



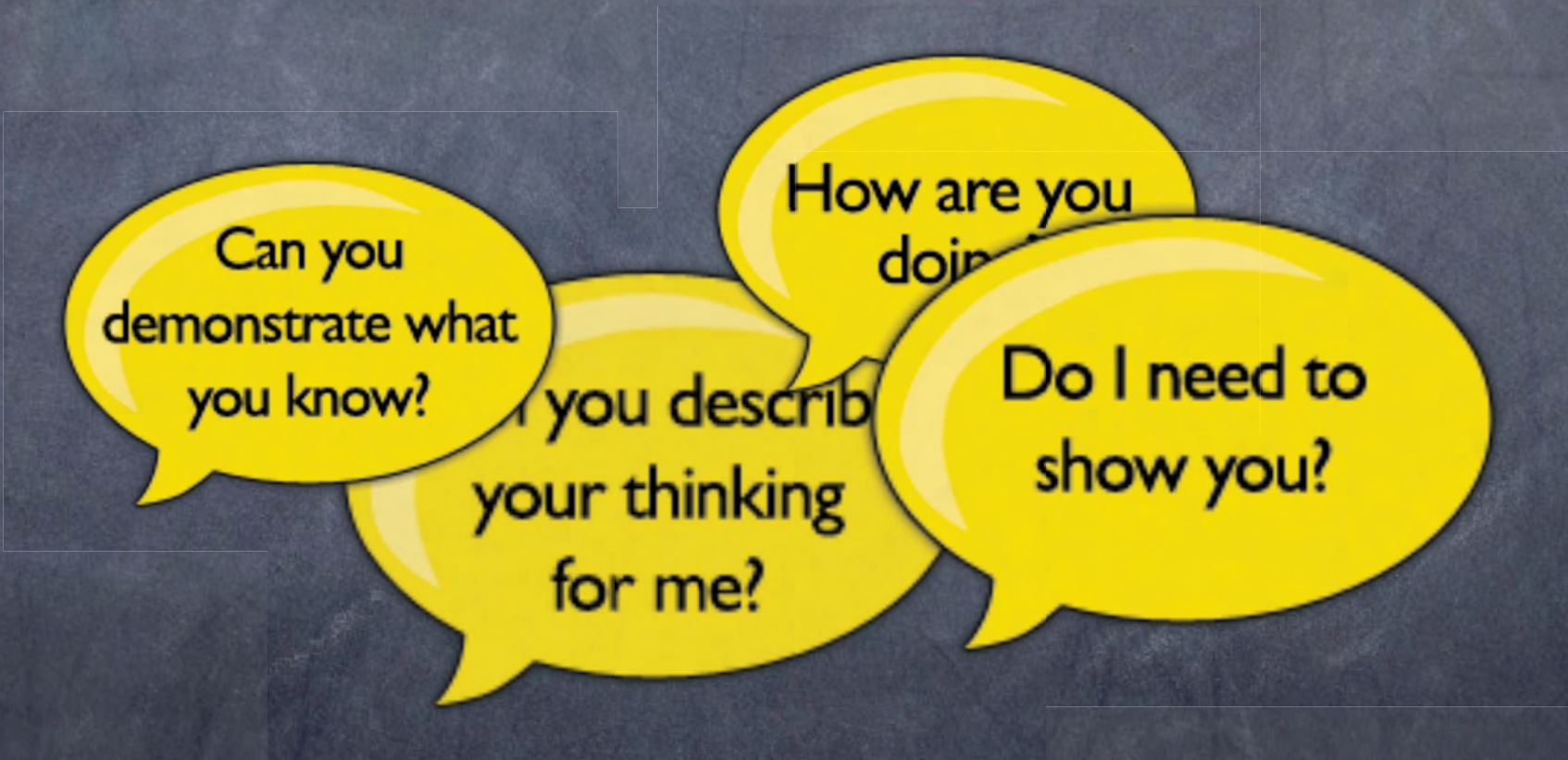
# An Introduction to simSchool

the Classroom Simulator for Educators



The Origins of simSchool

simSchool began seven years ago with a researchers asking complex questions...



Can you demonstrate what you know?

Can you describe your thinking for me?

