SimMentoring Preservice Teachers: Findings from Year One (FIPSE Grant # P116B060398-07)

Rhonda Christensen

Gerald Knezek

University of North Texas

Paper Presented to SITE 2008, 3/5/08

Christensen & Knezek

Description of Problem

- 3 Year, $600 K FIPSE Grant to use simSchool with preservice teachers
  - SimSchool based on Five Factor Model of Personality (McCrae & Costa)

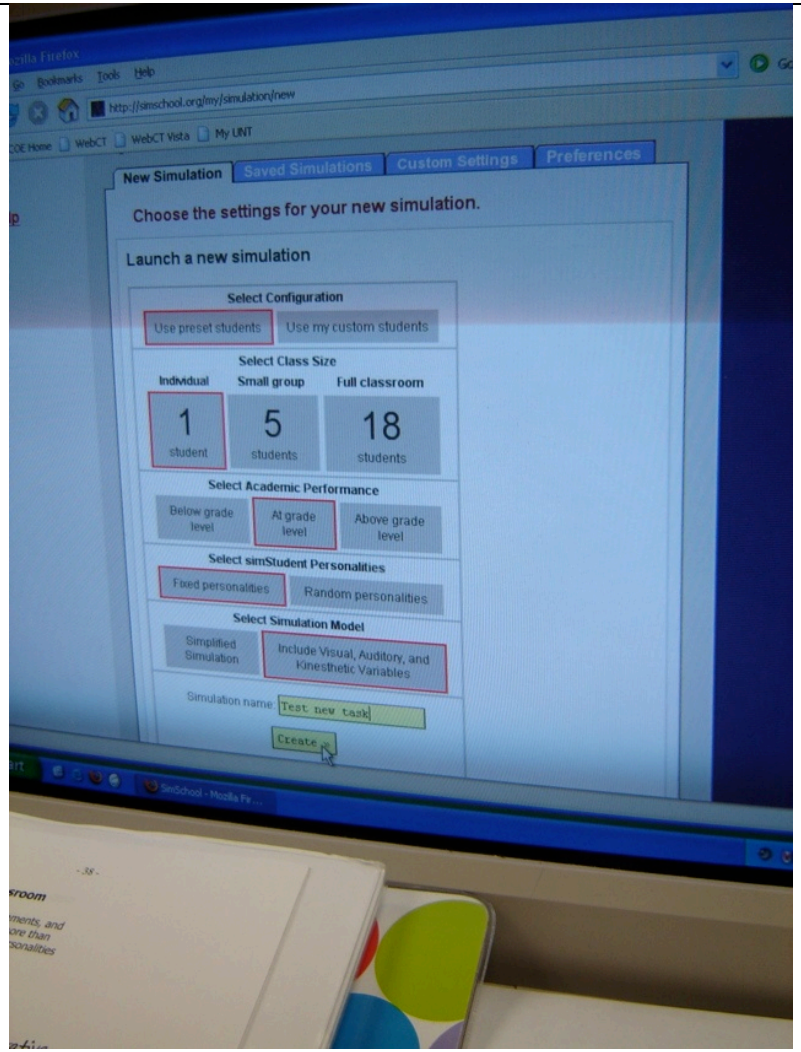
    Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism (OCEAN)

    The first public mention of the Five Factor Model was by LL Thurstone in his "address of the president before the American Psychological Association," Chicago meeting, September, 1933 (Wikipedia)

