacher preparation programs will have no influence on teachers' use of technology in the classroom.*

“Old” Model



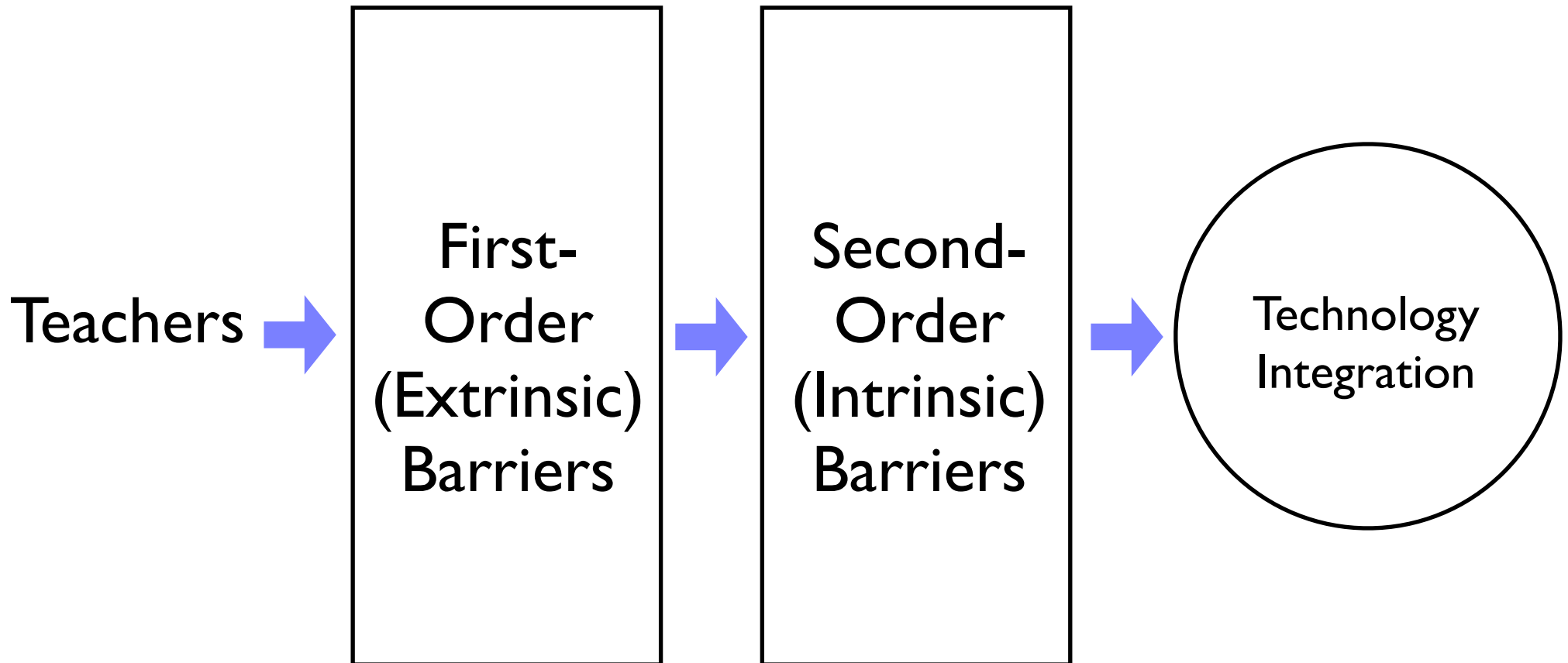
“Location” Model

Cuban, Kirkpatrick, & Peck, 2001



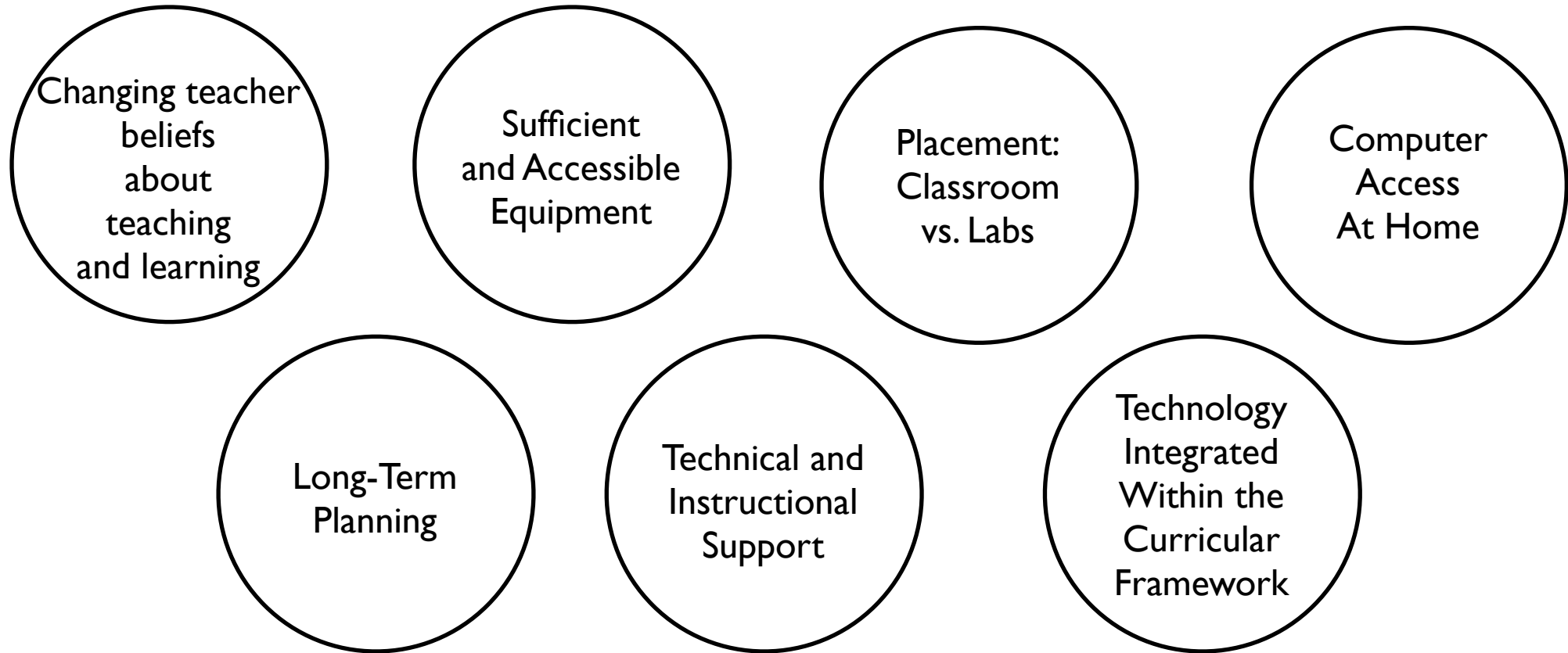
Barriers to Integration

Ertmer, 1999



Summary of Conditions Required

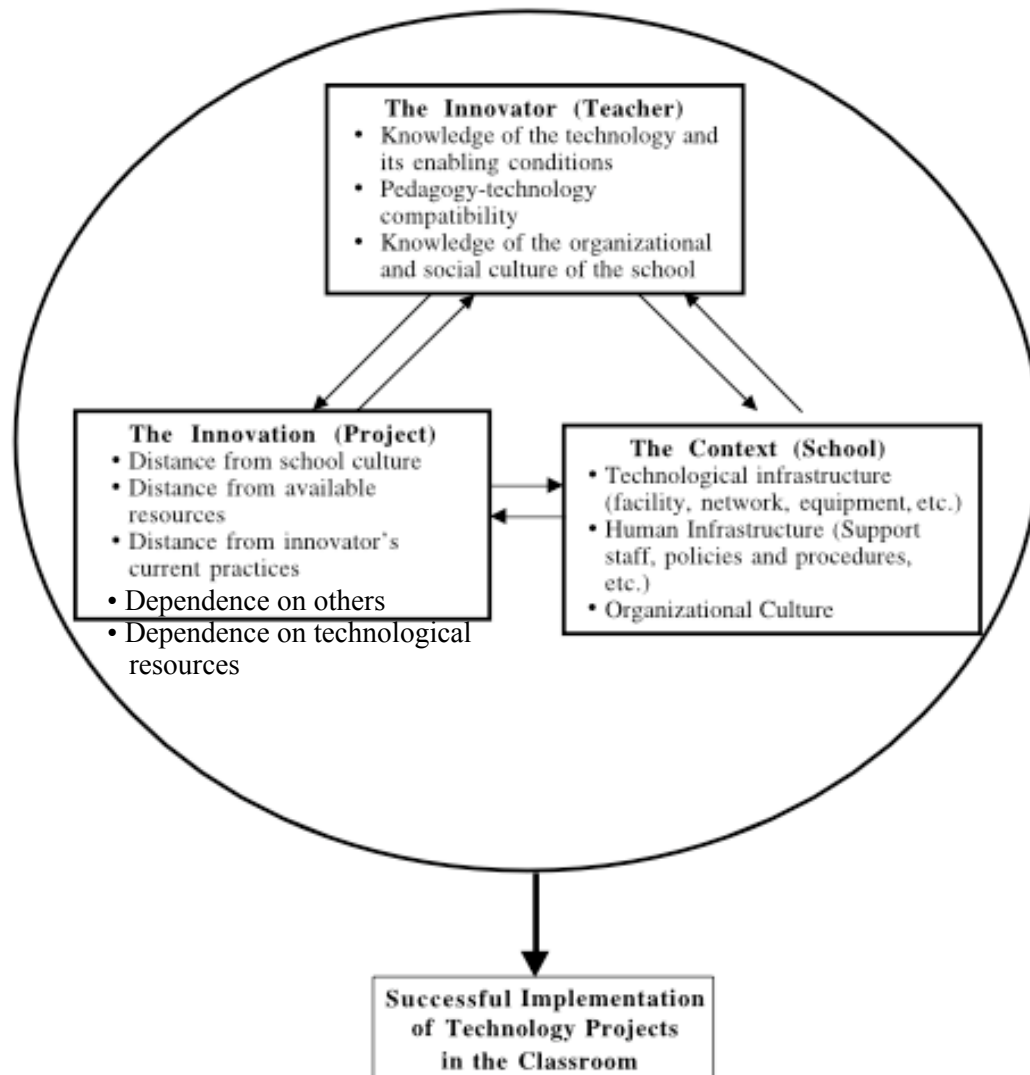
Ringstaff & Kelly, 2002



**Effective Technology Integration
By Teachers in Schools**

II Factors Influencing Successful Implementation

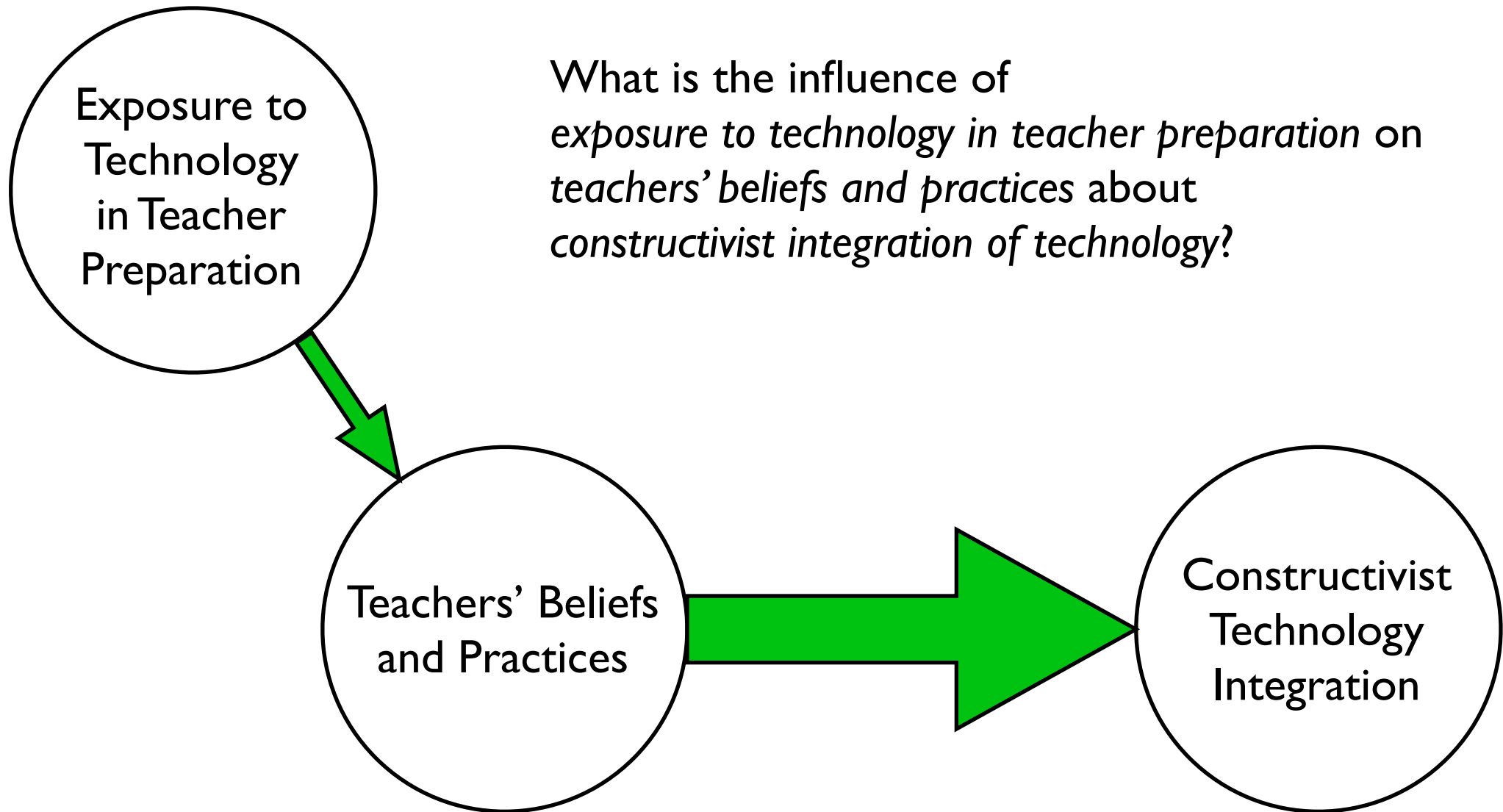
Zhao, Pugh, Sheldon, & Byers, 2002



“... the complex and messy process of classroom technology integration.”

Figure 1. Conditions for classroom technology innovations.

Research Question



Survey Details

- Santa Clara County Office of Education list of districts and schools
- Phone interviews with all 31 district-level technology coordinators
- Identified 61 schools (out of 348) where “any” technology-related activities are going on
- More elementary (28) than middle (21) and high schools (12)

Survey Packets

- Questionnaire (8 pages)
- Cover letter
- Release Form
- \$10 Barnes & Noble gift card
- Stamped, self-addressed return envelope

Response Rate

- 350 surveys distributed
 - Personal delivery to school principals
 - Random selection procedure done for principals, based on alphabetical list
- 203 surveys returned (58 percent)

Questionnaire

- Six sections:
 - Teaching Background (12 questions)
 - Technology in your classroom (36 questions)
 - Professional Development (24 questions)
 - Proficiency with Technology (19 questions)
 - Technology and You (24 questions)
 - About You (41 Questions)

Demographics

- Gender: 85 percent female
- Years of teaching:
 - 10 years or less: 62.1 percent
 - 11 to 20 years: 22.2 percent
 - More than 20 years: 15.7 percent