How are you doing?

Do I need to show you?

Is it possible to learn to teach  
(or improve teaching skill)  
by using a simulation?

With seven years of R&D supported by grants from PT3, Vermont Institute of Technology, IES, and EDUCAUSE/Gates, the simSchool team has found through extensive, peer-reviewed research that the answer is “yes.”



# What does simSchool look like?



# What does simSchool look like?



device independent  
cross-platform compatible  
cloud-based

low bandwidth requirement  
live authoring & reporting



The Science of simSchool



The underlying intelligence algorithms of simSchool draw upon widely published theories of intelligence & emotional modeling to drive the behaviors of the simStudents.



Selected psychological, physical, cognitive and instructional models referenced to build the simSchool computation model of learning and agent psychology include:

- Cattell-Horn-Carroll Theory of Intelligence (incorporating Cattell-Horn Gf-Gc Theory and Carroll's Three-Stratum Theory)
- OCEAN model of Emotion (McCrae & Costa)
- Interpersonal Circumplex Theory
- standard models of language learning and language proficiency used to diagnose ELL students
- structural functional and social constructivist theories of learning

In total simSchool instills in each simStudent and simTask a position on a 21-pt range for each of 10 variables.

Leverage then dynamically adjusts these variables and can generate *10 trillion* different simStudent profiles.

# Research-validated outcomes of playing simSchool include:

- increased confidence in teaching
- increased technology self efficacy
- increased retention in education courses
- increased knowledge of instructional strategies
- increased knowledge of classroom management techniques



*initial outcomes...*

With only **90 minutes** of time spent in simSchool, research findings show a **change in attitude** about using games and sims in teaching



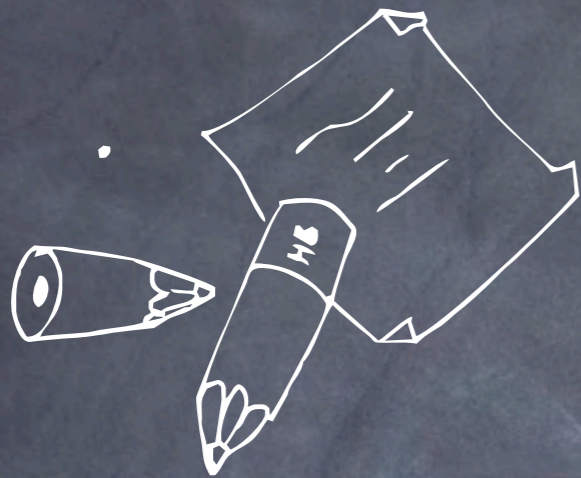
*deeper outcomes...*

With **4-6 hours of time** of spent in simSchool, research findings show an **increase** in general knowledge about classroom management, differentiating instruction, and confidence as a teacher.

*major outcomes...*

With 12 hrs of time spent in simSchool, users manifest a dramatic improvement in reported sense of control and power (*Locus of Control*)





*Spring 2012 research indicates...*

Using simSchool during pre-service education and training leads to **increased resiliency and retention** of teachers in the first 3 years of employment.



What users experience



simSchool provides users tools to construct virtual students and tasks that can be embedded in a virtual classroom.

The image displays three overlapping screenshots of the simCreator software interface. The central screenshot is a modal window titled "simCreator" with a gear icon and the text: "Design your own simulations, modules, and resources to run and share with others using a powerful modularized system." Below this is a red button labeled "simCreator".

The background screenshots show the following sections:

- Create a Student:** Includes dropdowns for gender (Female), race (African American), name (Artley, Tyshay), and laterality (Right Handed). It features a grid of student avatars and a list of personality traits (Academic, Language Proficiency, Affect, Openness, Conscientiousness, Extroversion, Agreeableness, Neuroticism, Physical, Visual, Auditory, Kinesthetic) with associated sliders and "randomize" buttons. "Cancel" and "Submit" buttons are at the bottom.
- Create a task:** Includes fields for "Task Category:", "Task name:", and "Description:". It also has "Difficulty" sliders for Academic, Language Proficiency, and Physical traits, along with "randomize" buttons.
- Simulation:** Shows a "5" in a blue box, a "20" in a grey box, and radio buttons for "Average" and "Mixed" grade levels. It includes "clear classroom settings" and "clear student settings" links, and "Exit without Saving" and "Next >" buttons at the bottom.

