Utilizing Virtual Environment (TeachLivE™) in the Teacher Education Program in UAE

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Abstract. The use of virtual environments and multimedia methods are now part of several educational preparation programs such as surgical medical programs, flight simulators, and military combat training situations. It is believed by researchers these technologies became a part of the educator preparation programs and meeting the needs of the new academic settings (Dieker, Hynes, Ludlow, & Whitten, 2012). TeachLivE™ is one of these virtual education simulation technologies, originally designed for teacher education simulation with student avatars.

TeachLivE™ is a mixed-reality teaching environment supporting teacher practice in Florida, USA and it is currently being implemented across more than forty campuses in the United States and growing to include multiple school districts and international partners. Each partner utilizes the TeachLivE™ in a unique manner depending on the needs of their students, teachers, professors, and community stakeholders.

In addition, TeachLivE™ is also implemented and used at Emirates College for Advanced Education (ECAE) in Abu Dhabi, UAE. Emirates College for Advanced Education is a teacher education college that graduates teachers who will teach math, science & English as a second language. All students at ECAE should practice all teaching activities prior to their graduation through the Practicum Program, which is their field experiences at schools. The TeachLivE™ Lab provides pre-service and in-service teachers the opportunity to learn new skills and to hone their practice without placing “real” students at risk during the learning process.

The Emirates College for Advanced Education implemented TeachLivE™ with some of the women pre-service teachers (who are the sample of this study) to practice classroom management activities and some pedagogical strategies prior to going to schools without the risk of being in real situations. The researchers trained them on using this technology. Then each one of the students in this sample practiced two sessions, each session took ten minutes, using TeachLivE™. The researchers also analyzed the perceptions of those students about TeachLivE™ and its benefits to the students. The results revealed all students in the sample welcomed this simulation technology and they expressed...
their positive perceptions towards using TeachLivE™ not only in classroom management, but also in pedagogical and content aspects.

**History of TeachLivE™**

The utilization of virtual environments and multimedia methods are now part of several educational preparation programs such as: surgical medical programs, flight simulators, and military combat training situations. It is believed by researchers these technologies became a part of the educator preparation programs and meeting the needs of the new academic settings (Dieker, Hynes, Ludlow, & Whitten, 2012). TeachLivE™ is one of these virtual education simulation technologies originally designed for teacher education simulation with student avatars.

TeachLivE™ is a mixed-reality teaching environment supporting teacher practice in classroom management, pedagogy and content. It was developed at the University of Central Florida, USA and it is currently being implemented across more than forty campuses in the United States and growing to include multiple school districts and international partners. Each partner utilizes the TeachLivE™ in a unique manner depending on the needs of their students, teachers, professors, and community stakeholders.

The research involving the use of avatars or other forms of human surrogates has them working remotely and can be utilized in situations which involve communication between the avatars and the teacher. The pre-service teacher would focus on a rehearsal of classroom management, the study of the methods and activities of teaching, and appropriate content delivery. The system which has been developed will assist those existing teachers and potential teachers to be able to learn new skills and delve deeper into skills they might have forgotten utilizing TeachLivE™ which stands for teaching and learning in a virtual environment. TeachLivE™ software enables the teacher to be set in a virtual classroom of students with each avatar acting as a typical student with each one having their own personality traits. Hughes (2014) stated each virtual student would have their own background story and include behaviors typical of a student in either the middle or high school.

**Literature Review**

The researchers found numerous studies which were conducted over recent years but only included the most up-to-date studies. Dawson’s (2016) study was to investigate the effectiveness in TeachLivE™ are in pre-service special education teachers’ delivery of error correction, to give specific praise, and praise in both the virtual and real classroom settings. Four pre-service special educators participated in this multifaceted baseline study across specific targets skills. The participants attended weekly TeachLivE™ sessions as a group then they participated in three short segments of teaching which was followed by a structured feedback. The participants’ proficiency in the specific targets skills were analyzed on their three weekly assessments. This was followed by an assessment of the participants’ proficiency in all skills including those which had not been assessed yet and were measured immediately following the TeachLivE™ comprehensive assessment. The final phase of the assessment was a submission of a weekly video recording in a real classroom where the teachers assessed their students at the end of the week.

