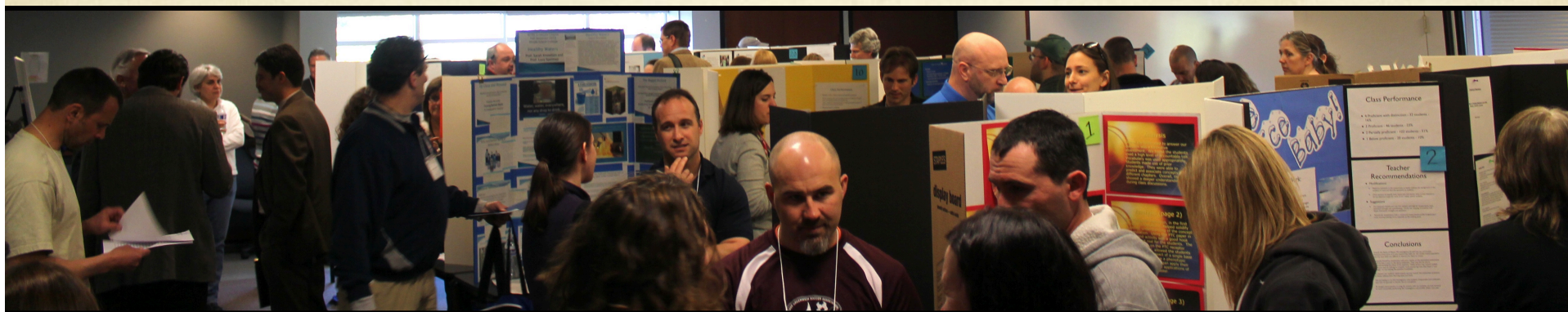


THE RITES MODEL: G6-12 AND HIGHER EDUCATION PARTNERSHIP WORKING TO IMPROVE SCIENCE EDUCATION IN RHODE ISLAND



Joshua Caulkins, Daniel Murray, Glenisson de Oliveira, and Anne Veeger
RITES Project, Rhode Island (NSF MSP #0831974)

UTES Partnership



Providence
Schools



Woonsocket Education Department

Empowering all learners to shape and enrich their changing world.



South Kingstown Public Schools



Cranston Public Schools



**RHODE ISLAND
COLLEGE**



The RITES Model at-a-glance

- Final year of a 5-year, statewide, NSF MSP grant

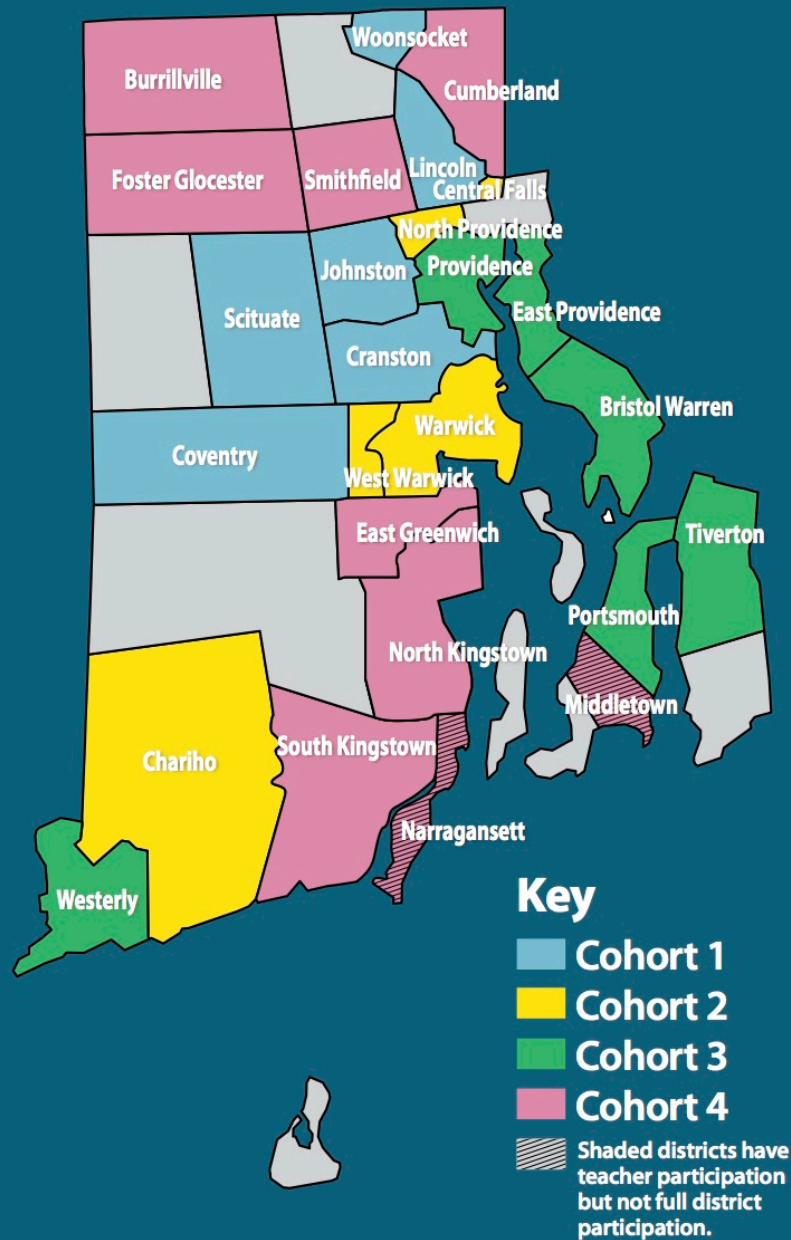
The RITES Model at-a-glance

- Final year of a 5-year, statewide, NSF MSP grant
- All the complexity of a large state education system in one-quarter the area of Los Angeles County. In Rhode Island, there are:
 - 145,000 K-12 students in total
 - 36 school districts (64 HS, 58 MS, 208 ES)