# Items users can author



**My Courses**



**Sim**



**Module**



**Student**



**Task**

Or, users can find objects in the Open Library, a repository of crowd-sourced knowledge and content shared within the simSchool community.

The screenshot shows the 'Open Library' interface. At the top, there are tabs for 'Modules', 'Simulations', 'Custom Students', 'Custom Tasks', and 'Resources'. Below the tabs is a search bar with the text 'Displaying results for search:' and a 'New Search' button. A list of items is displayed, including '100 Degrees in Denton and Rising', 'Creating and Assigning Tasks', 'Designing a Lesson Plan', 'Everly's Bad Day', 'Everly's Better Day', 'Improving a Lesson Plan', 'Introducing the 18 Student Classroom', and 'Introducing the Five Stud...'. A modal window titled 'Library' is overlaid on the interface, featuring a logo of four colored books and the text: 'Library Search through user-created simulations, modules, and resources to find suitable content or as a basis to inspire your own creations.' Below the text is a green button labeled 'Browse Library'. In the background, a table of simulation results is visible, showing columns for simulation name, author, date, and a 'Launch' button.

Simulation Name	Author	Date	Launch
Simulation 1	T Chis	11.20.11 1:41 pm	Launch
Level 2 Learners	T Backus	10.25.11 6:21 pm	Launch
Science Report	T Backus	11.22.11 10:39 pm	Launch



Cognitive	
[ randomize ]	
Academic	Low Neutral High
Language Proficiency	Low Medium High
Affective	
[ randomize ]	
Openness	Low Neutral High
Conscientiousness	Low Neutral High
Extroversion	Low Neutral High
Agreeableness	Low Neutral High
Neuroticism	Unstable Neutral Stable
Physical	
[ randomize ]	
Visual	Low Medium High
Auditory	Low Medium High
Kinesthetic	Low Medium High

To create a new student, users drag sliders that represent two cognitive attributes, five affective attributes, and three physical attributes.

These reflect the underlying intelligence of simSchool.

# Agno, Yuhua

## Personality profile

In relationships, Yuhua: *can be hyperactive, usually very assured, tends to dominate others, doesn't listen; is usually outgoing, easily makes friends, is a good mediator; is diligent about assignments, follows instructions, stays on task; may be inhibited, is usually mistrusting and passive; gets bored with task boundaries, has difficulty consolidating ideas, has a huge outpouring of ideas but sometimes does not listen to others.*