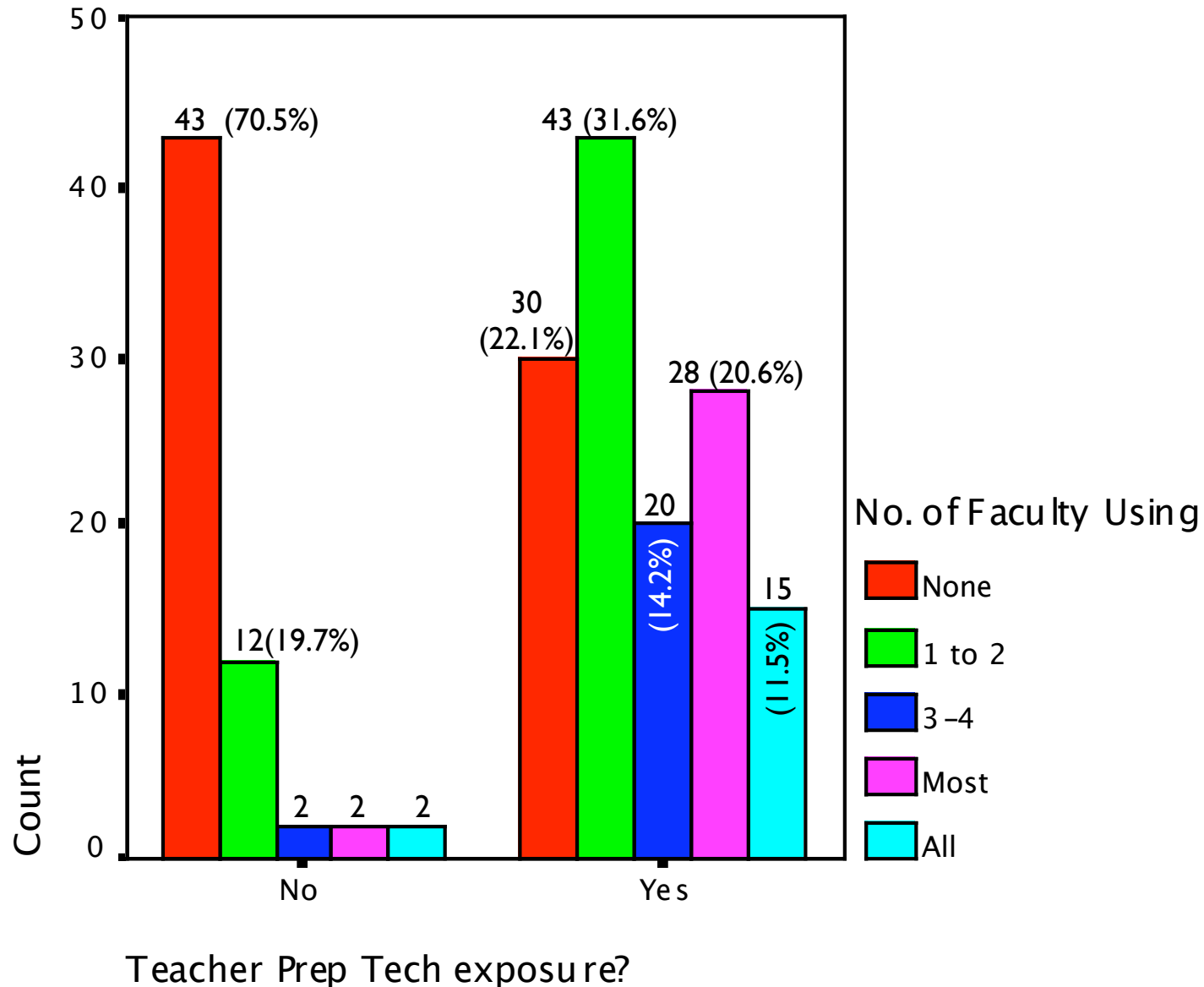
Teacher Preparation

- “Did your teacher preparation experience include exposure to, and use of, technology for teaching and learning?”
 - Yes = 70 percent

Teacher Preparation

- “Technology was important” in preservice program:
 - Males: **31 percent**; Females: **24.3 percent**
- “My preservice teacher training program included teaching with technology methodologies that were beneficial to me”
 - *Disagree or Strongly Disagree*: **65.5% males; 68.2 % females**

Exposure to Technology in Teacher Preparation



Teacher Preparation & Tech Integration

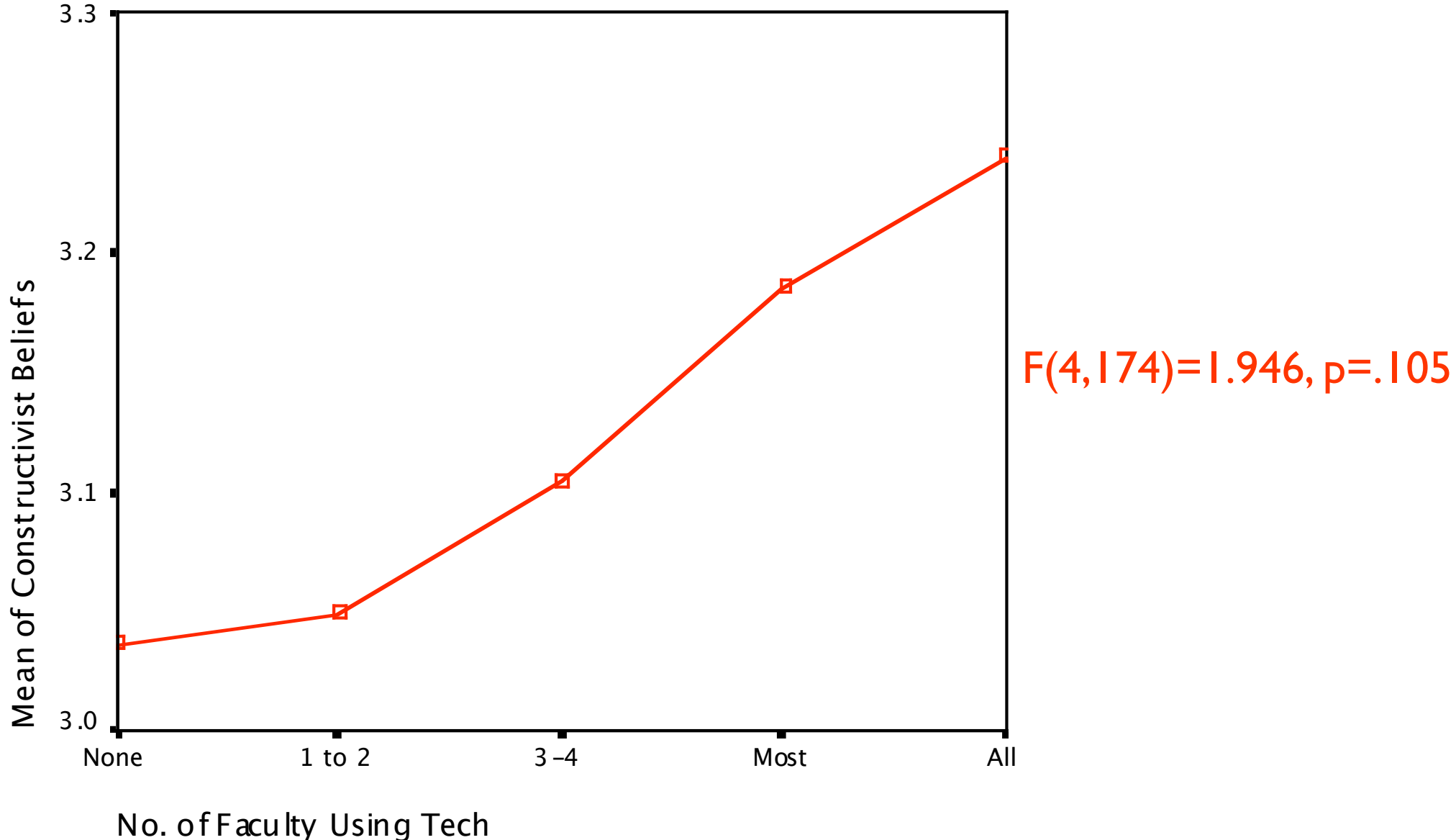
		Created Technology-Based Projects for Students	
		No	Yes
Exposure to Technology for Teaching and Learning in Teacher Preparation Program	No	42.4%	57.6
	Yes	27.5%	72.5%