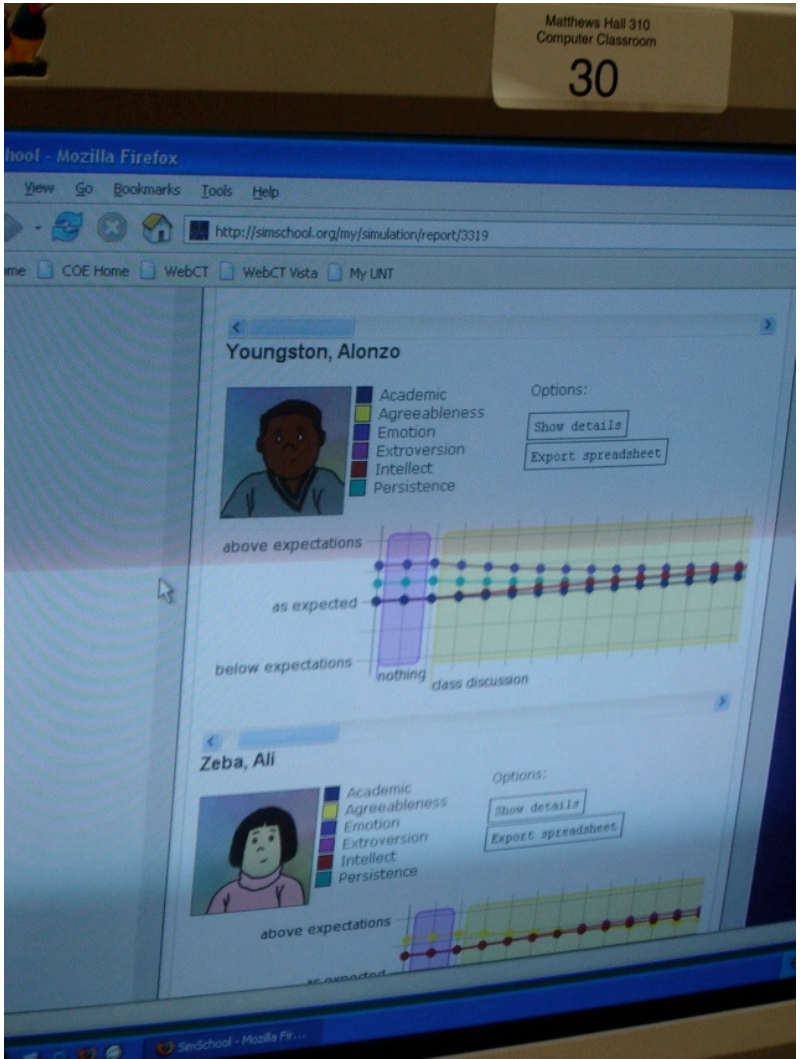
simSchool.org

Web-based, Dynamic Simulation

Choose Configuration, Make Run



Receive Feedback, Analyze Run



Considerations when Assessing Outcomes

- Innovation: Teacher trainees don't break real students while learning the process
- Goal: Increase beginning teacher retention
- Difficulty: How to assess learning in the simulator, before trainees get to a real classroom

Subjects: Preservice Teachers

Number of Preservice Candidates Served in Year 1

- Spring 2007
  - 4th year pre-student-teaching. observation: 32
  - 3rd year teaching/learning: 26
  - 2nd year technology integration: 24
- Summer 2007
  - 3rd year learning theories: 29

Instrumentation: Technology Measures (Ropp, Christensen & Knezek)

- TPSA: Technology Proficiency Self Assessment
  - Email, WWW, Integrated Applications, Teaching with Technology
- CBAM LoU (Level of Use)
- Stages of Adoption of Technology
- ACOT Teacher Stages

Instrumentation: Teacher Preparation Survey (Vandersall, 2006)

- Twenty-five items from two domains:
  - Perceptions of teaching (10 items)
    - Factor Analysis revealed 2 factors
      - Instructional Self-Efficacy (confidence can fix problems that arise)
      - Learning Locus of Control (teacher can influence or not)
  - Teaching skill (15 items)
    - Factor Analysis revealed 1 factor
      - Self appraisal of teaching ability

Instructional Self Efficacy Scale (5 Items)

- Alpha = .72 Spring, .79 Fall '07
  - TPS 1I. If I really try hard, I can get through to even the most difficult or unmotivated students.
  - TPS 1G. If a student in my class becomes disruptive and noisy, I feel assured that I know some techniques to redirect him/her quickly.
  - TPS 1C. When I really try, I can get through to most difficult students.
  - TPS 1H. If one or more of my students couldn't do a class assignment, I would be able to accurately assess whether the assignment was at the correct level of difficulty.
  - TPS 1F. If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson.

Home/School Locus of Learning Control (5 Items)

- Alpha = .57 Spring ‘07 (< .6 Unacceptable DeVellis)
  - TSP 1D. A teacher is very limited in what he/she can achieve because a student’s home environment is a large influence on his/her achievement.
  - TSP 1J. When it comes right down to it, a teacher really can’t do much because most of a student’s motivation and performance depends on his or her home environment.
  - TSP 1B. If students aren’t disciplined at home, they aren’t likely to accept any discipline.
  - TSP 1E. If parents would do more for their children, I could do more.
  - TSP 1A. The amount a student can learn is primarily related to family background.

Teaching Skills (15 Items)

- Alpha = .97 Spring ‘07

  How well prepared are you for:

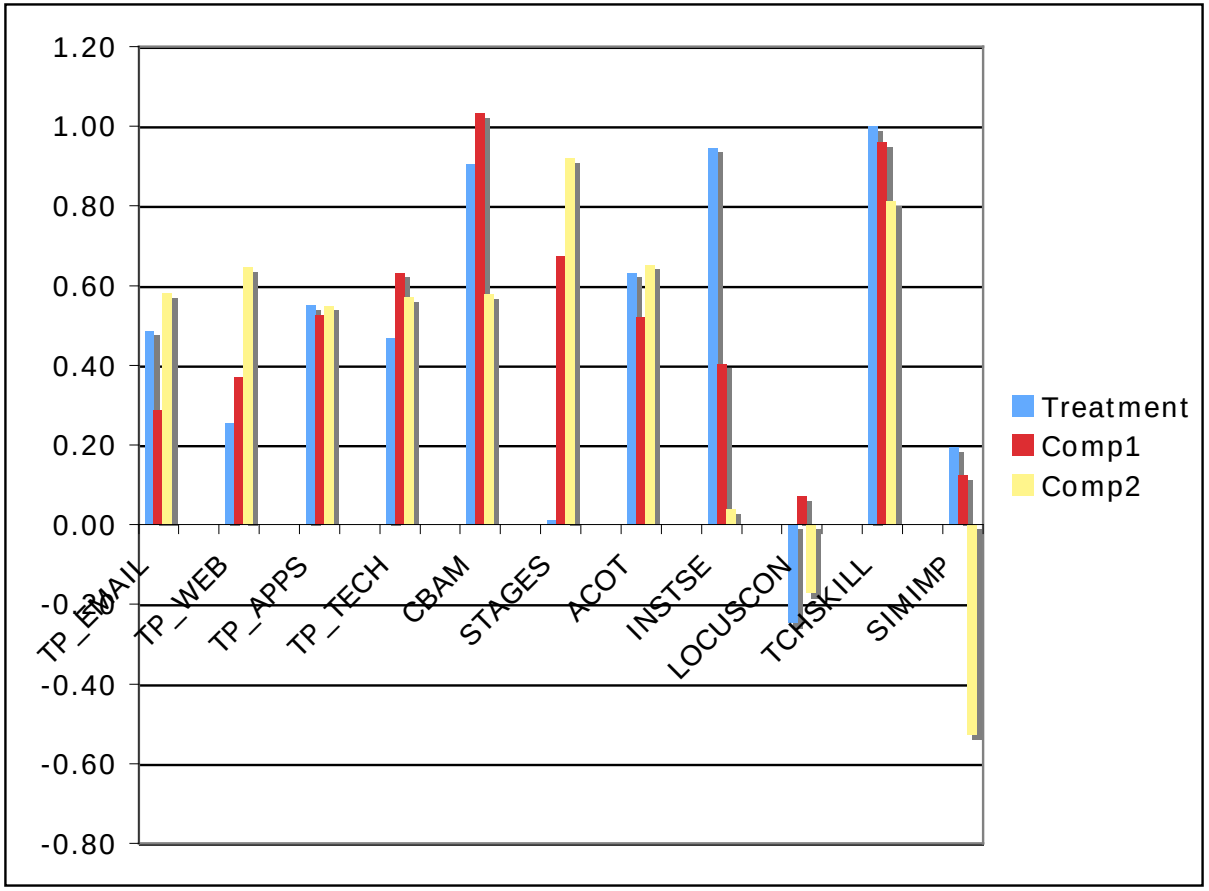
  - Describing the teaching context.
  - Stating objectives clearly.
  - Stating objectives so they are aligned with goals.
  - Selecting objectives aligned with student needs
  - Selecting varied and complex objectives.
  - Selecting a broad array of teaching strategies.
  - Sequencing teaching strategies.
  - Allotting time for instruction realistically.

Teaching Skills (15 Items) (Cont.)

How well prepared are you for:

- Developing high-quality adaptations.
- Developing a wide array of adaptations.
- Interpreting on-task behavior accurately.
- Interpreting assessment results accurately.
- Connecting teaching and learning.
- Analyzing my own teaching performance.
- Making decisions based on the assessment results from my students.

Major Findings:
Pre-Post Gains (Cohen's D Effect Size)