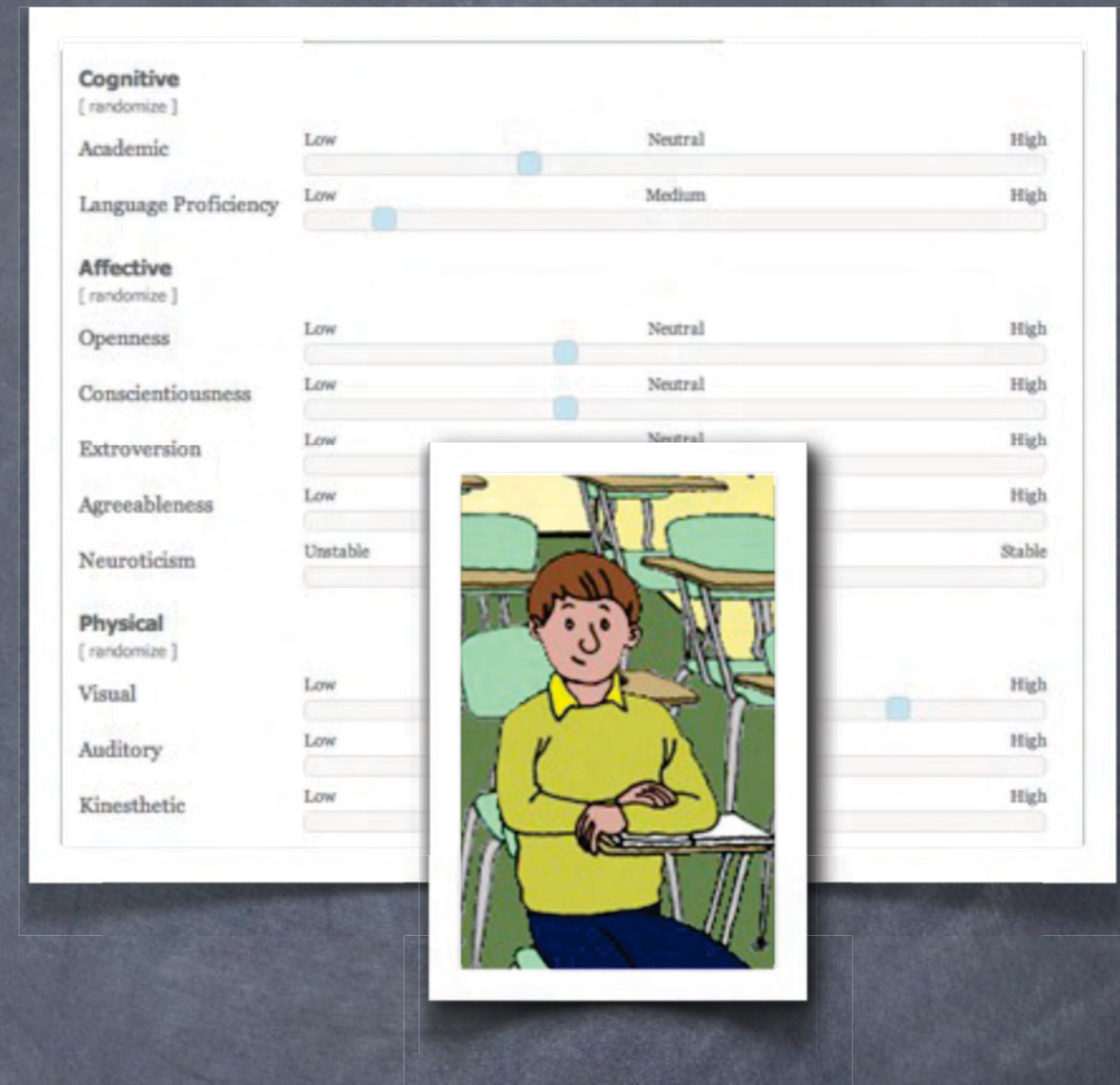
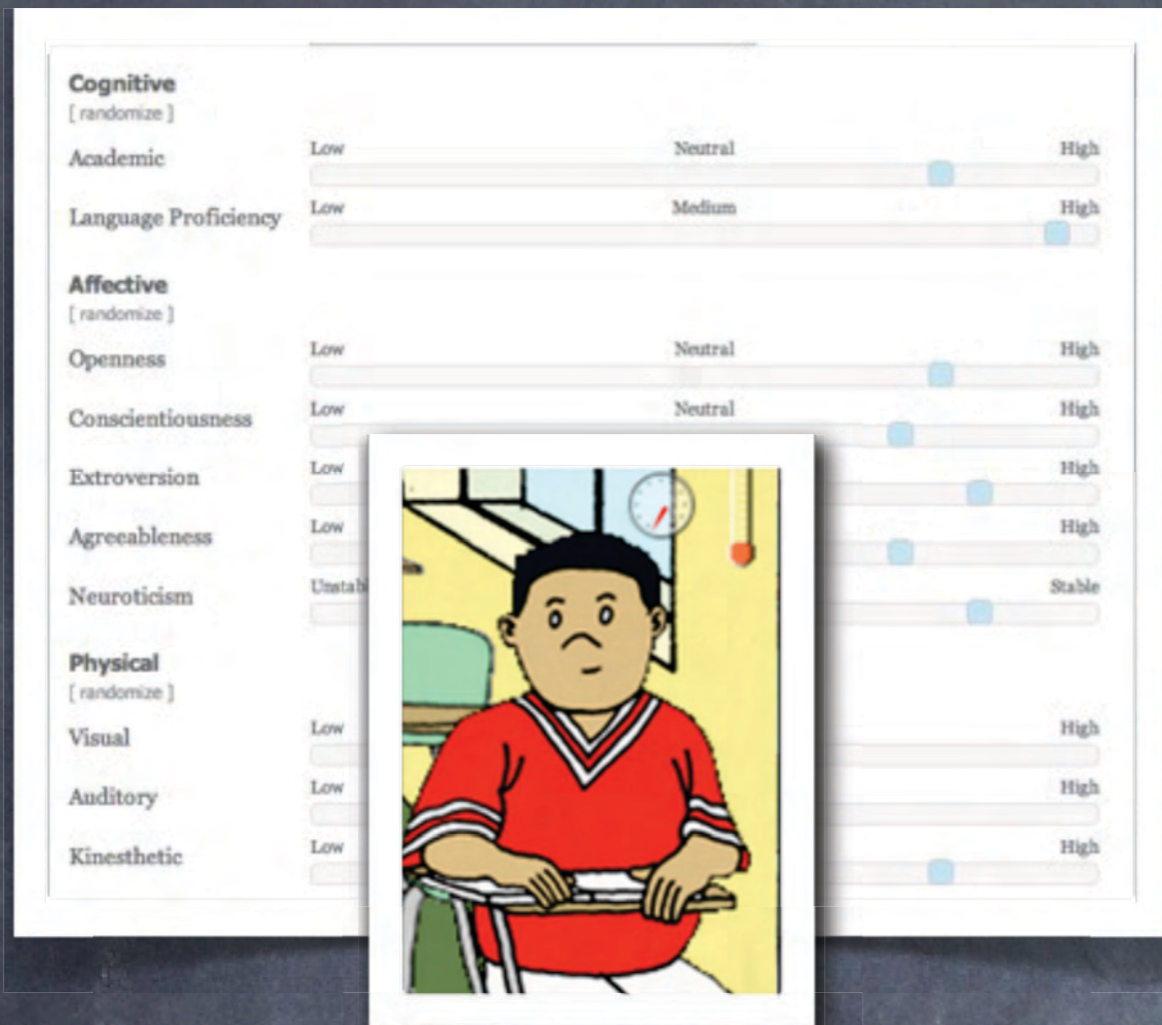
When approaching tasks, he: *needs a lot of feedback, interrupts others, acts out; analyzes well, is a logical, well-organized and objective thinker, values honesty; likes to plan and have structure, needs closure, completes every task, wants everything "to count" toward the grade; gets bored easily, skips over details or gets them wrong.*



