4th Annual

teach live

Conference

JUNE 1-3, 2016

Virtual Human Interactive Performance

(VHIP)

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FORWARD

The UCF TeachLivETM team is very appreciative of the willingness of researchers from across the country to share their experiences and expertise with the system at the 4th Annual TeachLivE Conference: Virtual Human Interaction Performance. We are always eager to show conference participants the new TeachLivETM developments that are ongoing at UCF. The questions posed in sessions and the vision and application of the array of researchers and colleagues in the field using TeachLivE is what has and continues to guide the direction of our new developments. For that we say thank you! We also are appreciative for the continuing partnerships that have emerged with researchers and institutions over the past four years, and we look forward to many future years together in this space.

This conference was the held in the transition year for TeachLivETM funding. The Bill & Melinda Gates Foundation funding came to an end just prior to the conference. We want to acknowledge the wonderful stewardship received from our program officers during the funding period: Andrea Foggy-Paxton, Amy Slamp, and Kai Kung. Their guidance and counsel helped us develop TeachLivETM to a higher level, and they gave us great advice on the structure of the conferences and to build ongoing and lifelong partnerships for our work.

A special thank you goes out to UCF Doctoral Candidate, Taylor Bousfield, for her tireless efforts at organizing this year’s conference. Through her efforts we have added a preconference event that provides conference participants a “deeper dive” into the technology, scenario development and research topics. Taylor was supported in her efforts by many doctoral students including: Angelica Fulchini, Matthew Taylor, Claire Donehower, Faith Ezekiel-Wilder, Celestial Wills-Jackson, and Benjamin Gallegos.

Planning has begun for the 2017 conference. Mark your calendars for June 7-9, 2017. Watch for a conference paper proposal announcement soon. We look forward to seeing everyone at UCF!!

Lisa A. Dieker
Charles E. Hughes
Michael C. Hynes
Mixed Reality Experienced in the M.Ed. Educational Leadership Program: Student Perceptions of Practice and Coaching through TeachLivETM
Hilary Buckridge
University of Central Florida

The M. Ed. in Educational Leadership program at the University of Central Florida began incorporating the mixed reality technology of TeachLivETM during the fall semester of 2013 as an experiential practice for students to rehearse administrative conference situations in a low risk environment. The use of avatars and virtual teaching provides authentic practice through rehearsal, where mistakes are not impacting real people, and through feedback, coaching and reflective practice, educators sharpen communication skills (Dieker, L., Straub, C., Hughes, C., Hynes, M., & Hardin, S., 2014). Feedback and coaching from this realistic practice is intended to increase students’ awareness of performance and improve conferencing skills prior to the required program administrative internship. By including this mixed reality experience as part of the M.Ed. program, the students benefit from the power of the sequencing of instruction through guided and independent practice models, using realistic scenarios and simulation practice of administrative conferencing (Taylor, 2010). Specifically, the study analyzed the use of mixed reality virtual practice with immediate coaching and feedback in the preparation of educational leadership masters’ level students before they engaged in real communications with parents and teachers in an administrative capacity.

Research questions addressed in this study are: (a) To what extent, if any, do Educational Leadership M. Ed. students believe the TeachLivETM parent conference and teacher post observation conference simulation experiences to be helpful in developing their communications skills with parents and teachers?, (b) To what extent, if at all, do Educational Leadership M. Ed. students believe the TeachLivETM coaching feedback was helpful in developing their communications skills with parents and teachers?, (c) To what extent do student reflections of the TeachLivETM experience indicate it is beneficial in increasing skill in communicating with parents and teachers immediately following the mixed reality simulation?, and (d) To what extent do Educational Leadership M. Ed. students perceive the TeachLivETM experience to be beneficial in influencing leadership behaviors as they relate to communication with parents and teachers at the end of the second semester administrative internship?

Scenarios were written depicting real conferencing situations, reviewed in advance by the interactor (the human who directs the avatars) and the students in preparation for the simulation. For each of the two experiences, parent conferencing and teacher post observation conferencing, participants received immediate coaching and feedback intended to shape behavior through performance observation, guidance, as well as to provide recommendations for specific practice.

Quantitative and qualitative data were collected documenting students’ perceptions of the value of the TeachLivETM experience and the coaching feedback as it relates to the preparation for administrative conferencing. Reflections assigned by course instructors after the experience were analyzed for categories and themes. Participants included Educational Leadership M.Ed. students registered in specific face-to-face required program courses from the fall semester 2013 through spring semester 2015. The mixed reality experience is imbedded into this existing coursework as a practice opportunity, with scenario development supporting specific communication and conferencing skills found in the curriculum of the targeted courses. Students received an orientation to the TeachLivETM experience during class, explaining the procedures for the 30-minute simulation. During the simulation, each student received up to 10 minutes of
TeachLivE<sup>TM</sup> interaction time, and five minutes of coaching. Each participant had the opportunity to observe his or her partner’s session. Students completed a perception survey directly after the simulation experience. In addition, after completion of the administrative internship and practice, M. Ed. Educational Leadership students completed a program exit survey in which three items related to TeachLivE<sup>TM</sup> were provided for participant response. Data was gathered from the fall semester of 2013 through spring semester 2015 with teacher post observation conference (n = 71) and a parent conference (n = 70). The five-question Likert scaled perception survey was completed immediately following the simulation. The rating scale for each construct contained values from one to five, with five indicating strongly agreed. Analysis of data reveals participants responses were highly rated in all areas indicating that both the parent conference and the teacher conference experiences are helpful in preparing them for administrative conferencing and improving their communication.

