Ludic Learning: Exploration of TLE TeachLivE™ and Effective Teacher Training

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ABSTRACT

New and emerging technology in the field of virtual environments has permitted a certain malleability of learning milieus. These emerging environments allow learning and transfer through interactions that have been intentionally designed to be pleasurable experiences. TLE TeachLivE™ is just such an emerging environment that engages teachers in practice on pedagogical and content aspects of teaching in a simulator. The sense of presence, engagement, and ludus of TLE TeachLivE™ are derived from the compelling Mixed Reality that includes components of off-the shelf and emerging technologies. Some of the noted features that have been identified relevant to the ludic nature of TeachLivE include the flow, fidelity, unpredicability, suspension of disbelief, social presence, and gamelike elements. This article explores TLE TeachLivE™ in terms of the ludology, paideic user experience, the source of the ludus, and outcomes of the ludic nature of the experience.

Keywords: Engagement, Fidelity, Ludic Simulation, Mixed Reality, Serious Games, Suspension of Disbelief, Teacher Education, Virtual Environment

EXPLORATION OF TLE TEACHLIVE™ AND LUDIC LEARNING

Educators, philanthropists, and policymakers have been making pleas for more efficient and effective teacher education and feedback (Buche, Querrec, De Loor, & Chevaillier, 2004; Foundation, 2010; Hawkins & Heflin, 2011). Claims have been made across multiple domains that simulation and virtual environments can enable teachers to practice pedagogy in controlled settings before practicing on children (Loureiro & Bettencourt, 2011; Merchant, 2010; Stanford, 2011). The ludic nature of avatar-based simulation invites analysis of how ludic learning works and the outcomes of using avatars to prepare for actual human interaction. Ongoing research in

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the use of a classroom simulator includes the constructs of immersion, presence, suspension of disbelief, and engagement (Dieker, Hynes, Hughes, & Smith, 2008). The TLE TeachLivE™ technology allows the virtual classroom to be populated with students who represent a range of ages, cultures, backgrounds, abilities and behaviors, enabling teachers to practice with students that reflect their target population. The position of this paper is that the synergy of immersion, presence, suspension of disbelief, and engagement culminate to generate a ludic experience in the Mixed Reality classroom simulator, TLE TeachLivE™.

**Simulation in Education**

Simulation is widely accepted and funded as a preferred approach to acquiring, abstracting, and automatizing skills, techniques, and practices needed in high stakes scenarios (Aldrich, 2009; Dotger, Dotger, & Maher, 2010). The use of simulators is quite common in fields such as aviation, military (i.e. live, virtual, and constructivist) and medicine. Simulators provide an alternative, safe field experience environment for teacher preparation candidates in need of practice teaching (Dieker et al., 2008). Simulated environments, stemming from non-technology based simulated practicum models (Dotger et al., 2010; Dotger, Harris, & Hansel, 2008) provide an opportunity for preservice teachers to “experience an artificial model of reality by observing and/or teaching virtual teachers and students in a simulated classroom” (Hixon & So, 2009, p. 295). Simulations allow individuals to have repeated trials involving high stakes situations without risk of loss of valuable resources (e.g. money, time, and people) and varying levels of simulators are currently being used in teacher preparation (e.g., Dieker et al., 2008; McPherson, Tyler-Wood, McEnturff, & Peak, 2011). The capacity for a simulation to be an effective learning approach in these scenarios is based largely on the ability of the simulation to represent the targeted scenarios in a manner that allows the transference of learning to real time practice (Bailenson, 2006; Lapkin & Levetti-Jones, 2011; Laschinger et al., 2008).

The potential is growing for computer mediated simulation developers to maximize the plasticity of environments through new interface designs (Clarke, Dede, & Dieterle, 2008; Slattery, 2008). The malleability of these systems changes the user’s experience of simulation while enabling learning across domains and transfer to increase. Not only do these emerging simulators leverage the potential for learning, but they are also designed to be pleasurable experiences, which increase the likelihood of use. This discourse will explore the ludic nature of a Mixed Reality classroom simulator, TLE TeachLivE™, in which pre-service and practicing teachers are given opportunities for guided practice of pedagogy. The authors will explore the reported pleasurable experience, the origins of the paideic nature, and projected benefits for teachers honing their skills on virtual students.

TLE TeachLivE™ is a simulated classroom experience that allows pre-service and practicing teachers to encounter a class of five virtual student avatars. The virtual students are controlled by a trained human in the loop, so the system allows users to interface in a realistic way with virtual students who act, talk, and respond like real students in a typical school classroom. This allows teachers and teacher candidates to cogently practice both content and pedagogy. The plasticity of the system also allows for one-on-one practice in communication with administrators, peer teachers, and parents when the student avatars are replaced with an adult avatar. In the current paradigm for teacher training, outside of the TLE TeachLivE™ environment, a new teacher receive limited supervision from practicing teacher, and more often new teachers are in charge of their own classroom unsupervised (National Council for Accreditation of Teacher, 2010). The reality of novice teachers and teacher candidates practicing their newly developed skill set on such a vulnerable population (i.e., young people) revealed an area in which the fields of education and simulation could address as partners. Simulation experts are in the business of protecting assets by training practitioners in simulators. The goal of TLE TeachLivE™ is to protect children by
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