

SIMMENTORING

Simulation Enhanced Training for Inclusion Teachers

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SimSchool

- Future/new teachers can practice teaching in an inclusion classroom with a variety of divergent learners including students with disabilities.



SimSchool

- ❑ Synthesizes theoretical frameworks of:
 - instructional leadership
 - interpersonal psychology, and
 - behaviorist teaching models
- ❑ Provides a computer program which operates like a simulation game

SimSchool

- The player improves teaching strategies by:
 - analyzing student needs
 - making instructional decisions
 - evaluating the impact of teaching actions on students' learning



Research-Basis for SimSchool

- ❑ **simSchool-based mentoring** approach is based on current research findings across several fields (Ingersoll & Kralik, 2004; simSchool, 2006).
- ❑ Combines human mentoring support with hands-on practice using the simulator.
- ❑ Designed to **provide pre-service teachers** with a **safe environment** for experimenting and *practicing new techniques, especially methods of addressing different learning styles, and wide variations in academic and behavioral performance of students.*

Theory of OCEAN Model

- ❑ SimSchool based on **Five Factor Model of Personality** (McCrae & Costa)
 - Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism (OCEAN)
- ❑ The first public mention of Five Factor Model by **LL Thurstone** in his "address of the president before the American Psychological Association," Chicago meeting, September, **1933** (Wikipedia)

Learning Styles-VAK

- Provides easy and quick reference inventory by which to assess people's preferred learning styles, and then most importantly, to **design learning methods and experiences that match people's preferences**

Demonstration of simSchool

- <http://simschool.org>
 - Web-based, Dynamic Simulation
 - Choose Configuration, Make Run
 - Receive Feedback, Analyze Run



Sample Classroom Roster

Class roster

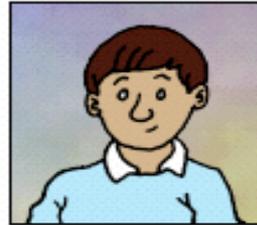
Alba, Yael



Alder, Mary



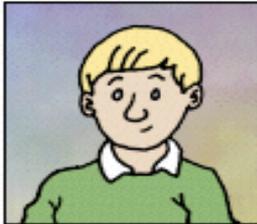
Alvarez, Xavier



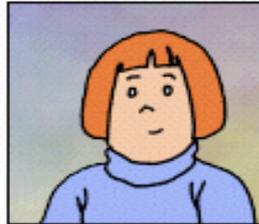
Amaya, Esmerelda



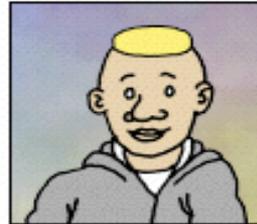
Amazo, Jay



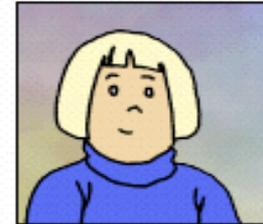
Ancheta, Lucia



Anderson, Lawrence



Armstrong, Katherine



Each student has a profile that helps the teacher to find the best assignments.

Selecting Settings for Simulation

ame Help

New Simulation | Saved Simulations | Preferences

Choose the settings for your new simulation.

Upgrade Now to receive enhanced access!