The RITES Model at-a-glance

- Final year of a 5-year, statewide, NSF MSP grant
- All the complexity of a large state education system in one-quarter the area of Los Angeles County. In Rhode Island, there are:
 - 145,000 K-12 students in total
 - 36 school districts (64 HS, 58 MS, 208 ES)
- RITES goal: 75% science teachers in 75% of the middle/high schools
 - Currently 10% over our goal

UTES School Districts by Cohort



○ RITES is statewide
(colored districts)

The RITES Model at-a-glance

- Teaching Teachers...
 - Professional Development Model
 - Resource Teams
 - Pairs of Instructors
 - Content Expertise, Pedagogy Expertise
 - Develop a short course and “investigation”
 - 28 Higher Education faculty
 - 25 G6-12 Teachers



The RITES Model at-a-glance

- Teaching Teachers...
 - Professional Development Model
 - 40+ Online Investigations Developed
 - Earth Science, Physical Science, Life Science
 - Summer Sessions
 - 12 courses taught each summer
 - 100 to 150 teachers trained each summer



The RITES Model at-a-glance

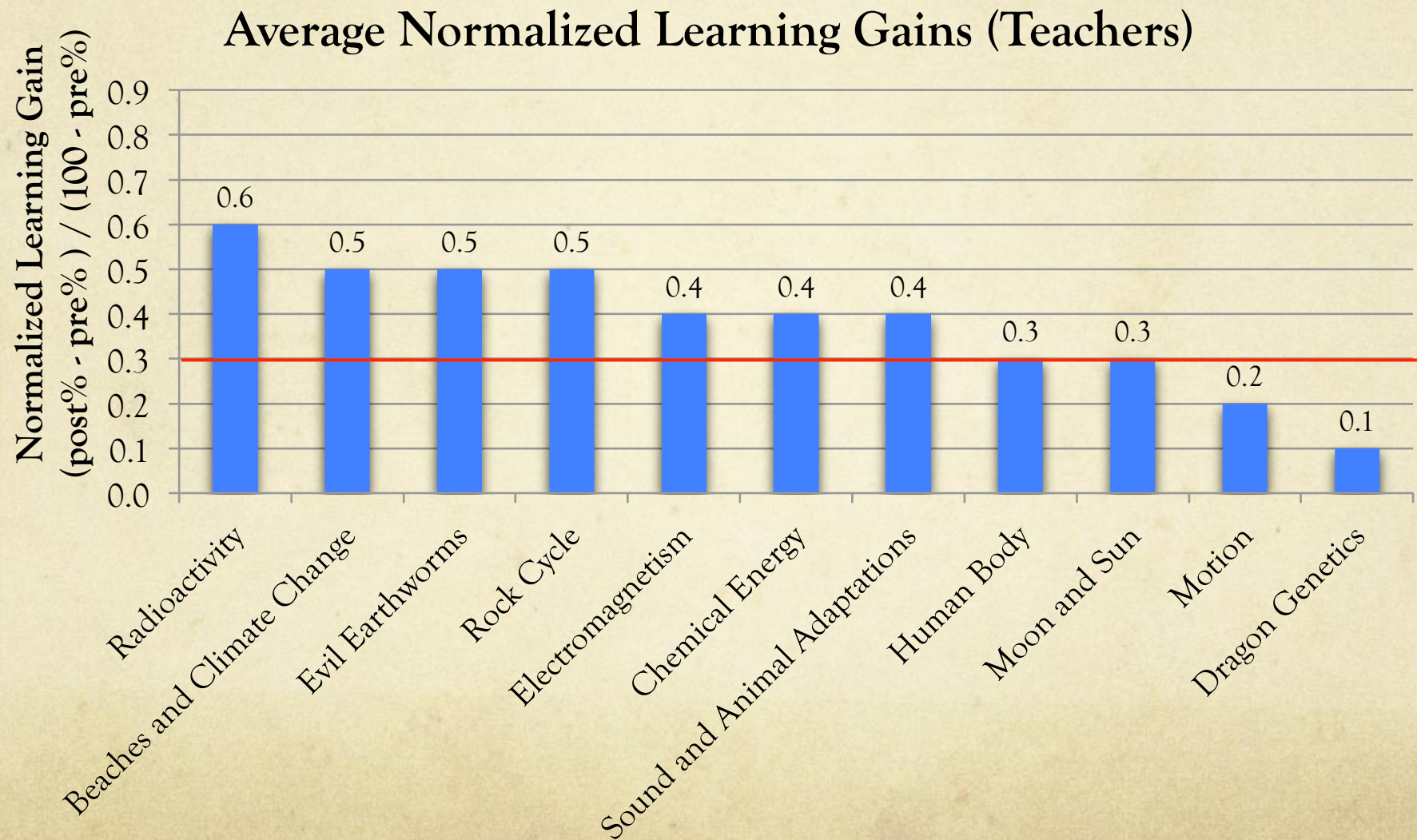
- Teaching Teachers...
 - Professional Development Model
 - Teachers must:
 - Participate for 2 years
 - Take 2 courses each summer
 - Participate in Fall and Spring Conferences
 - Develop and present teacher “artifact”