Dawson (2016) found repeated practice and feedback in the TeachLivE™
setting promoted the participants’ mastery of the specific targets skills. All four of the participants were proficient in error correction, specific praise, and praise for both the TeachLivE™ training assessment tool, and the more complex TeachLivE™ comprehensive assessment the participants also revealed a strong pattern of generalized performance in a typical classroom setting. One month after the intervention was stopped participants continued to maintain proficiency with a majority of the target skills in both the TeachLivE™ setting and the regular classroom. The findings of the study found the effectiveness of the interleaved practice in TeachLivE™ and how generalization and maintenance could be affected by the degree of alignment in the real and virtual settings.

In another study, (Wong, Odom, Hume, Cox, Fettig, Kucharczyk, Shultz, et al., 2013), the results showed teachers are expected to educate a group of students with a wide variety of academic needs. Teacher preparation programs should provide learning opportunities for them to become an expert in data-based decision making and proficient in utilizing research-based interventions to improve students’ end results. Research has shown teachers’ fidelity of implementation when using interventions is affected by a number of items including: professional development, coaching support, interactive communication, use of technology, and interacting with a virtual community of learners (Odom, Boyd, Hall, & Hume, 2010).

The TLE (teaching and learning environment) TeachLivE™ virtual classroom is an appropriate platform for professional development for teachers. The avatars represent a typical classroom of students. In this setting, the pre-service teachers have the opportunity to learn without any adverse effects on “real” students, receive personalized learning, and time for reflection and improvement (Dieker, Rodriguez, Lignugaris/Kraft, Hynes, & Hughes, 2014).

**Procedure**

TeachLivE™ is being implemented and used at Emirates College for Advanced Education (ECAE) in Abu Dhabi, UAE. ECAE is a teacher education college that graduates teachers who will teach math, science, and English as a second language. All students at ECAE should practice all teaching activities prior to their graduation through the practicum program, which is field experience in the schools. This is important because the TeachLivE™ Lab provides pre-service and in-service teachers the opportunity to learn new skills and hone in on their practice without placing “real” students at risk during the learning process.

The goal of this study was to determine the women pre-service students’ perceptions of TeachLivE™, how classroom management was impacted, and have them reflect on their experience while using the TeachLivE™ program. The sample size of this study was eight students who were trained to effectively utilize TeachLivE™.

Women pre-service students practiced classroom management activities and some pedagogical strategies prior to going to the schools without the risk of being in “real” situations. The researchers trained the students in the sample study on using the TeachLivE™ technology. Then each one of the students in the sample practiced two sessions, each session took ten minutes, using TeachLivE™. The researchers also analyzed the written perceptions of those students about TeachLivE™ and its benefits to the individual student.
Results and Discussion

The major themes revealed in this study are the following:
1. A great experience and exciting.
2. Gained confidence in teaching.
3. Issues with the virtual students’ behavior – classroom management.
4. Learned innovative ideas how to improve classroom management through the researchers’ assistance.
5. There is concern with the use of the English language by the avatars which is not the pre-service teachers’ native language.
6. Wanting to repeat the session.

The results revealed all students in this sample welcomed the simulation technology and they expressed their positive perceptions towards using TeachLivE™ not only in their classroom management, but also in pedagogical and content aspects. The main concern was classroom management which was reviewed by the researchers within the virtual classroom. The researchers spoke to the avatars to teach the students how to control the distinctive styles of their students.

Correlation to This Study’s Results with Recent Research

Dieker, Hynes, Hughes, Hardin, & Becht (2015) revealed a plethora of ways TeachLivE™ was being utilized in teacher education. The types included: mathematics content, language arts content, science content, social studies content, classroom management strategies, teacher-student relationships, teacher behaviors, students with autism, teaching students with other disabilities, English language learners, parent-teacher conferences, and other areas including: instructional strategies, universal design for learning strategies, error correction and scaffolding, high level questioning, discreet trial teaching cycle, and direct instruction teaching cycle. The top three which had the highest percentage of usage were: classroom management 55%, teacher behaviors 63%, and the last one was 55% which was under the umbrella of other areas which are listed above in this paragraph. The results of Dieker, Hynes, Hughes, Hardin, & Becht (2015) study support the findings of this study in three types: Classroom Management Strategies, Teacher-Student Relations, and Teacher Behavior.

References