The literature review and the results of this study support the premise that to prepare aspiring school administrators for communication and conferencing involves more than theoretical knowledge. Educational Leadership M.Ed. students must be provided realistic practice opportunities coupled with coaching and feedback to shape behaviors in administrative conferencing (Hattie, 2009). The results of the study found students’ responses were highly rated in all areas indicating that students perceived both experiences to be helpful in preparing them for administrative conferencing and improving their communication skills.

Data represented 141 respondents. Findings indicated that Educational Leadership M. Ed. students believe the parent conference and teacher post observation conference virtual rehearsals with feedback to be helpful in developing their communications skills with parents and teachers. On a 5-point Likert-type scale, the mean score the perception of the coaching and feedback being helpful (97.2% agreed or strongly agreed), for the parent conference participants was 4.86 and the mean for the teacher feedback for participants was 4.76. In relation the extent to which Educational Leadership M. Ed. students believe the mixed reality simulation should continue in the program (97.2% agreed or strongly agreed), the mean score for the parent conference participants was 4.84 and the mean for the teacher post-observation conference participants was 4.39.

Qualitative data were analyzed by counting each comment of the 55 reflection documents to generate 132 unique data points. The researcher arranged responses into the following categories; (a) retelling of the experience, (b) general or specific comment on the simulation experience, (c) general or specific comment on the coaching and feedback, (d) general or specific comment on participant personal performance. Of the comments 14 (10.6%) were categorized as a retelling of the simulation experience, without reflection. General comments (n = 83) were most frequent at 62.8 percent and personal performance during the simulation (n = 65) being most frequent category content at 49.2 percent. The researcher further analyzed and disaggregated the comment categories and identified themes with regards to the generality or specificity of the comments.

Disaggregation of each general virtual rehearsal comment category was further evaluated for additional detail generating themes that the simulation was beneficial (53.8%), realistic (23.1%), and valuable (23.1%). All general comments provided regarding the simulation were favorable, which was consistent with the Likert scaled survey items.

Disaggregation of each general feedback comment category was evaluated for addition detail, resulting in themes regarding the feedback immediately following the simulation as
focused on clear communication (62.5%), confidence in conferencing (25%), and the importance of having critical conversations (12.5%).

Disaggregation of each general personal performance comment category was evaluated for addition detail, and the themes generated were: the simulation as focused on the importance of planning (41.3%), the need to be clear in communication (34.8%), increasing confidence while conferencing (17.4%), and being professional during conferences (6.5%). Results of the study recommended the continued inclusion of the mixed reality virtual practice as a means to provide authentic conferencing skills practice to educational leadership students. The findings and conclusions of this research study could be useful to any educational leadership certification program by providing practice that contains both accuracy of content and complex realistic practice. The state statutory and board rule requirements for provide coaching and mentoring as part of educational leadership programs supports the continued quest for realistic practice for maximization of feedback and coaching to shape behaviors prior to entering the administrative internship.

References


Rees Dawson, M., & Lignugaris-Kraft, B. (2013, May). *TeachLivE™ vs. role-play: Comparative effects on special educators’ acquisition of basic teaching skills*. Presentation at the 1st National TeachLivE™ Conference, Orlando, FL.

Building Workplace Communication for Individuals with Intellectual Disabilities Using TeachLivE™
Caitlyn A. Bukaty
University of Central Florida/ Cornell University

Abstract

People with disabilities, including those with intellectual disabilities (ID) do not achieve employment outcomes comparable to people without disabilities (Bureau of Labor Statistics, U.S. Department of Labor, 2015; Newman et al., 2011). Individuals with ID may experience deficits in job-related skills, including communication and social problem-solving (Livermore & Goodman, 2009). For this study the researcher developed an intervention using peer mentorship in the TeachLivE™ environment to improve workplace problem-solving communication. After reviewing the background research, procedures, results, and implications the author will discuss limitations of the study and directions for future research.