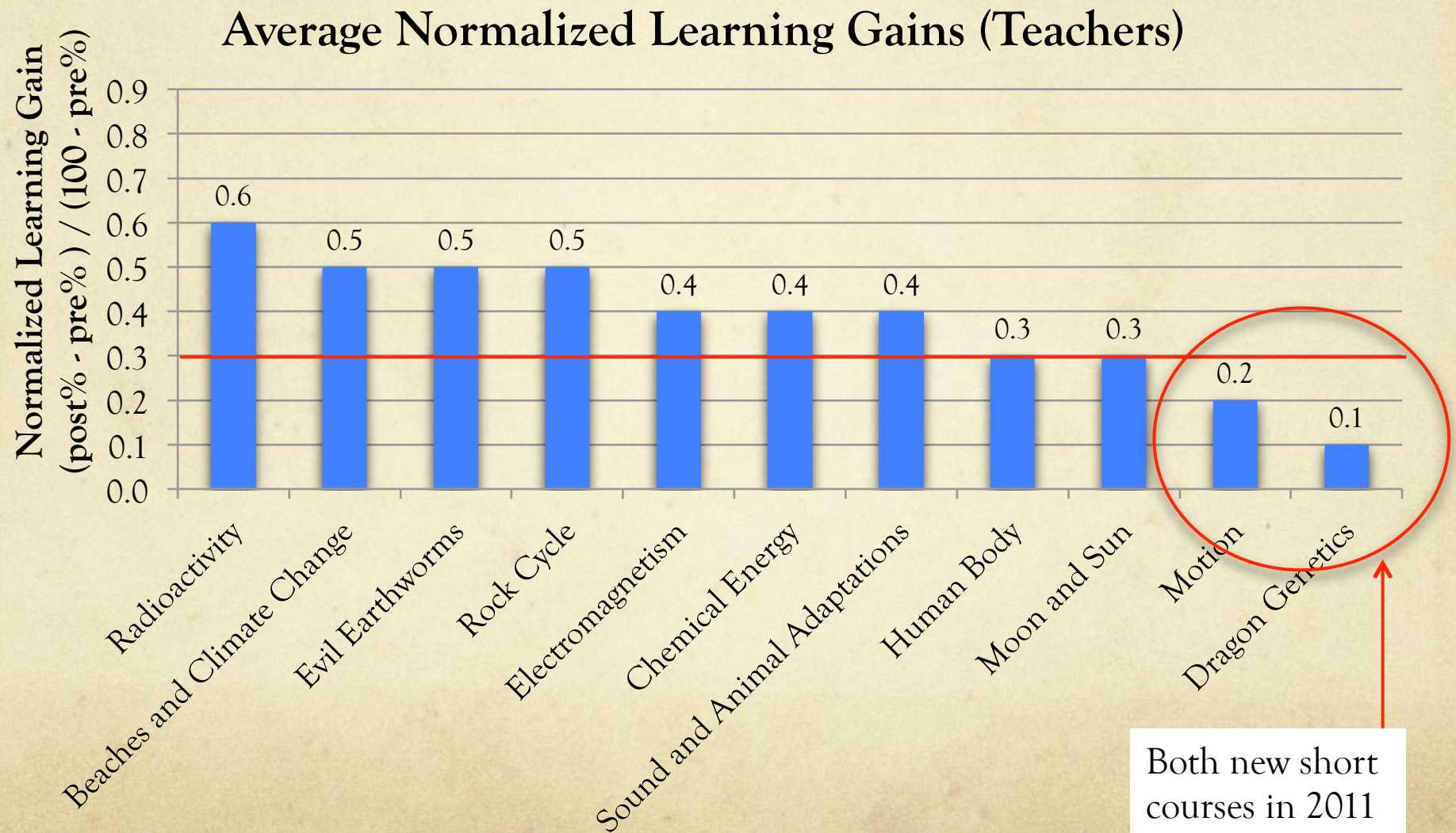
RITES Outcomes and Effectiveness

- Pre-Post Test Scores of Teachers (Summer Short Courses)
- Modified RTOP Scores
- Pre-Post Test Scores for Students of RITES Teachers (Investigations)
- Teacher Satisfaction Data
- NECAP Scores

