

Using simSchool to Enhance simEquity for Preservice and Inservice Teachers

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Abstract: Bias reduction in teaching practices is an important step in enabling students to achieve their best in the classroom and beyond. The simEquity project using the simSchool simulated teaching platform is focused on helping educators to recognize, reflect on and reduce implicit biases that may exist in their beliefs and teaching practices. The innovation playground session will introduce attendees to the project and allow them to experience the platform to see the possible impact the program can have in teacher education.

Introduction

A recently funded National Science Foundation (NSF) Research on Emerging Technologies for Teaching and Learning (RETTL) project is focused on helping teachers recognize, reflect on and reduce any implicit biases they may have that can impact their teaching. Bias reduction in teaching practices is a key foundation for enabling students to achieve their highest potential. The COVID-19 Pandemic has highlighted disparities in learning and emphasized the importance of socio-emotional stability for the long-term well-being of students and teachers. This innovative playground session will present a tool for teacher educators that can be used in any course to focus on biases that may exist.

Innovation

One way to identify evidence of these kinds of biases involves the use of a simulated teaching environment. SimSchool is a dynamic, online simulated program that allows preservice and inservice teachers the opportunity to practice teaching. SimSchool was designed to provide future and current teachers with a safe environment for experimenting and practicing techniques, especially methods of addressing different learning styles, and wide variations in academic and behavioral performance of students. Context appropriate recommendations for mitigating biases will provide teachers with the tools needed for effective non-biased instruction. Figure 1 illustrates the current complex capabilities of simSchool 2.0.