Chi-square = 4.139, $p = .032$

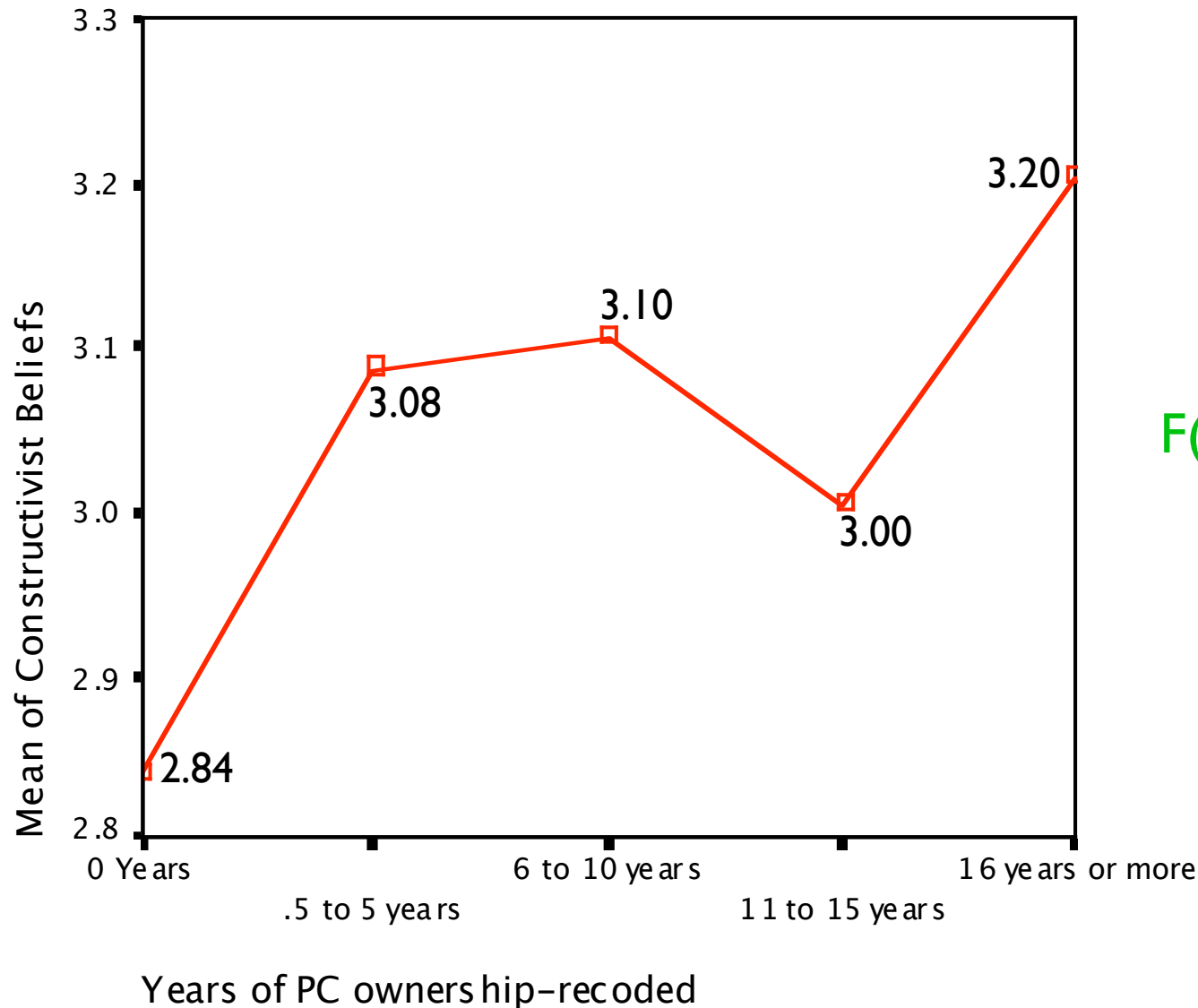
Constructivist Beliefs Scale

- 11 items
- 4-point Likert scale, no neutral point
 - Strongly Agree — Strongly Disagree
- Cronbach's Alpha = .79
- E.g., “Project-based learning works best when the role of the teacher is that of facilitator rather than a direct provider of information.”