Summer Short Courses 2011

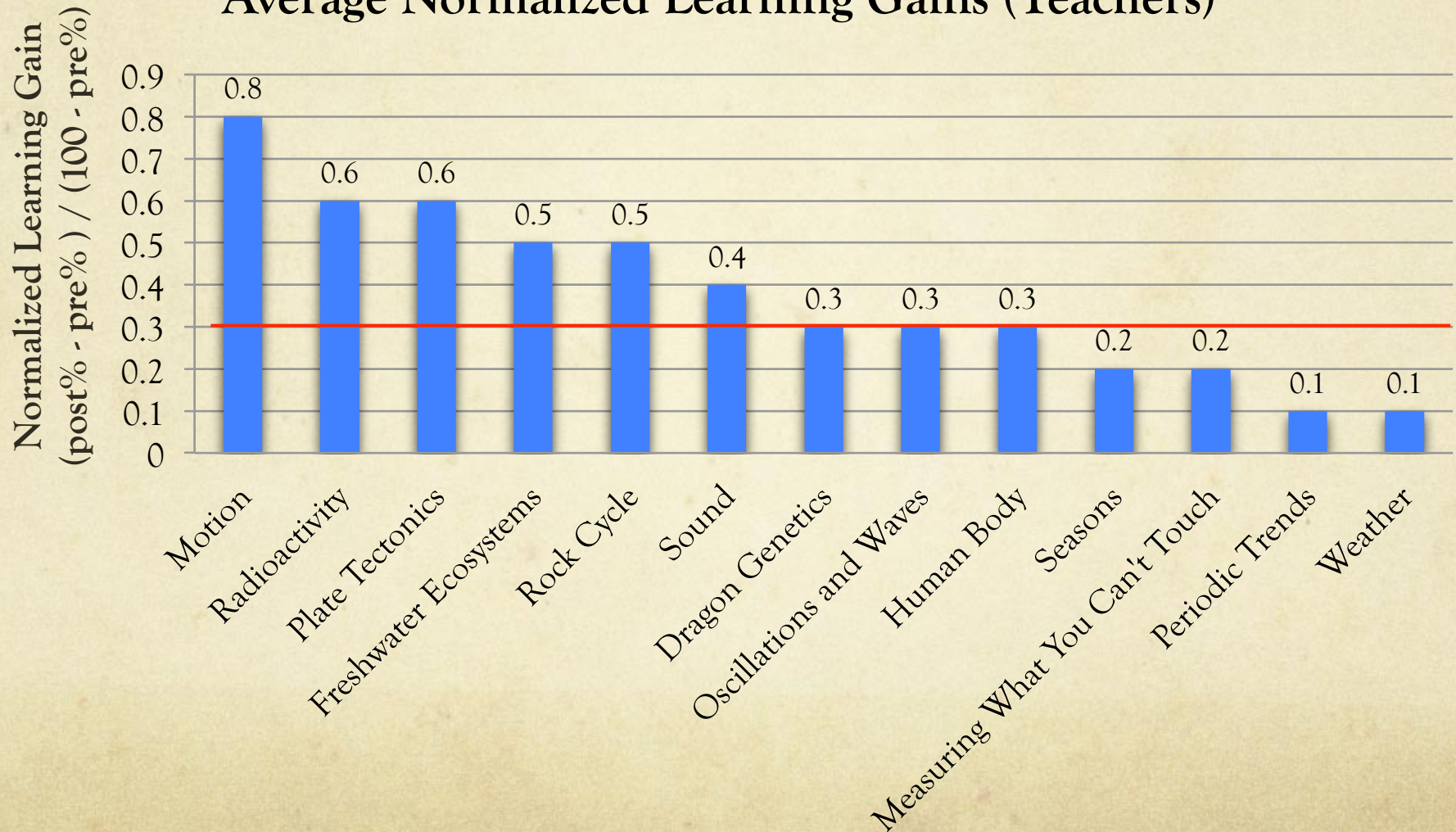


Summer Short Courses 2011



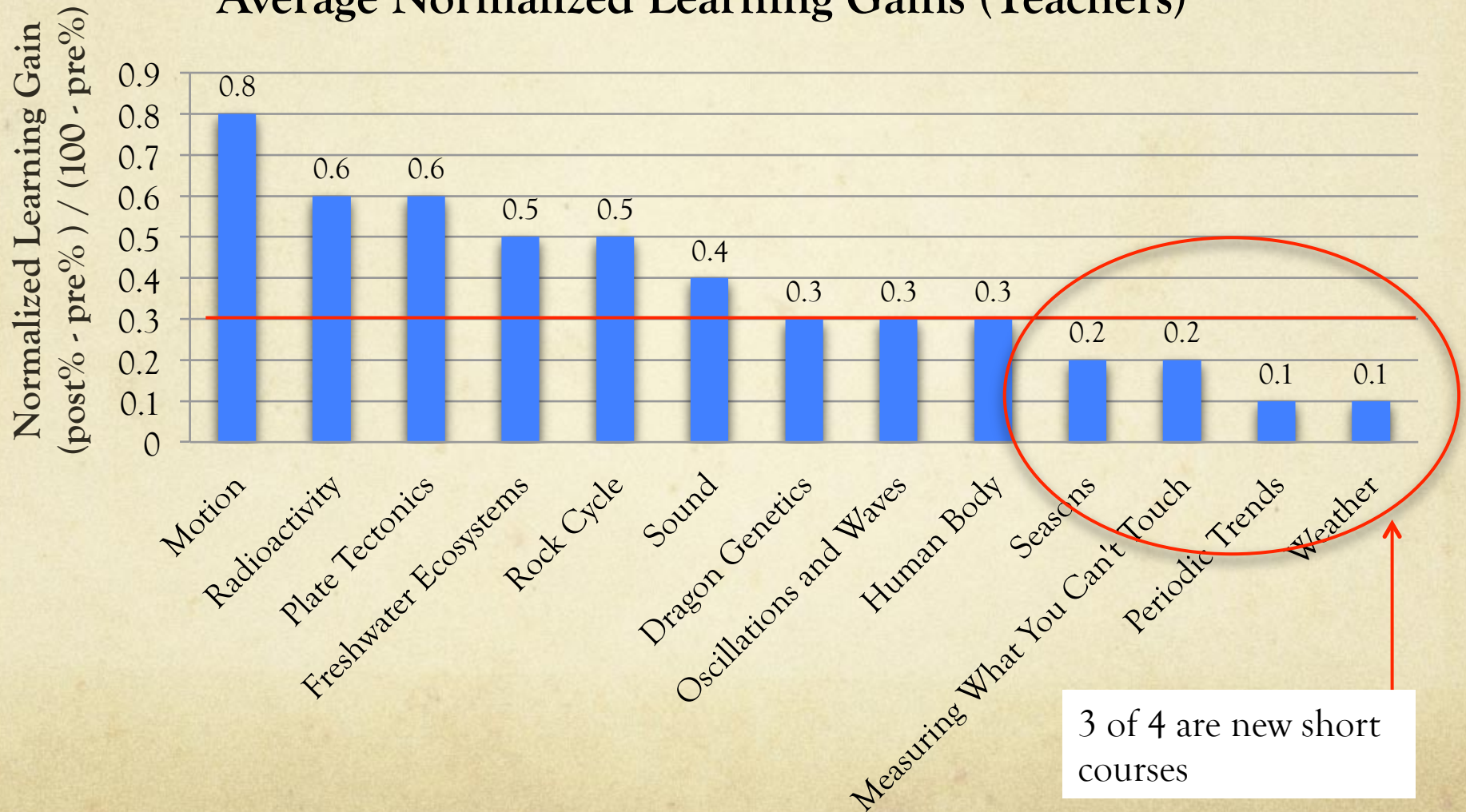
Summer Short Courses 2012

Average Normalized Learning Gains (Teachers)