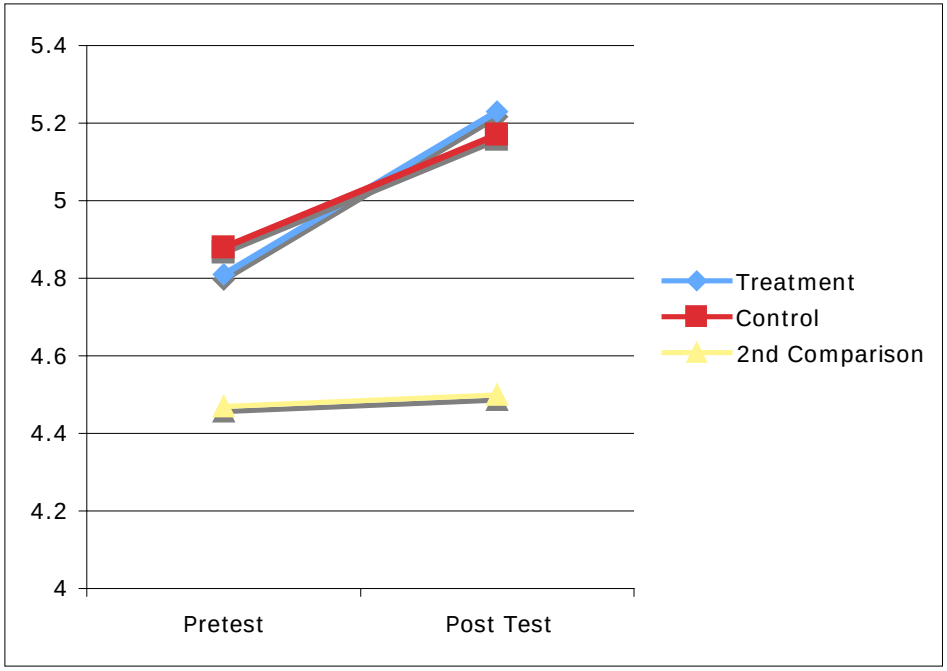


Cohen’s Guidelines

- .2 = Small effect
- .5 = Moderate effect
- .8 = Large effect

Instructional Self Efficacy Spring 2007

(Treatment: Seven 90 minute sessions w/simSchool)



Intern Stage (4th yr.) **Treatment Group** (Blue) with Simulator *Gained* (ES = .95)

Matched 'Control' Group (Red) w/o Simulator *Gained less* (ES = .40)

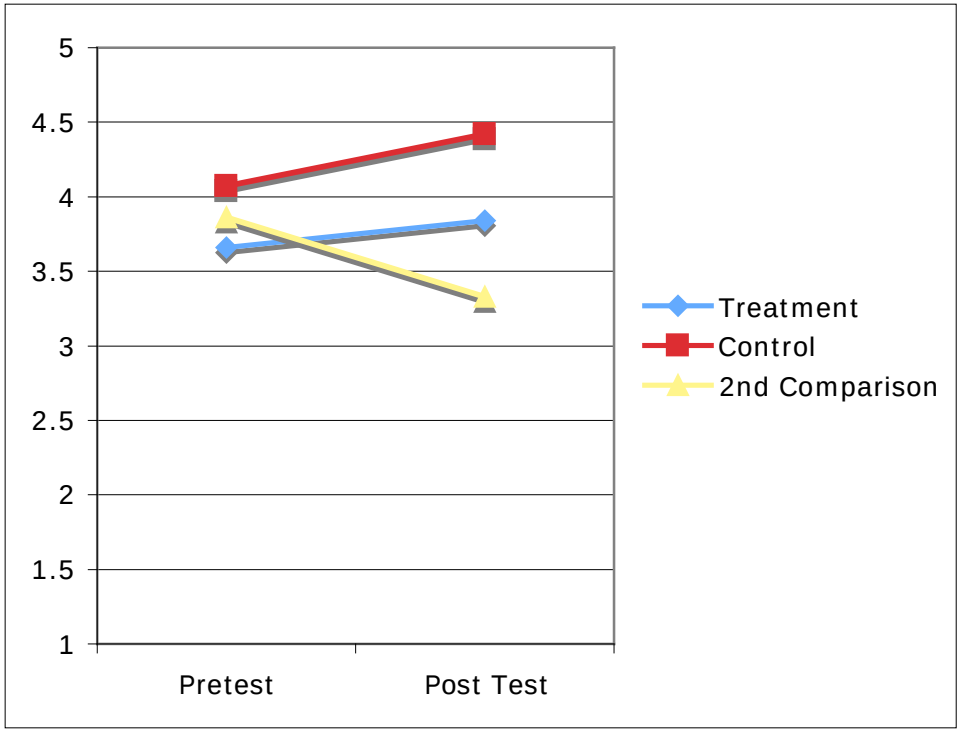
2nd Comp. Group (3rd yr.) *No Gain* (ES=.04)

	Treatment	Control	2nd Comp.
Pretest	4.81	4.88	4.47
Post Test	5.23	5.17	4.5
ES	0.95	0.4	0.04
Signif.	0.0005	.14 (NS)	.91 (NS)

Related to Perceptions of Simulations / Games for Learning?

- To what extent do you think computer games or simulations can be an important learning tool for K12 students?
  - 1. Not at all important
  - 2. A little important
  - 3. Somewhat important
  - 4. Important
  - 5. Very important

Perceptions of Simulations/Games for Learning (Spring 2007)



Conclusions

- Large gains by all on technology measures
- Large gains by treatment on instructional self efficacy
- No apparent gain in treatment group (vs. comparison) regarding belief that games and simulations can enhance teaching & learning
- Preservice candidates appear to learn from the system although they often feel they have not
- Learning through simulations of disabilities may be a more easily recognized skill set (future study)

For Additional Information Contact

- Rhonda Christensen
  - Rhonda.Christensen@gmail.com
- Gerald Knezek
  - Gknezek@gmail.com
- http://www.iittl.unt.edu/fipse