Proceedings

The Workforce Innovation and Opportunity Act (WIOA; 2014) is the most recent piece of federal legislation addressing workforce development. One focus of WIOA is access to employment opportunities and employment training for people with disabilities. As indicated by data from the U.S. Department of Labor (DOL) people with disabilities within the traditional age range for employment (16 – 64 years of age) are employed at a rate of 26%, compared to 72% for people without disabilities (Bureau of Labor Statistics, U.S. DOL, 2015). Employment rates are also low for people with intellectual disabilities (ID; Newman et al., 2011). Another mandate of WIOA requires that to the greatest extent possible individuals with disabilities must work in inclusive settings earning minimum wage or more. This mandate contrasts the sheltered workshop model that has been used for many years to employ individuals with ID in group settings with peers with ID for less than minimum wage.

Lack of opportunity for inclusive employment may not be the only barrier to inclusive employment outcomes faced by individuals with ID. Members of this population may also lack job-related skills, including deficits in communication and social problem solving (Livermore & Goodman, 2009). Social problem-solving is a social skill, which is one component of adaptive behavior, a realm of skills specifically noted as an area of difficulty for people with ID within the definition of ID (Schalock et al., 2010). Social interaction skills related to employment are integral to successful employment outcomes for people with learning disabilities (Johnson, Mellard, & Lancaster, 2007). This may also hold true for individuals with ID.

Background

Efforts to increase social skills may lead to improved educational and employment outcomes for SWDs (Test, Fowler, White, Richter, & Walker, 2009). Current literature includes multiple examples of interventions to help young adults with ID build problem-solving communication (e.g., Cote et al., 2010; Gear, Bobzien, Judge, & Raver, 2011; Hoppe, 2004; Hughes et al., 2011). However, there is a paucity of large n research around workplace problem-solving for individuals with ID. In fact there is limited research on social interactions for young
adults or around transition-related topics, and also little instruction designed to build these skills (Carter, Sisco, Chung, & Stanton-Chapman, 2010). Although effective social communication skills are valued within the workplace, they are not regularly taught or reinforced in these settings (Alber, Heward, & Hippler, 1999). In order for individuals with ID to become successfully productive members of society alternative techniques to develop workplace communication skills are needed (Elias & Clabby, 1992; Gear et al., 2011).

Peer Interaction

Peer interactions increase learning and build relationships, improving quality of life for individuals with ID (Carter et al., 2010). Using a peer as a trainer and natural support for individuals with disabilities is common in workplace settings (Chadsey & Beyer, 2001; Chadsey, Shelden, Horn, Bardeleben, & Cimera, 1999; Rusch, Wilson, & Hughes, 1994). Incorporating peers in his way may improve the effectiveness of social interaction interventions (Ginsburg-Block, Rohrbeck, & Fantuzzo, 2006). Despite evidence for partnering individuals with disabilities with peer trainers to develop social skills, no studies have been conducted using peer interaction to improve social problem-solving for individuals with ID (Hughes et al., 2012).

Role Play

Role play, when a situation is described to someone and he or she is asked to act out, or describe a response (Bielecki & Swender, 2004), is another intervention to increase problem-solving communication. Role play incorporates direct modeling and provides opportunities for appropriate social interactions, which may build social competence for individuals with ID (Shepherd, 2009). It is one of the most common tools for measuring social skills in individuals with ID (Bielecki & Swender, 2004). Also, role play related to workplace situations can help individuals learn social behaviors (Foy, Massey, Duer, Ross, & Wooten, 1979).

Virtual Reality

As technology continually evolves interest in applying new technologies to supporting learning for people with ID has increased (den Brok & Sterkenburg, 2015). An early example of applying technology to support learning for individuals with disabilities was the use of assistive technology, such as augmentative alternative communication devices to help students with disabilities communicate in the classroom (Edyburn, 2013). The focus of technology use to support learning for individuals with disabilities is broadening, from assistive technology to a wide range of instructional technologies (Edyburn, 2013). One application of technology for learning that has been considered for individuals with ID is virtual reality (VR). The interactive and adaptable nature of VR may support learning for individuals with ID (den Brok & Sterkenburg, 2015). In VR environments individuals with disabilities can practice communication and rehearse social scenarios (Cobb, 2007). Individuals with ID may have success learning social and career skills through VR (Standen & Brown, 2005).

One VR environment that may be valuable for building social skills for individuals with ID is the TeachLive™ mixed-reality virtual classroom (TLE). Developed at the University of Central Florida (UCF), TLE was created to provide practice opportunities for pre-service teachers (Dieker, Hynes, Hughes, & Smith, 2008). Virtual avatars in the TLE environment...
display established personalities, characteristics and behaviors, but interactions are personalized by incorporating a human element (Dieker et al., 2008). Use of TLE technology has been shown to positively shape behavior in a way that transfers to real-life setting in as little as four 10-minute sessions (Straub, Dieker, Hynes, & Hughes, 2014). Beyond teacher preparation TLE technology has been explored with children (Bukaty, 2014) and individuals with ID (Walker, Vasquez, & Wienke, 2016). Individuals with disabilities may experience reduced social barriers when communicating with an avatar compared to communicating with peers (Stendal, Balandin, & Molka-Danielsen, 2011).