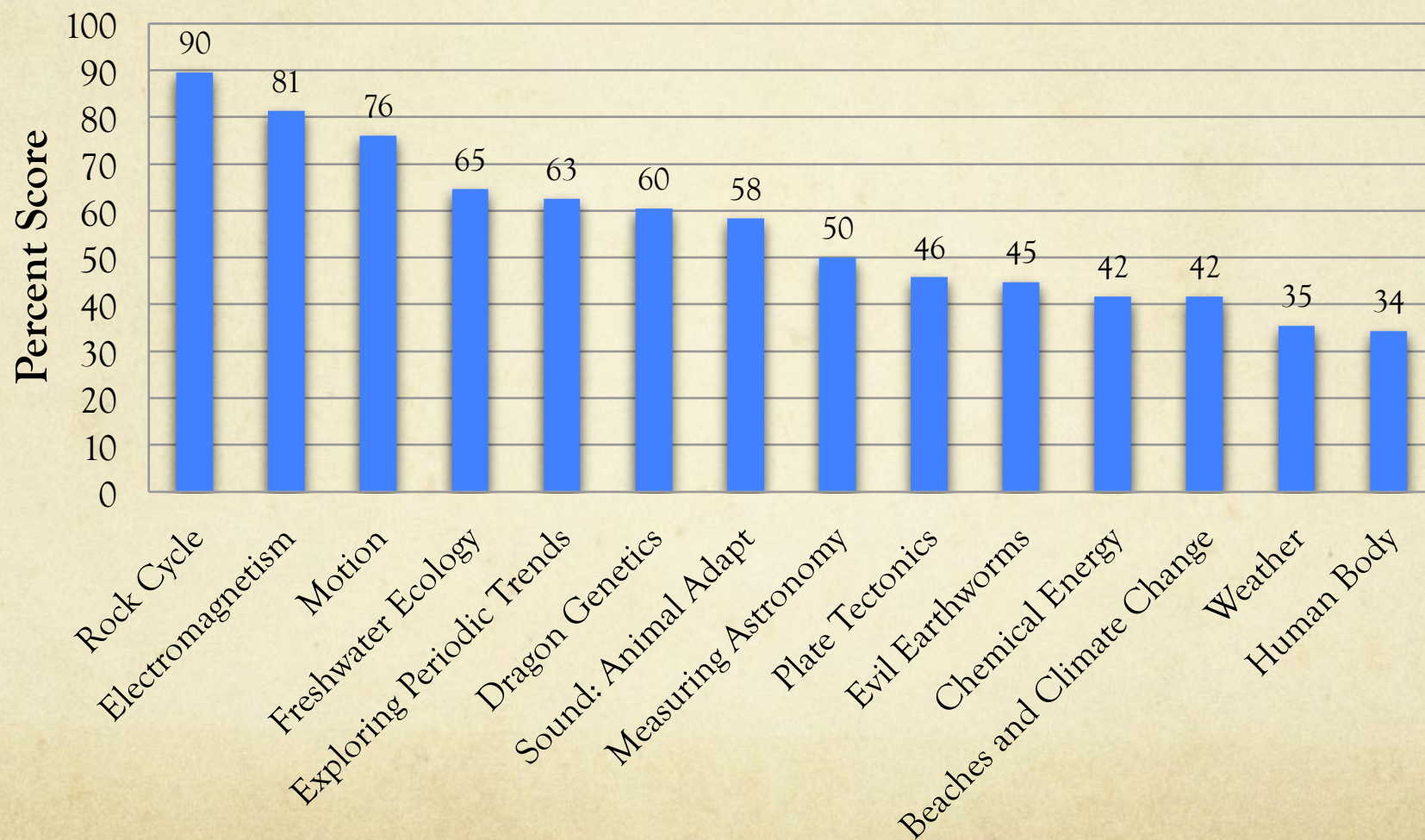


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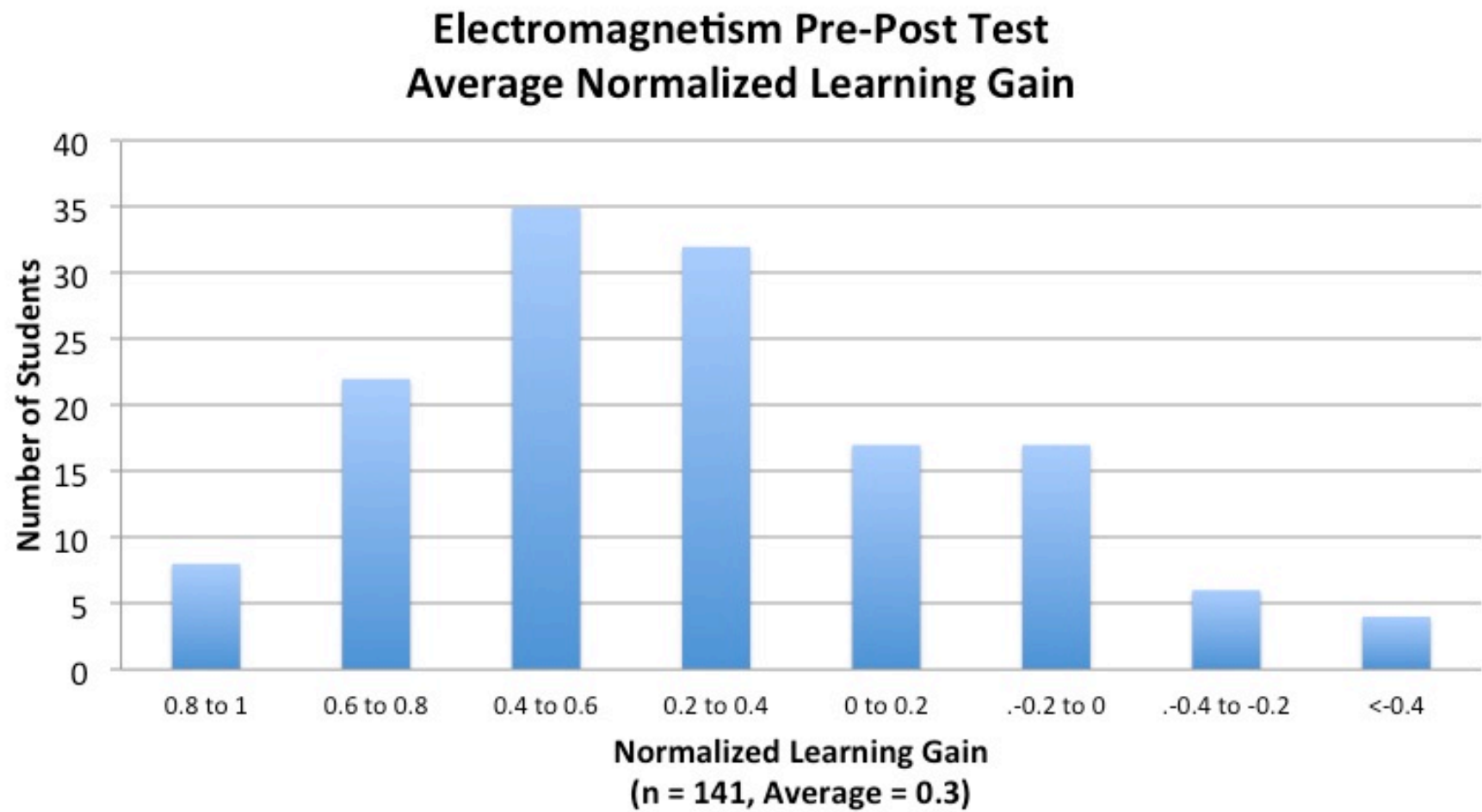