## Academics

Reading	A-
Writing	A-
Listening	A-
Speaking	A-
Math	A
Technology	B+
PE	A-
Art	A-

simSchool then creates a “narrative” about the student – a unique story that provides clues about the student’s motivators, behavior, grades, and teacher perceptions.



By adjusting sliders in various ways, users can quickly and easily create students with dramatically different needs and performance abilities. Users can even “virtualize” students they know to gain insight and practice.



After selecting or creating a simClass, users “play,” acting as the classroom teacher, talking to students, assigning tasks, observing their behavior, and analyzing provided data.








Following completion of a simSession, users are provided extensive reports detailing the progress of their virtual students throughout the virtual class.

**Sim - UTAS Sample Class** Kruse, Stacy

Students Report Summary Report Circumplex Graph

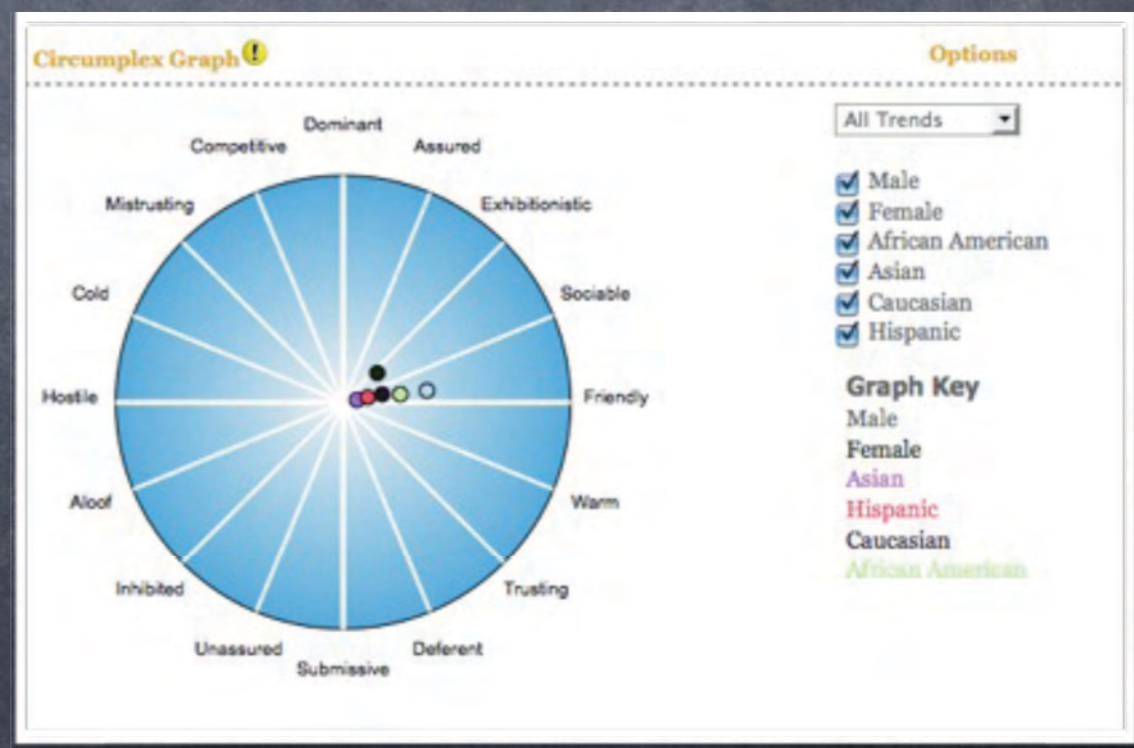
Choose the students whose reports you wish to view or compare.

<input type="checkbox"/>	 Lorenzana, Jose	<input type="checkbox"/>	 Ogunsola, Dominique	<input type="checkbox"/>	 Patel, Jennifer
<input type="checkbox"/>	 Payne, Destiny	<input type="checkbox"/>	 Smithy, Daequion		

**View Reports**



And users are given information on their own choices and tendencies, providing an opportunity for self-reflection.



# simSchool's Place in the World of Teacher Education



# K12 School Systems

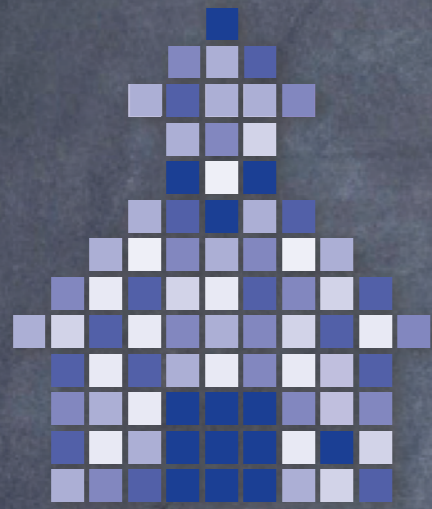
- as a tool for ongoing professional development
- as a low-stakes environment for practicing strategies for instructing special populations
- as a mentoring tool in teacher induction
- as a tool for administrative observation / training
- as an intervention training tool for teachers at risk due to poor student outcomes

# Higher Education

- as course content and activity for undergraduate instruction in education
- as a discussion and exploration environment for Masters-level students
- as a research sandbox for PhD work
- as a way to enhance on-line education programs and incorporate an “observation” component
- as professional development for TAs and adjuncts
- as a *direct substitute for physical field work* in the pursuit of certification
- as a possible solution for addressing accreditation agency requirements for field work (state and federal)

# What the next 6 months hold...

- Authoring of eBooks with simSchool embedded
- PD contracts with School Systems
- University course(s) based on simSchool
- “Certified” simSchool Instructors & Trainers
- Evaluation in Clinical Nursing & Counseling Programs
- Expansion across Europe
- Expansion into South America
- Expansion into West Africa
- Expansion into China
- Opportunities we haven't even thought of yet



simSchool

play ■ learn ■ share ■ teach

[www.simschool.org](http://www.simschool.org)