Launch a new simulation

Select Configuration

Use preset students | Use my custom students

Select Class Size

Individual | Small group | Full classroom

1 student | 5 students | 18 students

Select Academic Performance

Below grade level | At grade level | Above grade level

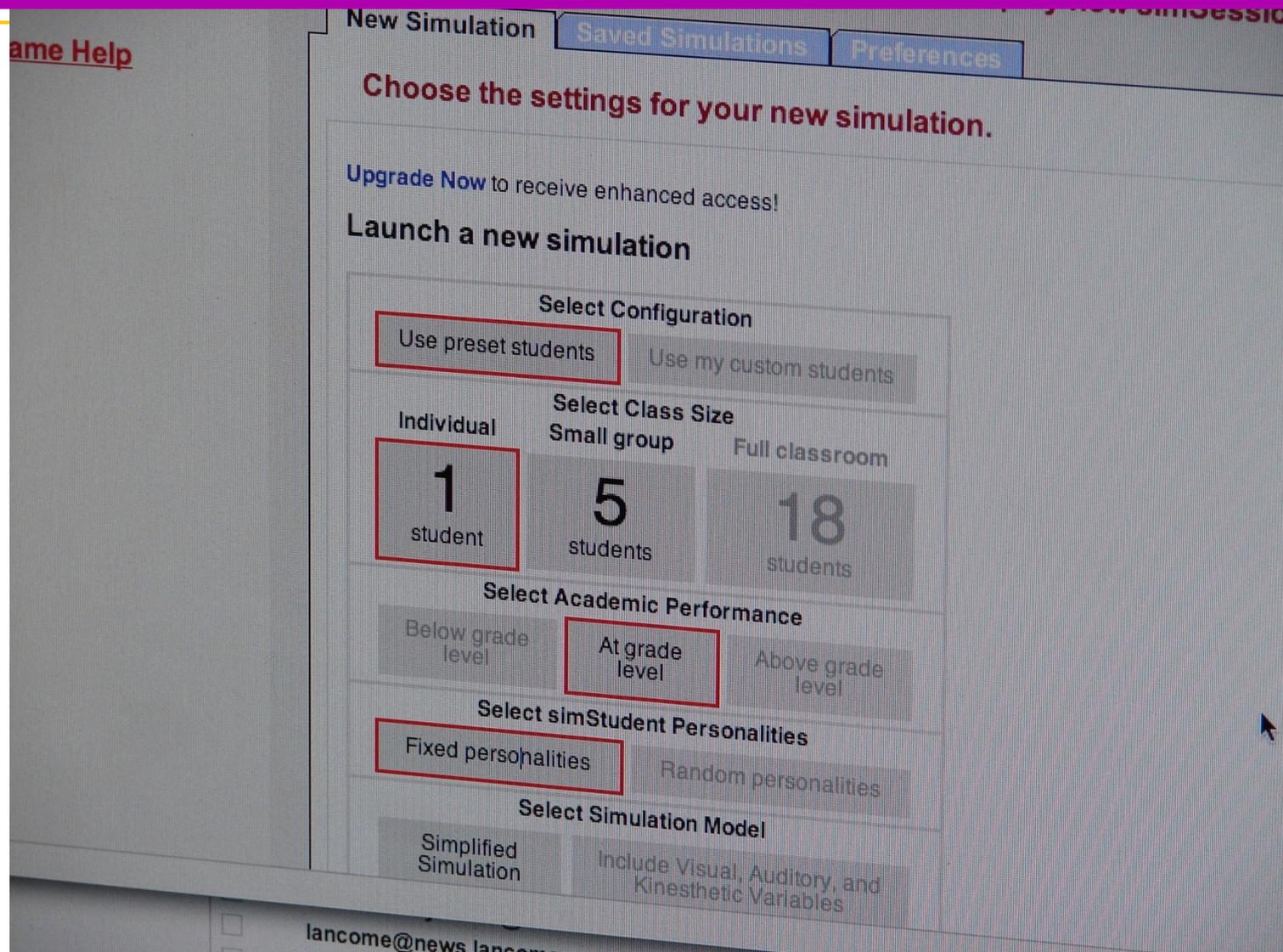
Select simStudent Personalities

Fixed personalities | Random personalities

Select Simulation Model

Simplified Simulation | Include Visual, Auditory, and Kinesthetic Variables

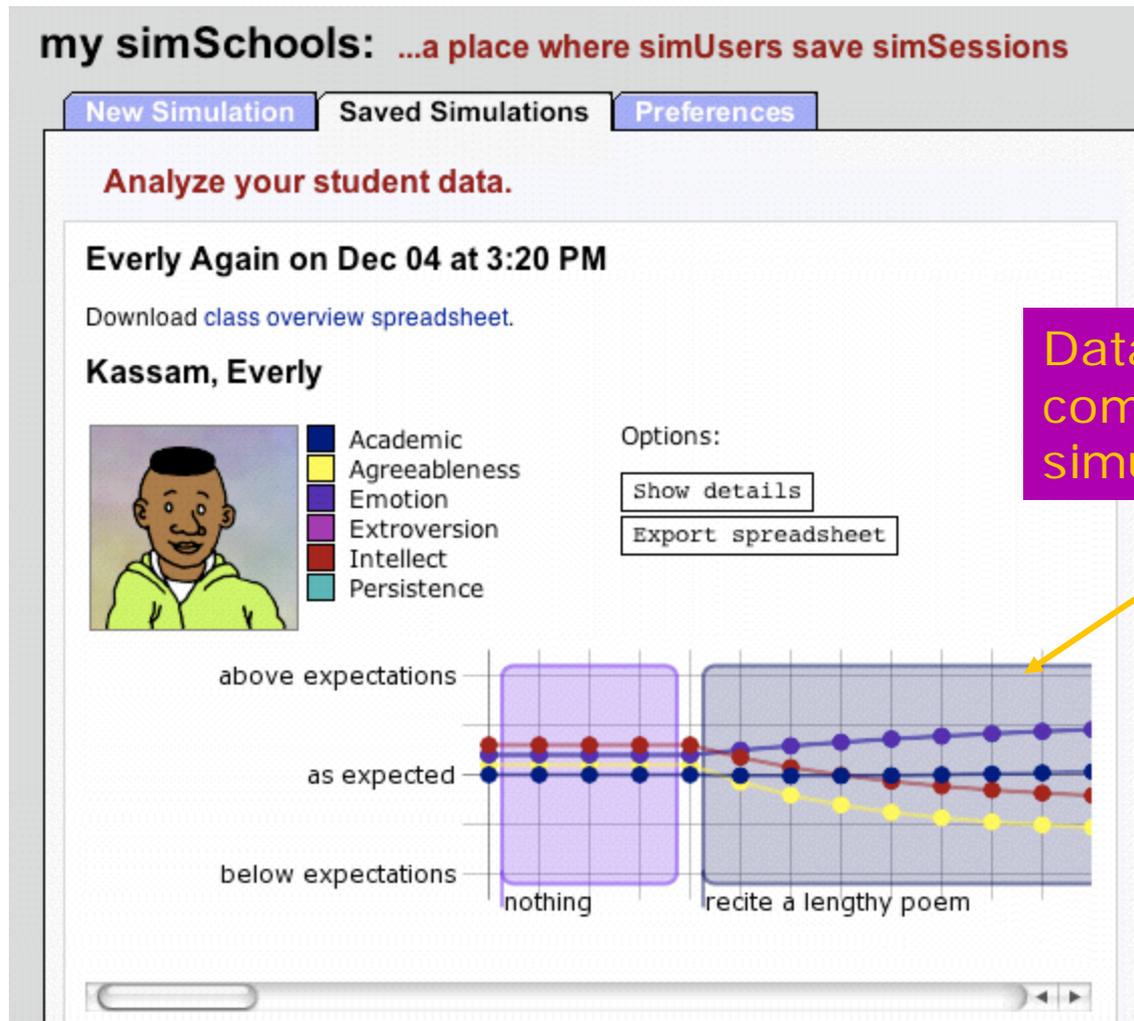
lancome@news.lancom



Sample Classroom in simSchool

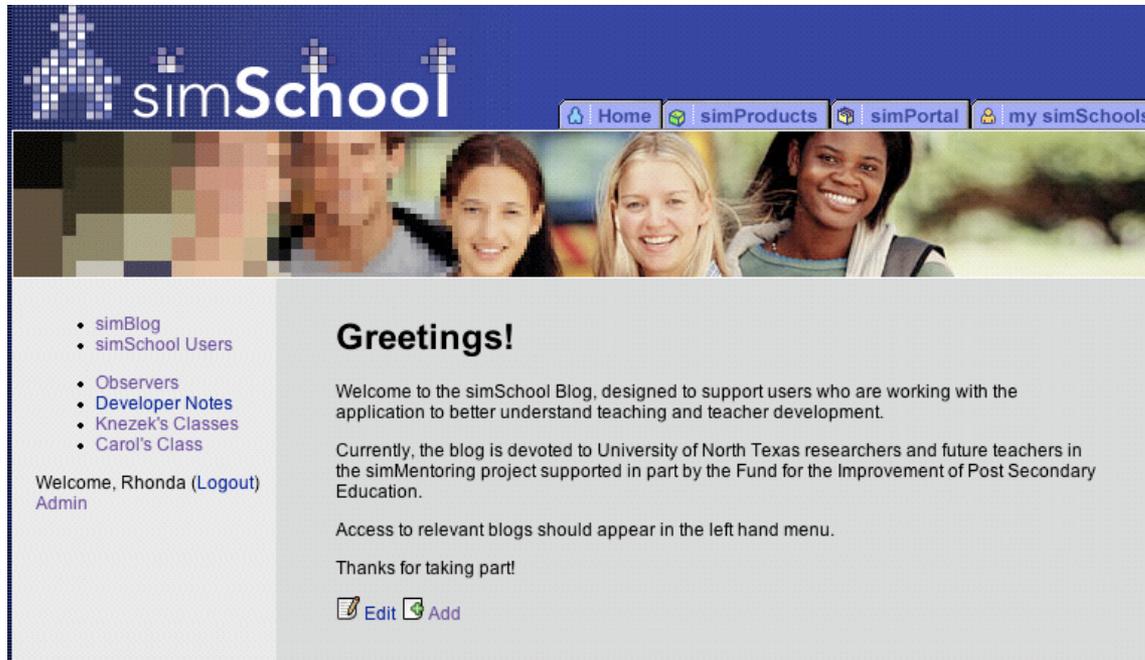


Sample of Student Data



BLOG

- ❑ To get reflections and feedback from students on the use of simSchool
- ❑ To get reflections and feedback from observers working with the students