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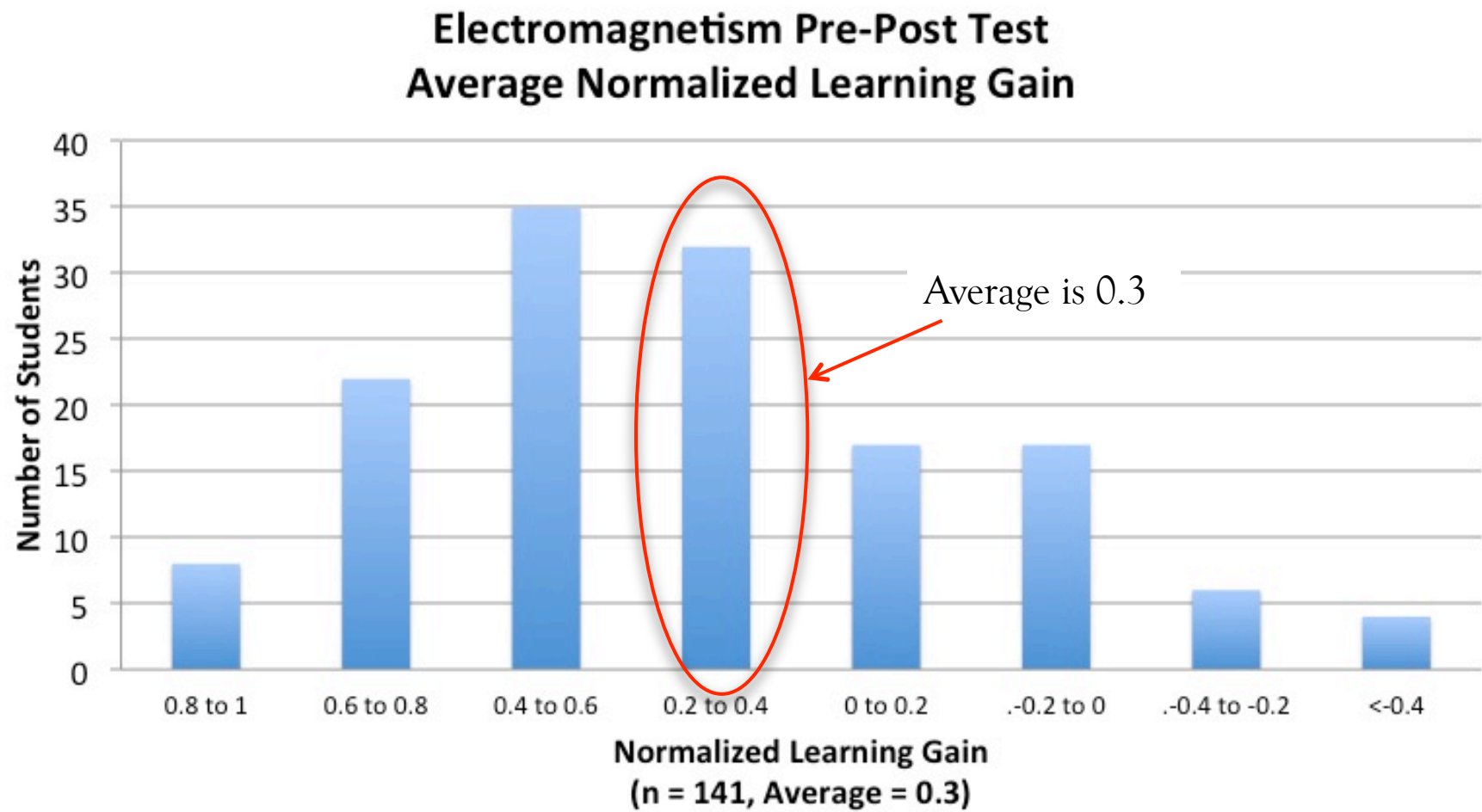
Modified RTOP Scores