Faculty Using Technology & Constructivist Beliefs

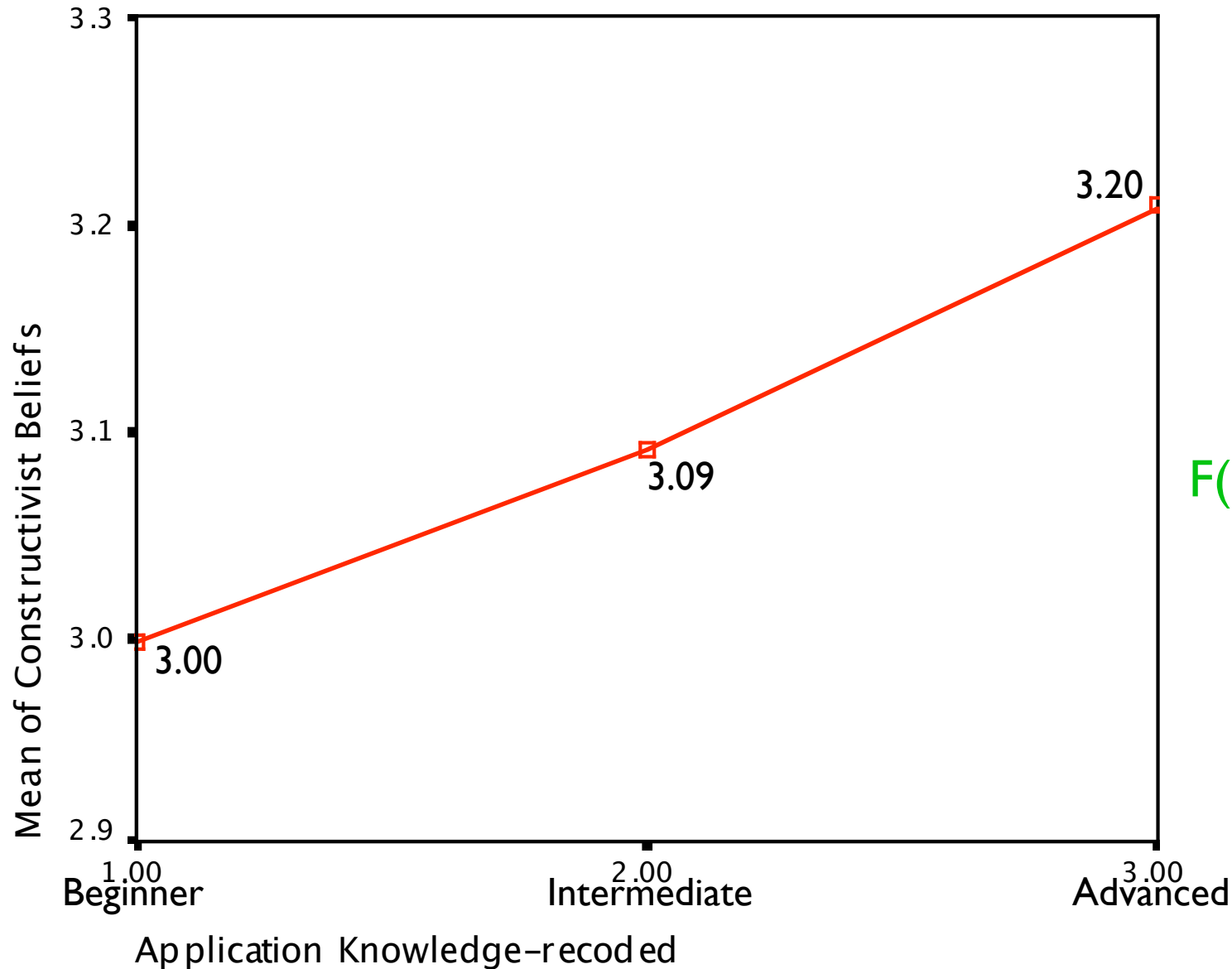


Computer Ownership & Constructivist Beliefs



$F(4, 176) = 2.787, p = .028$

Knowledge of Applications* & Constructivist Beliefs



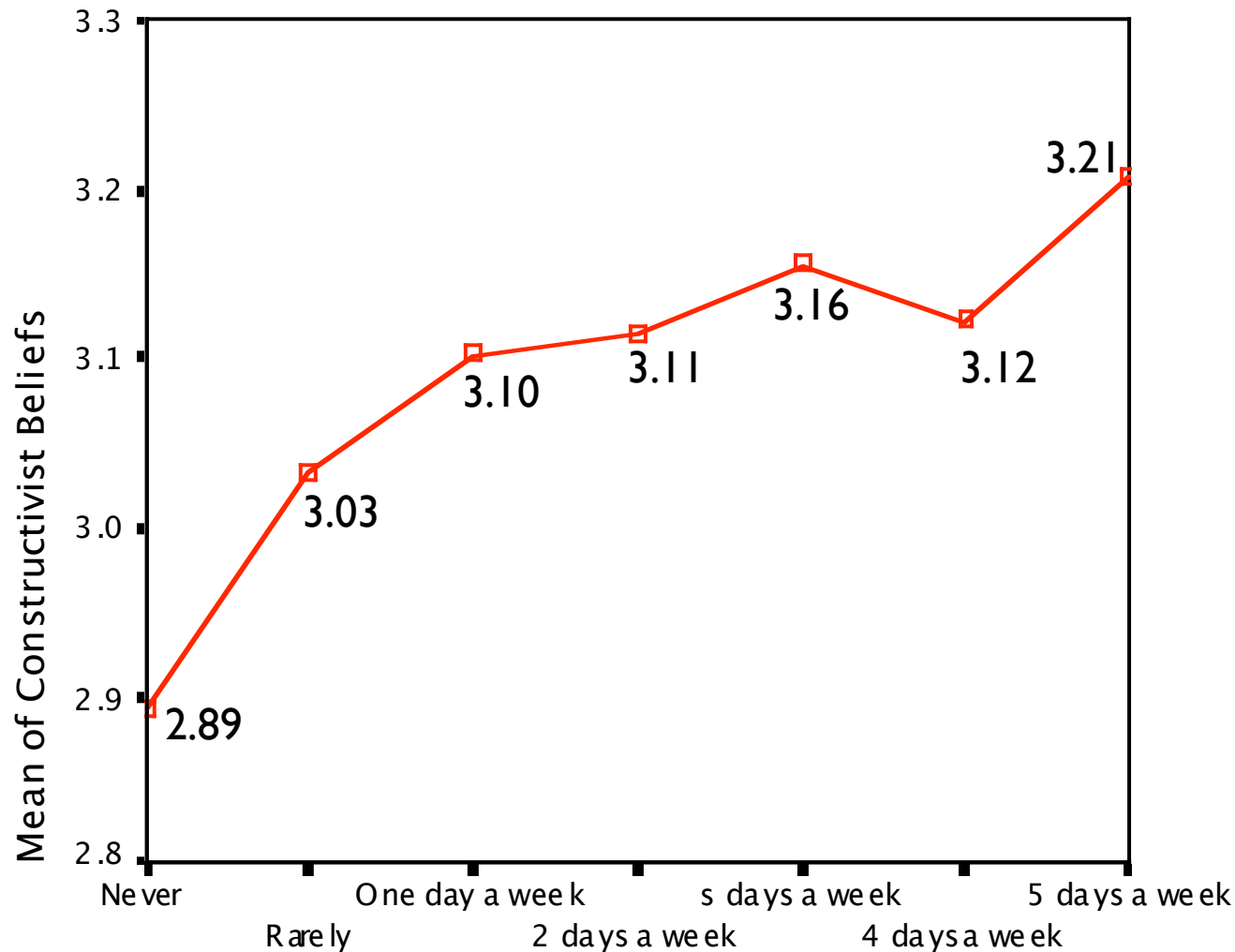
* : Self-rating on IT applications as “Never Used,” “Beginner,” “Intermediate”, “Advanced” recoded into 3 categories of users.

$F(2, 167) = 4.077, p = .019$

Constructivist Beliefs & Tech Integration

	Constructivist Beliefs Scale—Means		
	Yes	No	ANOVA
“Have you ever created technology-based projects for students?”	3.17	2.95	F(1,171) = 16.84, p = .000
“Do you integrate technology into your lesson plans whenever possible?”	3.19	2.97	F(1,170) = 20.40, p = .000