Innovative Facilitation of Requisite Skills for Employment (In-FORCE) was a workplace problem-solving communication intervention developed by the researcher and tested in this study. In-FORCE is a synthesis of (a) social communication (Foley et al., 2013; Hughes et al., 2012); (b) peer interaction (Carter et al., 2010; Hughes et al., 2011, 2012; Mautz, Storey, & Certo, 2001; Nentimp & Cole, 1992); (c) role play (Cote et al., 2010; Gear et al., 2011; Shepherd, 2009); and (d) virtual reality-based learning (den Brok & Sterkenburg, 2015; Passig, 2009; Standen & Brown, 2005; Tam et al., 2005), all areas where more research around applications for individuals with ID is needed.

Participants engaged in problem-solving role play in a mixed reality environment. The problem scenarios used to drive the role-play in the In-FORCE intervention were developed based on a social skills curriculum created by the DOL (n.d.). Twenty scenarios were created and validated by a group of six experts. Each scenario was made into a video featuring a narrator describing the problem and an adult virtual avatar, in the role of the supervisor, stating the problem from a supervisor perspective. Treatment group participants met with the virtual peer avatar, C.J., about four different problem scenarios. Changes in problem-solving skills were measured using the researcher-created In-FORCE Problem Solving Checklist during pre-test and post-test meetings for all participants, in both the treatment and control groups with a virtual supervisor avatar, Ms. Adkins. Both avatars are pictured in Figure 1.

<table>
<thead>
<tr>
<th>Supervisor Avatar “Ms. Adkins”</th>
<th>Peer Avatar “C.J.”</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Avatar Ms. Adkins]</td>
<td>![Avatar C.J.]</td>
</tr>
</tbody>
</table>

Figure 1: Virtual Avatars from In-FORCE Training
Methods

To measure the effectiveness of the In-FORCE Workplace Problem-Solving Intervention, the researcher conducted a group design study addressing the following research questions: RQ1: To what extent do In-FORCE problem-solving intervention sessions increase the abilities of young adults with ID to implement verbal workplace problem-solving skills, as measured by the rate of independently achieved objectives in a problem-solving checklist based on standards from the U.S. Department of Labor (DOL) Secretary’s Commission on Achieving Necessary Skills (SCANS; 1991)? RQ2: To what extent do In-FORCE problem-solving intervention sessions increase the abilities of young adults with ID to implement nonverbal workplace problem-solving skills, as measured by the rate of independently achieved objectives in a problem-solving checklist based on standards from the U.S. DOL SCANS (1991)?

Participants

Inclusionary criteria for participants were defined as: (1) a classification of ID and (2) age 16 or older. Potential participants were excluded if they had: (1) a dual diagnosis of another educational disability (e.g., autism) or (2) previously participated in research activities in the TLE environment. A total of 42 participants completed study. This sample was 23% above the recommendation generated when the researcher completed an a priori power analysis using G*Power 3.1. Participants ranged in age from 16 to 65, however two participants did not disclose their ages. There were 19 male participants and 23 female participants.

Settings

Individuals with ID were recruited for this study from three district groups: (1) young adults with ID attending a weekend college and career readiness program on a college campus in partnership with an organization for people with ID (n = 9), (2) individuals participating in adult day programming at a human services organization for people with ID (n = 26), and (3) high school students with ID in a self-contained class focused on preparing students with ID for employment outcomes following high school (n = 7). Participants from each group engaged in research activities at the site from which they were recruited. Participants engaged in pretests, posttests, and the intervention via a laptop computer with a speaker, external microphone, web access, and equipped to support TLE. The computer was located in a private room with minimal outside noise. The participant and the researcher were present in the intervention room. Video and audio from all avatar interactions was recorded.

Research Design

The effects of the In-FORCE intervention were examined using an experimental group design with a pre-post measure (Gall, Gall, & Borg, 2007). This was an experimental study as participants were randomly assigned to either the treatment or the control group using a matching procedure (Gall et al., 2007). Following the consent process participants completed the Transition Assessment and Goal Generator, Student Version (TAGG-S; Martin, Hennessey, & McConnell, 2015). The categorical composite score of this transition assessment was used to match participants into pairs, of which one member was randomly assigned to the treatment group, and one to the control group using a coin flip. An equal number of participants were
initially assigned to each group. Random assignment allowed for the assessment of pre-post achievement of each group as well as comparisons between the groups.

Procedures

All participants in both groups participated in a training session, including: (1) welcome and introduction to the concepts of role play and virtual avatars, (2) meet-and-greet session with an avatar, and (3) viewing of a sample problem scenario, not used in the pre-test, post-test, or intervention sessions. The meet-and-greet portion of the training session served to ensure that all participants were able to successfully interact with a virtual avatar.