RITES Classroom Normalized Learning Gains



RITES Classroom Normalized Learning Gains



Teacher Satisfaction Surveys

(Surveys used a 4-point Likert scale: Strongly Agree – Agree – Disagree – Strongly Disagree)

Survey Question	Agree	Disagree	n
1. Well Planned/Organized	99	1	343
2. Well Prepared	99	1	343
3. Variety of Learning Styles	96	4	342
4. Appropriate Pace	92	8	343
5. Topics Met Need/Concern	92	8	342
6. Participants Prior Experiences Used	97	3	336
7. Adequate Time to Reflect	94	6	342
8. Questions and Concerns Handled Appropriately	99	1	339
9. Feel Prepared to Use RITES	93	7	338
10. Will Use More Inquiry Activities	90	10	338
11. Increased my Knowledge	88	12	341
12. Feel More Comfortable Using Technology	83	17	334
13. Feel Well Prepared to Use Activities that Integrate Math/Science	87	13	339
14. Shared Ideas w/ Other Teachers	97	3	341
15. Would Recommend to Other Teachers	95	5	343
16. Overall Successful Learning Experience	94	6	343

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Overall, highly
satisfied with PD

Student Standardized Test Scores

- Preliminary results from NECAP data:
 - Students who received Science instruction from a RITES-trained teacher are likely to have better Science Inquiry skills than students who did not receive RITES-trained instruction.
 - Only apparent after 2nd year of training; one year of training does not show an effect on the standardized test scores. Consistent with current findings that > 1 year of PD is required.