The screenshot shows the homepage of the simSchool Blog. At the top, there is a blue header with the "simSchool" logo on the left and a navigation menu on the right containing links for "Home", "simProducts", "simPortal", and "my simSchools". Below the header is a banner image of four smiling young women. The main content area is divided into two columns. The left column contains a list of links: "simBlog", "simSchool Users", "Observers", "Developer Notes", "Knezek's Classes", and "Carol's Class". Below this list is a user greeting: "Welcome, Rhonda (Logout) Admin". The right column features a "Greetings!" section with a welcome message, a paragraph about the blog's focus on University of North Texas researchers and future teachers, and a note about relevant blog access. At the bottom of the right column are "Edit" and "Add" buttons.

simSchool

[Home](#) [simProducts](#) [simPortal](#) [my simSchools](#)

- [simBlog](#)
- [simSchool Users](#)
- [Observers](#)
- [Developer Notes](#)
- [Knezek's Classes](#)
- [Carol's Class](#)

Welcome, Rhonda ([Logout](#))
Admin

Greetings!

Welcome to the simSchool Blog, designed to support users who are working with the application to better understand teaching and teacher development.

Currently, the blog is devoted to University of North Texas researchers and future teachers in the simMentoring project supported in part by the Fund for the Improvement of Post Secondary Education.

Access to relevant blogs should appear in the left hand menu.

Thanks for taking part!