Constructivist Beliefs & Frequency of Tech Use

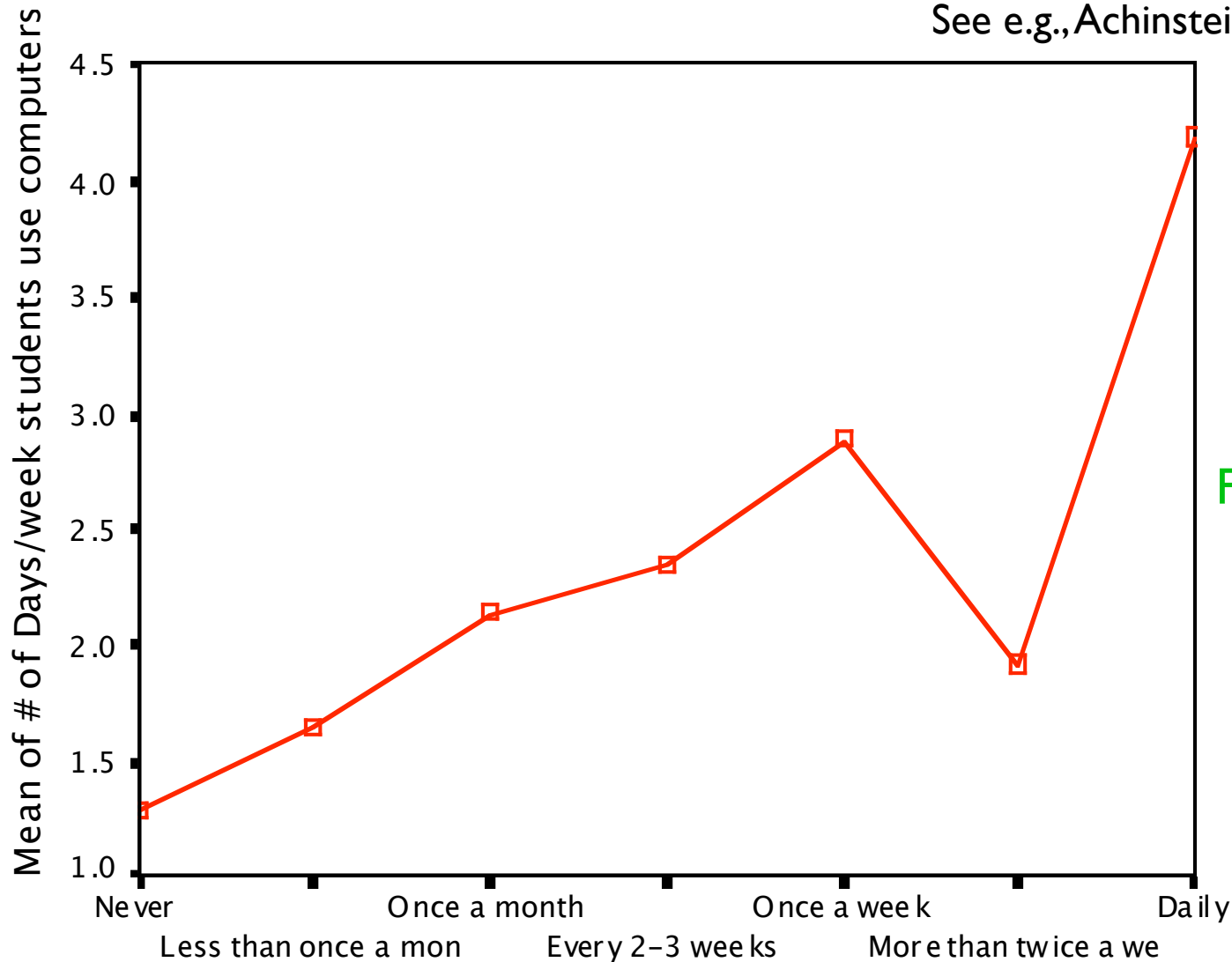


$F(6, 165) = 2.14, p = .051$

Avg tech use in classroom lessons

Collegial Environment

See e.g., Achinstein, Ogawa, & Speigman, 2004



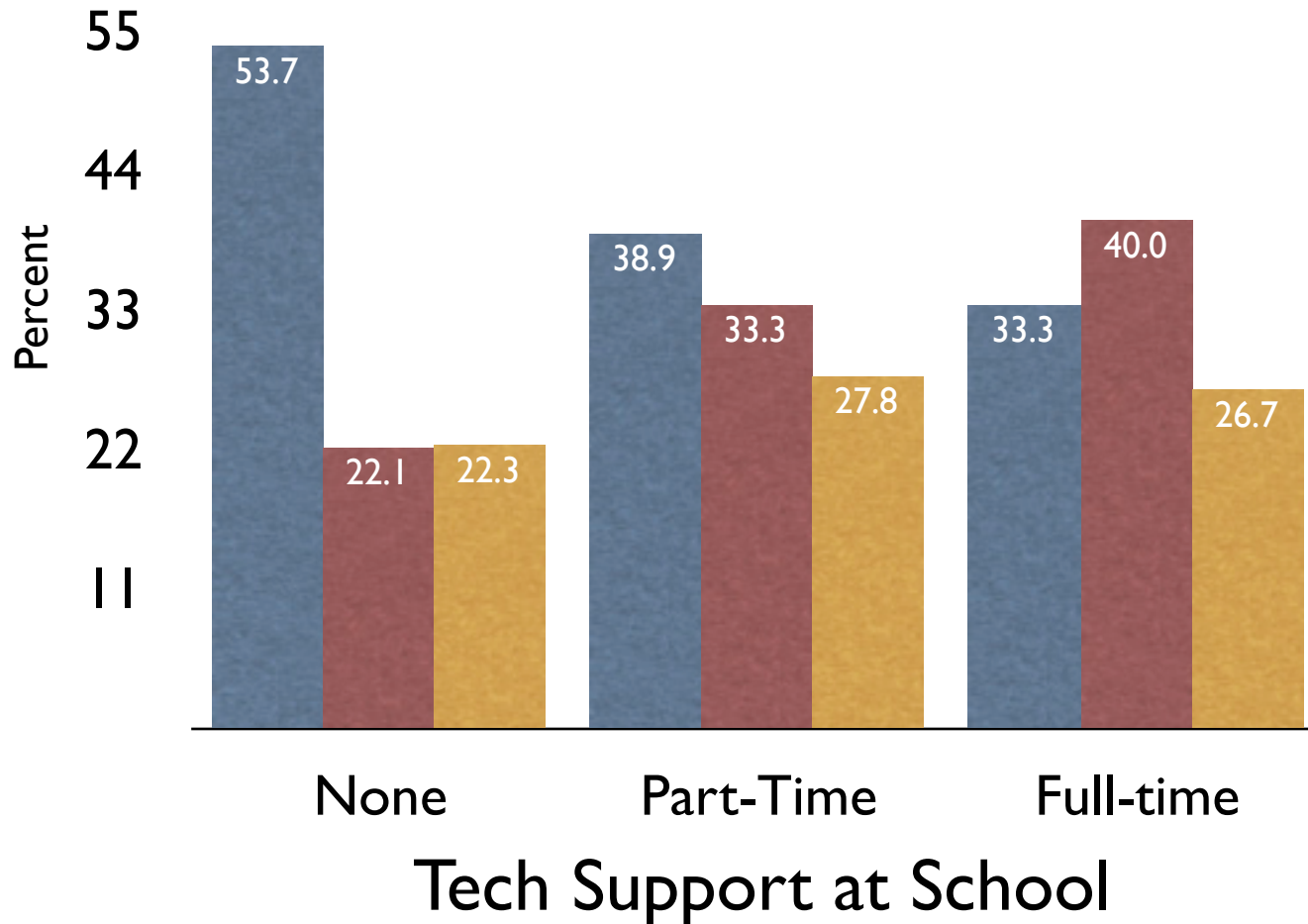
$F(6, 182) = 3.799, p = .001$

Tech discussions with colleagues?

Does Tech Support Matter?

Average student technology use

■ Never/Rarely ■ 1-3 Days/week ■ 4-5 Days/week



Summary

- Teachers (and schools) in Silicon Valley are not different than teachers in other parts of the country
- Exposure to technology-using faculty during teacher preparation seems to increase teachers' integration of technology into their practice.
- Constructivist beliefs are positively correlated with greater technology integration
- Higher technical proficiency is positively correlated with constructivist beliefs *and* with greater technology integration

Thank You!

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