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Example District:

	<u>Spring 2010</u>			<u>Spring 2011</u>		
	M	(SD)	n	M	(SD)	n
RITES	7.10	(3.08)	101	9.68	(3.29)	182
Non-RITES	7.37	(3.26)	194	8.07	(4.52)	56
Difference	-0.27			1.61		
t-test	t(293) = 0.69			t(236) = 2.92 (@ p<.01)		

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Resource Team Model

- According to unpublished work by RITES-affiliated researchers (Knowlton, Fogleman and Reichsman), resource team members, both higher education and G6-12 teacher members, expressed high levels of satisfaction and their intention to continue their partnership via classroom visits, resource sharing, and University courses for teachers.

Summary

- RITES PD model is having a significant impact on teacher content gains and student content and inquiry gains evidenced through pre-post testing.
- Short courses are learner-centered, inquiry-driven and highly interactive.
- Teachers value the multi-year approach.
- Student standardized test scores of RITES teachers showed increases when compared to non-RITES teachers.
- Visit our website and checkout the FREE online investigations:
 - www.ritesproject.net

Special thanks to...

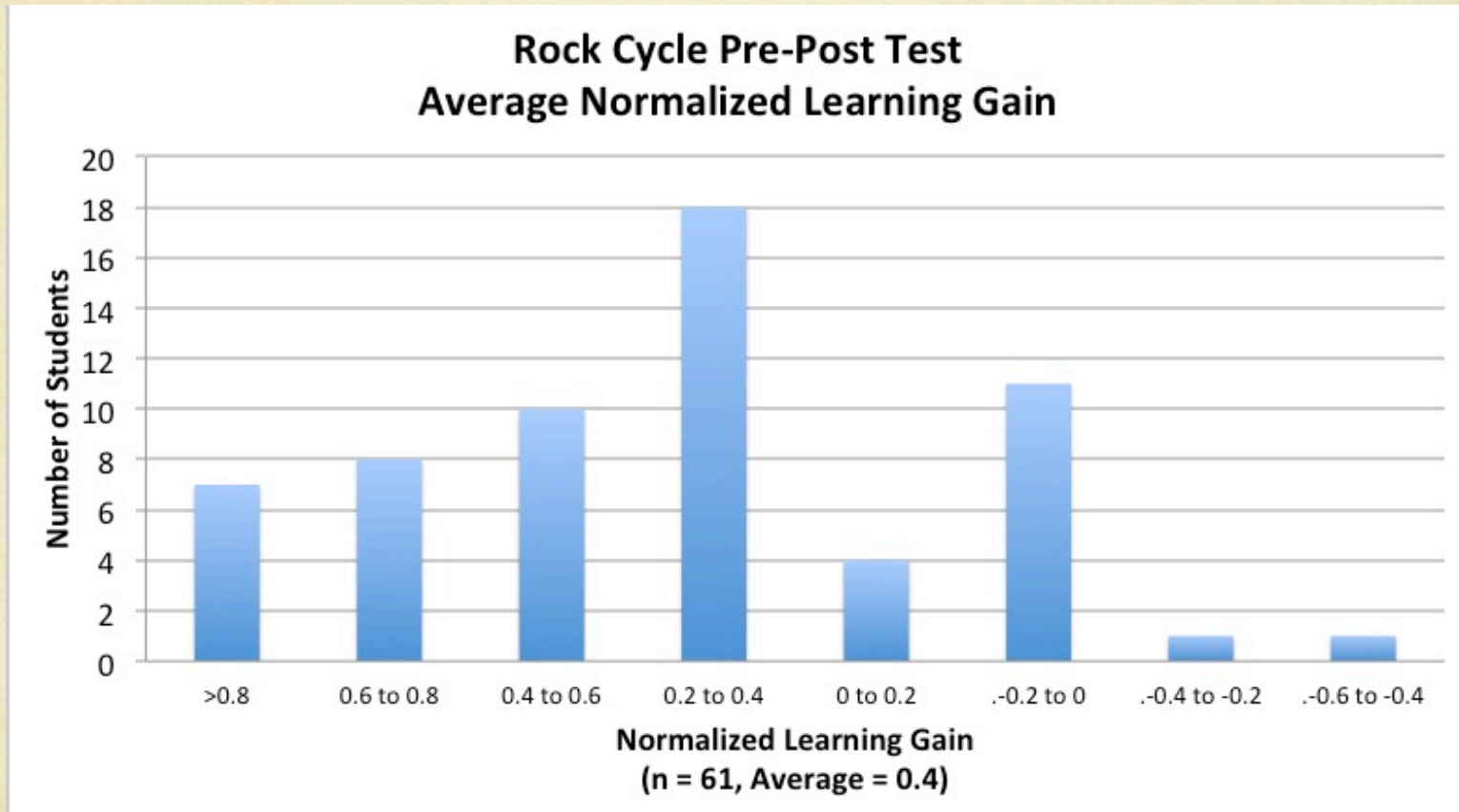


- Rhode Island teachers
- Rhode Island students
- Partnering RI School Districts
- RITES Researchers (Stephen Brand, Sarah Knowlton, Jay Fogleman, and Frieda Reichsman)
- Education Alliance (Brown) and Concord Consortium
- NSF MSP Program



www.ritesproject.net

RITES Classroom Normalized Learning Gains



RITES Classroom Normalized Learning Gains