[Edit](#) [Add](#)

Future Teachers Working with SimSchool



Outcome Measures

- **Instrumentation:** Technology Measures (Ropp, Christensen & Knezek, Vandersall):
 - **TPSA:** Technology Proficiency Self Assessment
 - Email, WWW, Integrated Applications (IA), Teaching with Technology (TwT)
 - **CBAM LoU** (Level of Use)
 - **Stages of Adoption** of Technology
 - **ACOT** Teacher Stages
 - **Pedagogical** Style (ISE, LLC, Skill)

Outcomes-Data from UNT

- The area in which the **treatment group** of preservice teacher candidates **exhibited the largest gain** in comparison to the groups of their peers that did not receive simSchool access and training, was on items related to **instructional self-efficacy (ISE)**

Instrumentation: Teacher Preparation Survey (Vandersall, 2006)

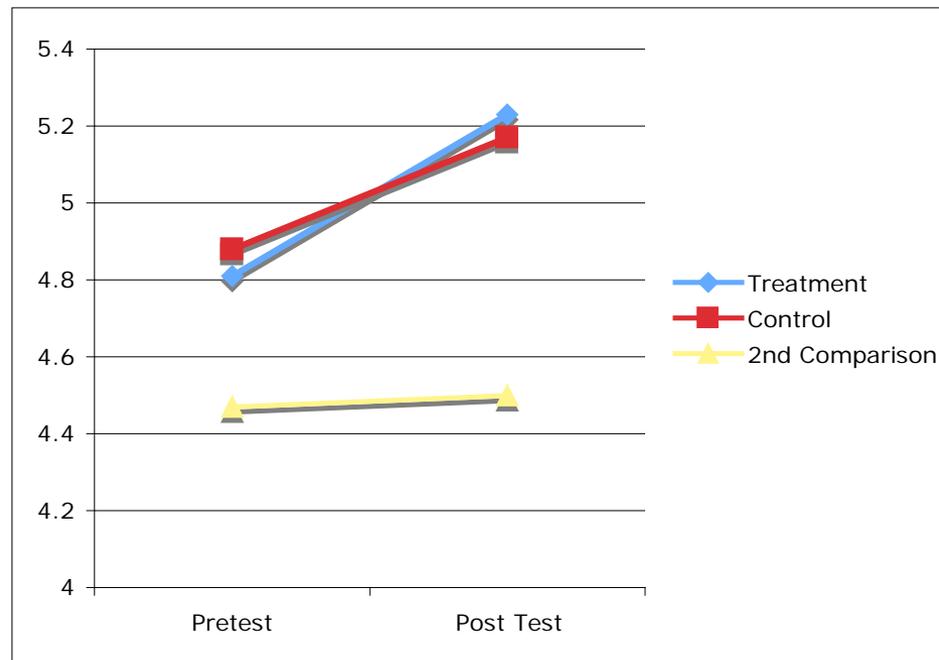
- Twenty-five items from two domains:
 - Perceptions of teaching (10 items)
 - Factor Analysis revealed 2 factors
 - Instructional Self-Efficacy (confidence can fix problems that arise)
 - Learning Locus of Control (teacher can influence or not)
 - Teaching skill (15 items)
 - Factor Analysis revealed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

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)

Project SETS (Simulation- Enhanced Training for Science Teachers)

Research sponsored by NSF 0726670

Project Goal

- Project SETS (Simulation-Enhanced Training for Science Teachers)
 - seeks to improve training for elementary level science teachers
 - using a simulated classroom (simSchool) as a laboratory experience.

Importance of Project

- ❑ **Legislation mandates** that school districts provide provide "**highly qualified**" **teachers** to work with students with disabilities.
- ❑ Currently, there is a critical **shortage** across the US of both **science and special education teachers**.
- ❑ New legislation makes it **critical for teachers** to have **knowledge of effective teaching practice for special needs learners** in addition to expertise in the field.

As We Continue to Work with SimSchool? We Seek to Make a Difference in Disabilities Education By:

- ❑ **Make the existing body of research on effective practices for achieving equity in science careers for individuals with disabilities available to a larger audience through simulation**
- ❑ To provide an effective tool to teacher training institutes to implement the research findings in ways **to positively impact the number of scientists with disabilities.**

Intervention

- ❑ Intervention is to use a web-based dynamic simulation of a classroom (simSchool) as additional clinical practice to provide future teachers with the opportunity to work with students with various types of disabilities.

