The Impact of Collaborative Teaching for Graduate Students

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Introduction

- Collaborative teaching effort between the College of Education at the University of Florida and its affiliated developmental research school.

UF | College *of* Education
University *of* Florida

- We propose that team-teaching arrangements that place graduate students in K-12 classrooms provide benefits for
  - Graduate students
  - In-service teachers
  - Students

Communities of Practice

- “Communities of practice are groups of people who share a concern, a set of problems, or a passion about a topic and who deepen their knowledge and expertise by interacting on an ongoing basis” (Wenger, McDermott, & Snyder, 2002).
- Flexibility between the roles of expert and novice

Logistics of Collaboration

- Team-teaching of AP Statistics
  - Highly-regarded mathematics teacher without previous experience teaching statistics
  - Three graduate students with statistical content knowledge without K-12 teaching experience
- All four members of the teaching team generally present for all class meetings
- Rotating role of lead teacher
- Collaborative planning and revision of lessons

Logistics of Collaboration

- Collaborative writing and grading of assessments
  - Analysis of student work is valuable for both teachers and researchers (Shaughnessy, 2006).
  - AP Statistics-style (holistic) grading:

Each part scored as Essentially Correct (E), Partially Correct (P), or Incorrect (I) to classify an item response into one of the following:

- Complete Response (4)
- Substantial Response (3)
- Developing Response (2)
- Minimal Responses (1)

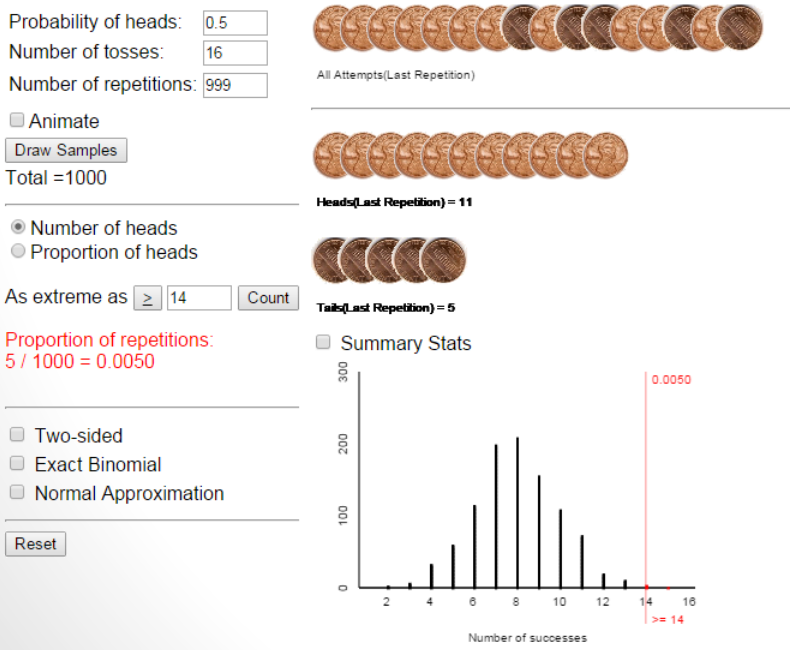
Benefits for Graduate Students

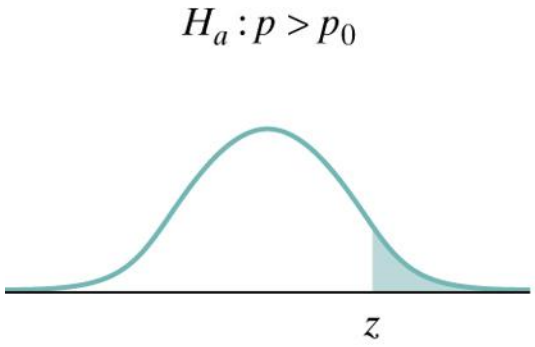
- Teaching experience in collaboration with an accomplished classroom teacher
  - Highlights intersection of theory and practice for education students
  - Professional development for students in diverse content areas

- Benefits of multiple teachers in the classroom
  - Timely feedback from peer observations
  - Meaningful discussions of effective teaching strategies, learning trajectories, philosophies of education, etc.
  - Interactions with small groups of students

Benefits for Graduate Students

- Opportunities for educational research
  - Students' conceptual understanding of inference: Connections between randomization-based and traditional methods



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1-PropZTest
   prop>.5
   z=3
   p=.00135
   p̂=.875
   n=16
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Benefits for Graduate Students

- Opportunities for educational research
  - Investigation of AP statistics students' understanding of technical terminology with possible lexical ambiguities
    - *a letter used to take the place of a number in an equation* [Math, Medium]
    - *something that affects an outcome* [Science, Medium]
    - *The results had a large range and were highly variable* [Other (Meaningful), Medium]
  - Investigation of statistics teachers' identities
  - Extended exposure to students
    - Lots of time to refine ideas
    - Many sources of inspiration for new research ideas

Benefits for In-Service Teachers

- Extended professional development
- Statistics instruction consistent with the GAISE framework modeled by graduate students
- Improved statistical content knowledge

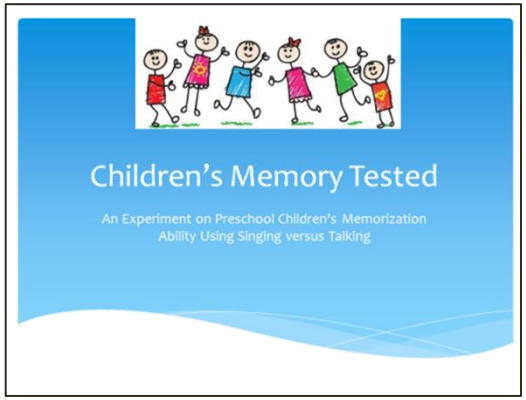
- Further study of in-service teacher benefits and challenges is planned for a future project

Benefits for Students

- Increased availability of the teachers and amount of individual attention
  - *"We [had] 3 statistics wizards, there was always someone to ask or explain something."*
- Multiple teaching styles and explanations appeal to different learning styles
  - *"The set up of having three different teachers alternate teaching us I found very helpful. Through that style of teaching you got a variety of styles and new ideas were presented to you. Like if you didn't understand it one way maybe the way of the other teachers would make sense to you."*

Benefits for Students

- Pairs of students conducted statistical investigations with graduate students serving as “consultants”
  - Formulate questions
  - Collect data
  - Analyze data
  - Interpret results



Benefits for Students

- Graduate students provided mentoring
  - *"I really liked the team teaching arrangement. I believe having three different teachers who are fresh with statistics contributed to our learning. We could understand more from them since we can relate to them since they are college students."*
  - Discussion of next steps in education

- Overall, students reacted positively to the team-teaching arrangement
  - Out of 20 respondents, 7 rated the class Above Average and 13 rated it Excellent

Challenges

- Significant time commitment
- Transition between teachers was sometimes confusing for students.
- Too many cooks spoil the broth?

Other Collaborative Teaching Arrangements

- “Guest consultants” facilitate extended activities and projects
- Regular peer observations and feedback
- Pairing a classroom teacher with one graduate student

Conclusion

- The collaborative teaching effort described resulted in observable benefits for the graduate students, in-service teacher, and students involved, and we propose that it serve as a model for future collaborations between universities and secondary schools.

- After this team teaching experience, we argue that the benefits merit the investment of graduate student time and university resources.

Questions?

- Thank you!
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  - * Equal Authorship