All participants completed a pretest problem-solving interaction with Ms. Adkins, the virtual supervisor avatar, following training. For the pretest, all participants discussed Scenario 5. All participants in both groups completed a posttest problem-solving interaction with Ms. Adkins, discussing Scenario 3. Pretest and posttest interactions followed a dialogue guide to ensure consistency and the opportunity for each participant to meet each problem-solving objective. Each interaction lasted five minutes or less. The researcher completed the In-FORCE Problem-Solving Objective Checklist during each pretest and posttest interaction; 30% of the interactions were evaluated by an additional trained observer to ensure reliability of the ratings, agreement was greater than 90%. Fidelity of pre-test and post-test sessions was greater than 95%. All participants completed a perception survey following the posttest in which they were asked to answer dichotomous questions about their experiences interacting with Ms. Adkins.

Participants in the treatment group received the intervention. All participants in this group completed four 5-minute problem-solving interactions with C.J., the virtual peer avatar. The first interaction with C.J. was preceded by a brief introduction to the C.J. avatar. During each intervention interaction, each participant discussed the same randomly selected problem scenario, Scenarios 7, 6, 16, and 16, respectively were used. Each interaction with C.J. followed a dialogue guide to ensure consistency, and provided each participant with the opportunity to practice each problem-solving objective. Intervention interactions included coaching from the peer avatar. Fidelity of intervention sessions was greater than 95%. The perception survey taken by participants in the treatment group included additional questions about participants’ experiences interacting with C.J. Research activities and data collection points are shown in Figure 2.
Results

To analyze the data informing RQ1 and RQ2 the researcher used a repeated-measures ANOVA with one factor between. The same analysis was used to measure changes in overall problem-solving. These results, changes in mean, and effect sizes are included in Table 1. Positive changes in mean verbal and non-verbal problem-solving scores were observed for the treatment group between the pretest and posttest, however the results were not statistically significant. Because the analyses did not show significance and low effect sizes were noted, these results must be interpreted with caution.

Table 1

<table>
<thead>
<tr>
<th>Session</th>
<th>Participants</th>
<th>Data Collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training</td>
<td>T/C</td>
<td>Training Checklist</td>
</tr>
<tr>
<td>Pre-Test (Scenario 5)</td>
<td>T/C</td>
<td>Problem-Solving Checklist</td>
</tr>
<tr>
<td>Intervention 1 (Scenario 7)</td>
<td>T</td>
<td>--</td>
</tr>
<tr>
<td>Intervention 2 (Scenario 6)</td>
<td>T</td>
<td>--</td>
</tr>
<tr>
<td>Intervention 3 (Scenario 19)</td>
<td>T</td>
<td>--</td>
</tr>
<tr>
<td>Intervention 4 (Scenario 16)</td>
<td>T</td>
<td>--</td>
</tr>
<tr>
<td>Post-Test (Scenario 3)</td>
<td>T/C</td>
<td>Problem-Solving Checklist, Perception Survey</td>
</tr>
</tbody>
</table>

Figure 2. In-FORCE Data Collection and Intervention Schedule.
Means and Repeated Measures ANOVA Results

<table>
<thead>
<tr>
<th></th>
<th>Pretest</th>
<th>Posttest</th>
<th>$p$</th>
<th>Partial Eta$^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Verbal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5 possible points)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment ($n = 20$)</td>
<td>3.15</td>
<td>3.45</td>
<td>.134</td>
<td>.055</td>
</tr>
<tr>
<td>Control ($n = 22$)</td>
<td>3.00</td>
<td>2.28</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Nonverbal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5 possible points)</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Treatment</td>
<td>4.75</td>
<td>4.85</td>
<td>.617</td>
<td>.006</td>
</tr>
<tr>
<td>Control</td>
<td>4.55</td>
<td>4.73</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td></td>
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<tr>
<td>(10 possible points)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Treatment</td>
<td>7.90</td>
<td>8.30</td>
<td>.248</td>
<td>.033</td>
</tr>
<tr>
<td>Control</td>
<td>7.55</td>
<td>7.55</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Discussion**

The results of the study showed positive, but not statistically significant changes following the implementation of the In-FORCE intervention. The researcher noted high achievement in nonverbal problem solving in the pretest for both the treatment ($M = 4.75$ out of 5) and control ($M = 4.55$ out of 5) groups which may have contributed to the negligible changes that occurred in this area. Research procedures were carried out with high fidelity to test the effectiveness of the in-FORCE intervention and raters reached agreement.