Curriculum

- ❑ A unit on the "life of a pond" will be provided for teachers to access.
- ❑ Teachers will be provided with a variety of curriculum and technology options to determine how students with specific learning problems respond to various learning activities.

Year One

- ❑ Upgrade the programming options of the current simSchool platform so that students with various disabilities can be emulated to include: students with hearing impairments and learning disabilities.
- ❑ Develop the simSchool modules on "life of the pond."
- ❑ Develop test items and rubrics designed to measure novice teachers' knowledge of effective teaching practices for students with disabilities

Year One Achievements

- New sensory variables have been programmed into simSchool. These variables allow students to experience students with disabilities in the simulated environment.

First Year Experiences



Students learning about SimSchool.

Year Two

- ❑ 1. Test the simSchool model on a small group of 20 teachers
- ❑ 2. Obtain feedback on the model and make necessary changes.
- ❑ 3. Run reliability and validity checks on the instruments and make necessary changes

Three Inclusion Factors

- ❑ Factor 1. School Climate (for Inclusion) (Alpha = .75 with 7 items:)
 - ❑ 17R. Our school is not prepared to alter support systems for students as their needs change, and our services are limited.
 - ❑ 19. Children with disabilities are given as much of the school curriculum as they can master with appropriate modifications.
 - ❑ 16. The full participation of students with disabilities is actively encouraged in our school.
 - ❑ 13R. There is a lack of commitment for inclusionary programs in our schools.
 - ❑ 18. Parents of children with disabilities are fully a part of our school community.
 - ❑ 14. General education teachers and special education teachers collaborate to provide appropriate services to all students at our school.
 - ❑ 20R. Children with disabilities are not included in the same testing and evaluation experiences as their nondisabled peers.

Three Factors

- ❑ Factor 2. Benefits (of Inclusion) (Alpha = .70 with 3 items):
 - ❑ 4. Inclusion benefits all students
 - ❑ 2. Inclusion benefits all special education students.
 - ❑ 7. Without inclusionary programs, we are violating students' rights.

Three Factors

- ❑ Factor 3. Barriers (to Inclusion) (Alpha = .67 with 3 Items):
 - ❑ 6. Inclusion takes valuable instruction time.
 - ❑ 10. Schools do not have the resources necessary to implement inclusion programs.
 - ❑ 8. Inclusion is just a passing fad.

Year Three

- ❑ Implement the simSchool "life of a pond" unit into the state required pre-service special education class.
- ❑ Collect and analyze data on the effectiveness of the unit for training future science teachers to work with students with disabilities.
- ❑ Determine the validity of the model by comparing the behaviors within the simulated classroom to an actual inclusion classroom teaching the unit on the "life of a pond".

Outcomes

- ❑ Provide dissemination platforms to supply information to educators, administrators and other practitioners
- ❑ Develop and deliver a simulated training module which allows novice teachers to "practice effective teaching strategies prior to entrance into the field
- ❑ Promote, manage and support an online learning community
- ❑ Create and administer an online instrument which will identify indicators related to disability friendly learning environments.

Delineation of Issues from FIPSE Research

- ❑ 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

Measuring Effectiveness

- ❑ This project will use a nonequivalent comparison group quasi-experimental design.
- ❑ It will utilize current student participants in a course in special education required of all future teachers applying for certification in Texas.
- ❑ It is anticipated that three classes with a total of about 75 students will have access to the simSchool learning activities. The participating classes will be randomly selected.
- ❑ Three classes that are not selected for the study will serve as a contrast group.

Measures

- ❑ Scores received in simSchool
- ❑ Scores received on “Effective Inclusion Instrument”
- ❑ Student time-on-task
- ❑ Ultimately, successful teaching experiences of simSchool participants.
 - More strategies
 - Higher retention rate

Questions?



For Additional Information

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Or visit our webpage: <http://www.iittl.unt.edu/>

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