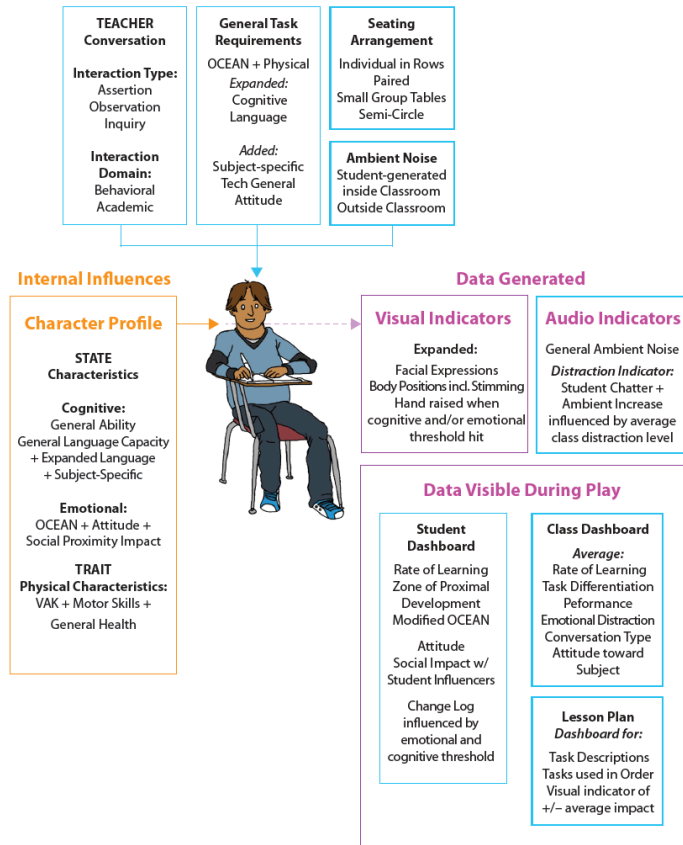


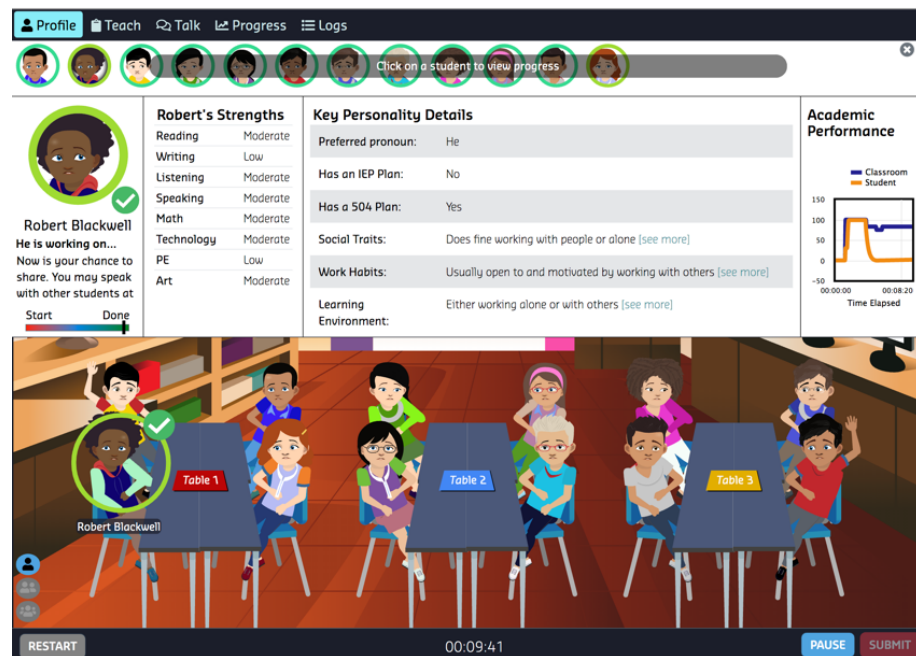
Figure 1. Model of individual learning characteristics in simSchool.

During the COVID-19 pandemic, many teacher education programs found it necessary to adapt their clinical experiences. Many programs adopted simSchool to allow their candidates the opportunity to experience clinical teaching in diverse classrooms when they were not allowed to go into real classrooms. Pre-service students were given then opportunity to experience more diverse environments than they would have in their normal in-person clinical experiences.

SimSchool promotes pedagogical expertise by re-creating the complexities of classroom decisions through mathematical representations of how people learn and what teachers do when teaching. From its inception, simSchool’s underlying artificial intelligence model was envisioned to include research-based psychological, sensory and cognitive domains similar to Bloom’s Taxonomy of Educational Objectives (Bloom, Mesia, & Krathwohl, 1964). The Five-Factor Model of psychology (McCrae & Costa, 1996) served as the foundation of the student personality spectrum. This model includes the characteristics of extroversion, agreeableness, persistence, emotional stability, and intellectual openness. A simplified sensory model component with auditory, visual and kinesthetic perceptual preferences comprises the physical domain. Together the physical, emotional and academic factors were demonstrated to represent salient elements of classroom teaching and learning (Christensen, Knezek, Tyler-Wood, & Gibson, 2011; Gibson, 2007).

A newly expanded and updated simSchool 2.0 provides a wide variety of options to be used across the teacher professional development curriculum including options to create new modules as well as use an existing library of modules that focus on teacher improvement in areas such as multicultural awareness, differentiated instruction, literacy and classroom management. As shown in Figure 1, simSchool users have options to review detailed student profiles before or during any session. Through the “Teach” button, users select which students to assign activities, either as individuals, groups, or as a whole class. The simSchool user can also make different types of comments through the “Talk” button in which they can encourage, redirect or discipline students. The “Progress” button allows the user to see how each student is performing in many dimensions including academics and emotions. The “Logs” button allows the user to see how the class and each individual student performed for each action the user selected including tasks and comments. These features provide a robust system that allows each user to “pause” the simulator to assess whether to make changes in the activities or comments. Users can also see the overall performance in the

simulator after it is complete. Users are able to reflect and make corrections prior to beginning another module with



the intention of improving their teaching performances.

Figure 2. SimSchool classroom highlighting student profiles.

Benefit to Participants

Participants will learn how they might consider including simSchool modules in their courses to enable experiences with diverse students. How does simSchool work? SimSchool promotes pedagogical expertise by re-creating the complexities of classroom decisions through mathematical representations of how people learn and what teachers do when teaching. Aspiring and current teachers are encouraged to interact with this cognitive model over several sessions spanning several weeks, with micro-teaching interactions lasting from 10 to 30 minutes; and attempt to negotiate the simulated classroom environment while adapting their teaching to the diversity of students they encounter.

A demonstration of simSchool and the features that allow teacher educators to assign modules will be part of the presentation. Participants will be a SITE trial account and taught how to navigate the program. Featured modules will be the ones that were designed to create classrooms that simulate different diverse settings. A sample of what has been completed in teacher education programs along with the research outcomes will be shared as well.

Current and recent events in the USA and worldwide have renewed discussions of biases that exist in our society at all levels. Education is often viewed as the great equalizer and teachers are the gatekeepers to this established avenue for encouraging students to reach their highest potentials. Teachers often do not realize they possess biases that are sometimes hidden from even themselves. simEquity is designed to aid in self-discovery and removal of subconscious biases that could have negative effects on student learning and perpetuation of existing biases into our society in the future.

References

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