Based on the perceptions survey conducted following for posttest participants’ perceptions of the reality and usefulness of the intervention were positive, which may have implications for revised applications of the intervention in the future. These results are depicted in Table 2.
Table 2
Results of Perception of In-FORCE Training Survey

<table>
<thead>
<tr>
<th>Question</th>
<th>Treatment Group</th>
<th>Control Group</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
</tr>
<tr>
<td></td>
<td>(n = 20)</td>
<td>(n = 22)</td>
<td>(n = 42)</td>
</tr>
</tbody>
</table>

**Supervisor Avatar**

1. Did Ms. Adkins look like a real boss?  
   - Yes: 15 (75)  
   - No: 5 (25)  
2. Did Ms. Adkins talk like a real boss?  
   - Yes: 18 (90)  
   - No: 2 (10)  
3. When you met with Ms. Adkins did you feel like you were meeting with a real boss?  
   - Yes: 17 (85)  
   - No: 3 (15)  
4. Do you think working with Ms. Adkins helped you become a better problem solver?  
   - Yes: 20 (100)  
   - No: 0 (0)  
5. Do you think working with Ms. Adkins helped you get ready for a job?  
   - Yes: 19 (95)  
   - No: 1 (5)  

**Peer Avatar**

6. Did CJ look like a real friend?  
   - Yes: 16 (80)*  
   - No: 3 (15)*  
7. Did CJ talk like a real friend?  
   - Yes: 16 (80)*  
   - No: 3 (15)*  
8. When you met with CJ did you feel like you were meeting with a real friend?  
   - Yes: 17 (85)*  
   - No: 2 (10)*  
9. Do you think working with CJ helped you become a better problem solver?  
   - Yes: 19 (95)  
   - No: 1 (5)  
10. Do you think working with CJ helped you get ready for a job?  
    - Yes: 17 (85)*  
    - No: 1 (5)*

* one or more responses were left blank or were invalid.

Most participants were eager to interact with the virtual avatars, based on the researcher’s observations. Participants who were apprehensive about their first interactions gained confidence in subsequent interactions. Parents, guardians, and staff reported multiple cases of participants looking forward to subsequent research sessions and considering approaches for future problem scenarios, which may be a possible explanation for the positive changes in problem-solving scores.

**Limitations**

One potential reason for the lack of statistical significance is the variability within the population of people with ID. The use of three distinct research settings increased the naturally occurring variability. Deficits may exist in the sensitivity of the problem-solving checklist and the specificity of the problem-solving objectives, making statistical significance more difficult to detect. Another consideration may be the low number of intervention sessions conducted in this study (four 5-minute sessions, for 20 minutes total intervention time); it may be possible with a low dosage for this population the intervention did have an effect, but it was not readily detectable by statistical standards.

Due to the possibility of an undetected positive (i.e., Type II Error) the use of exploratory confidence should be considered. Exploratory confidence is the use of a lower threshold for
declaring significance (i.e., alpha = .20; Sauro, 2015). Using an alpha level of .20 would have revealed significant change in verbal problem-solving for the treatment group ($p = .136$).

**Future Research**

Several considerations for future research emerged as a result of this study. Revisions to the checklist instrument should be considered. In addition to being a researcher-created item, it is possible that the checklist used in this study was not sensitive enough to detect discrete changes in participant behavior. A more sensitive version, or more sensitive instrument entirely may be a worthy consideration. Additional time, or additional intervention sessions should be considered and may vary based upon the individual to lead to more measurable results. Also, although group design is widely accepted as the standard for building and evidence the variable nature of individuals with ID may indicate the use of single-case research. In alignment with this suggestion some type of follow-up, possibly in the form of a probe to explore maintenance of the skills may lend insight to the findings.

More conclusive results may be found if similar research is focused on a more specific skill set and target behaviors. The need for improved problem-solving skills in individuals with ID has been established in the literature, but specific fields or vocations and skills needed for these should be considered. More informative results may be obtainable through work with a group of individuals with career aspirations or experiences within a specific field, to which interventions could be customized. Furthermore, this specificity may allow for targeted follow up to examine long-term employment outcomes.

**Conclusions**

Employment outcomes, problem-solving, and other social communication skills continue to be a targeted outcome for many people including those with ID. These initiatives are strengthened by federal legislation such as WIOA, with goals of competitive, inclusive employment outcomes for individuals with disabilities. Research around these topics is needed to construct an evidence base for strategies to build the social and communication skills necessary for individuals with ID to achieve employment outcomes. Although the results of this study did not reveal the significance necessary to contribute to such an evidence base at this time the anecdotal and social validity findings associated with this research, and surrounding the incorporated technology were positive and warrant additional consideration. The DOL (n.d.) asserted that soft skills for employment, including communication and problem solving, need to be practiced and reinforced regularly. This supports the claim that consideration of interventions to build these skills must continue to be explored.

**References**


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**Let’s get Real: Perceptions of Presence and Measures of Social Validity within TeachLivE Simulation Sessions or "I hate this Kid!"

Heather Walker, University at Buffalo
Sharon Raimondi, University at Buffalo and Buffalo State College
Abstract

As part of a New York State SUNY Innovative Instruction Technology Grant, over 260 respondents from six SUNY campuses completed a “Presence Questionnaire.” This questionnaire asked participants to rate their opinions regarding the suspension of disbelief of the TLE simulated environment, ease of use, teaching experience and use of technology. Findings will be shared.

Introduction

When entering the middle school virtual environment Jerome asked the students a question. Kevin, a typically mild mannered avatar, was offended by Jerome’s question and began to talk back. Jerome’s repeated attempts to get Kevin's attention were ignored. Kevin continued to verbally attack Jerome. This novice teacher became so upset that he walked away from the simulation stating: "I hate this kid."

Practice makes perfect - this is true for just about any profession. Typically, more than a thousand hours of deliberate practice is required for any field (Ericsson, Krampe, & Tesch-Romer, 1993). In teacher education and related fields, this is often completed in classroom and school settings. It is well recognized that an optimal way to train professionals is to provide them with practicum experiences in field based settings so they can engage in the systematic development and evaluation of skills and be involved in the complex decisions professionals make every day (Bradley & Kendall; National Association of School Psychologists, 2010). The process or practice alone is not enough as people can learn correctly or incorrectly during practice. Significant to guided practice is systematic feedback while individuals are learning.

Teaching is a highly complex process. It requires solid foundational knowledge and competence in a core set of fundamental capabilities, often referred to as "high leverage practices." Professionals must be experts at meeting the needs of a diverse population. Not only are they responsible for massive amounts of information; but they must also expertly apply this information through pedagogy. Extensive preparation in pedagogy and supervised practice in clinical settings is necessary to produce professionals prepared to enter the field (Boe, Shin, & Cook, 2007). Even well prepared professionals voice concerns. For example, only 59% of well-prepared teachers who received extensive preparation report feeling prepared to handle classroom management and 71% feel prepared to administer assessments; these figures hover around 50% for teachers who were not well prepared (Boe et al.).

Future teachers and school leaders require a rigorous education based on a core of specialized competencies enabling them to enter the workforce well prepared. They need multiple opportunities to practice skills in "natural settings." These initial experiences can occur in either controlled settings through use of video case studies or microteaching where teachers do not have to adjust to the unexpected complexities of working with a real student in school settings. Teacher preparation programs need to think “outside the box when it comes to instructional delivery by moving beyond the traditional lecture format for instruction” (Kennedy, Alves, & Rodgers, 2015, p. 73). More effective practices are required (Darling-Hammond, 2010). There is an emphasis on competency-based models of training, which parallel, but lag behind those in medicine (Daly, Doll, Schulte, & Fenning, 2011). Computer simulations can provide an alternative by providing practice on specific skills and competencies in a controlled environment without the risk of causing harm to actual students/clients (Dieker, Hynes, Hughes,
Simulation is industry standard in the fields of aviation, dentistry, medicine, and defense (Dieker, Rodriguez, Lingnugaris-Kraft, Hynes, & Hughes, 2014). Students learn and practice foundational skills in a safe, supervised environment allowing for mistakes and remediation without affecting actual clients (Benadom & Potter, 2011; Kneebone, Scott, Darzi, & Horrocks, 2004; Macbean, Theodoros, Davidson, & Hill, 2013). In a randomized controlled trial in medicine, students who practiced in a simulated learning environment attained equivalent core professional competencies as those in the field, and the simulated practice led to improved confidence prior to workforce placement (Watson et al., 2012).

While fairly new to teacher education, 36 universities currently use simulated virtual environments such as TeachLivE™ (TLE) to enhance teacher preparation (Dieker, et al., 2015). According to Vince Garland et al. (2016), TeachLivE™ is an innovative avenue to provide practicing and pre-service teachers ways to meet the requirements of students with diverse needs by providing 21st Century skills. Simulations can be carefully constructed to provide opportunities for professionals to repeatedly practice skills in a safe environment until they reach mastery before entering field placements. When paired with correction, feedback and reflection, simulations can be powerful tools. Repeated exposure to the simulated laboratory with feedback indicates participants show significant growth in skills and competencies (Straub, Dieker, Hines, & Hughes, 2014). These researchers reported that four ten-minute sessions in the TeachLivE™ simulator improved targeted teaching behaviors in the simulator and those improvements transferred into the teachers' classroom settings at a significant level in two related studies (129 secondary science teachers and 157 middle school mathematics teachers). Ten minutes in the simulated laboratory was equivalent to one hour of time.

In 2015 three SUNY campuses, Buffalo State, New Paltz and Buffalo, received an Innovative Instruction Technology Grant. The goal of the grant (described elsewhere in this proceedings) was to expand collaboration and open sharing among SUNY colleagues to improve quality of learning experiences for students through the use of the TeachLivE™ (TLE) virtual simulator. While project staff have been involved with TLE for quite some time, we wanted to convey with confidence to future SUNY partners that the TLE has a strong presence. Since June 2015, project staff have been gathering data to support our hypothesis. Over 260 individuals from six SUNY campuses completed a “Presence Questionnaire”. This questionnaire asked individuals to rate their opinions regarding the suspension of disbelief of the simulated environment, ease of use, teaching experience and use of technology. Project staff hypothesize the degree to which participants can successfully suspend this disbelief, the greater their success with be in the TeachLive Laboratory and in future face-to-face situations such as the classroom or in leadership roles. Collecting data via a Presence Questionnaire and through a focus group was the first step in this process. Later this project will measure the effect of participant skills, knowledge and transfer to other settings. This paper reports the results of the Presence Questionnaire.

The International Society for Presence Research (2000) provides a detailed definition of the concept of presence (a shortened version of "telepresence") and identifies 12 different components. Presence varies between individuals, across time and differs in degree. It is multidimensional. The dimensions of sensory presence, social realism, and engagement are crucial components for the TLE environment. Briefly, the International Society for Presence Research defines these three dimensions as:

**Sensory presence** - objects, events, and/or people an individual encounters looks, sounds, smells, and feels, as they do or would in the physical world,
Social realism - objects, events, and/or people encountered do or could exist in the physical world, and

Engagement - occurs when part or all of a person’s perception is directed toward objects, events, and/or people created by the technology, and away from objects, events, and/or people in the physical world. Note that the person’s perception is not directed toward the technology itself but the objects, events and/or people the technology creates. (p. 1)

The authors believe the greater the level of presence, the more likely individuals will engage in the virtual environment and with reflection, will transfer and generalize skills to the "real" environment.

Participants were asked to answer 8 questions relating to presence. While specific demographic information was not collected and is a limitation of this study, the majority of the respondents were college students at the undergraduate and graduate level. Most were in teacher education programs. Faculty from teacher education programs and administrative leadership programs also provided information. Individuals completed the Presence Questionnaire regardless of direct face-to-face interaction with an avatar. While almost all of the students interacted one-on-one with an avatar, many faculty were hesitant to participate. Several engaged in the simulated environment as a two member team and others preferred to observe the situation. Regardless, they all completed a Presence Questionnaire. Some individuals attended more than one session and there is a slight chance they responded more than once.

Overall, the majority (50%) of individuals reported no teaching experience and 28% reported one to five years of teaching experience, the majority spent 16 to 20 hours per week on the computer, and only 25% reported interacting in an immersive virtual gaming environment such as Second Life.

Several TLE environments were used including the middle school classroom and the male and female adult avatars. The high school environment was only used a few times as there were technical difficulties maintaining this environment. The female avatar was used as the parent in almost all situations involving adults. The new male avatar was used once. The most frequently used environment was the middle school (45%) and 30% of the participants experienced environments with both a classroom and an adult.

An overwhelming majority (84%) reported the TLE felt like a real environment (strongly agree or agree). Ninety-four percent felt the environment was completely real or somewhat real (see Table 1). Sixty-four percent forgot the avatars were virtual and thought of them as real individuals (strongly agree or agree). The personalities of the avatars were very strong and 95% of the respondents strongly agreed or agreed that they began to understand the different personalities. Later respondents were asked if the characteristics of the avatars were NOT like real individuals. Over 80% strongly disagreed or disagreed with this statement. Ninety percent of the respondents strongly agreed or agreed that the avatars accurately represented the kinds of people that exist in the world. Combined these three questions support the strong presence of the avatars.

One question asked if the ability of the respondent to move around during the session impacted his/her level of interaction with the avatars. Thirty-six percent responded neutral to this question and 50% strongly agreed or agreed with the statement. The ability to move was statistically significant and negatively correlated to the environment experienced ($p = -.141$, $p<.05$). Participants were more likely to report their ability to move was impacted during the session if they experienced the adult avatar only versus the student avatars. Individuals who interacted with the adult avatars did so from a seated position. The simulation was set up as if the
participant was conducting a meeting with the avatar who was also seated in a chair. In a related question 51% of the respondents strongly disagreed or disagreed that it was difficult to interact with the avatars as if they were in a physical setting.

While these are preliminary findings, results indicate that most respondents valued the experience in TLE. Many reported that they wished their training programs had included this type of experience prior to fieldwork. Faculty echoed this statement. Results should be interpreted with caution as specific demographic information is not available.

Allowing future leaders exposure in a simulated environment should increase their success in the "real" environment. This is best explained by finishing the rest of the story regarding Jerome. Not only did he walk away from an antagonistic situation, he verbally stated: "I hate this kid" and returned to a safe zone outside of the TLE sandbox. As he walked away, Kevin, the avatar, said: "What did you say, Teach?" In a real classroom, this could have become volatile. In this virtual environment, Jerome's body language, facial expressions, and verbalizations conveyed presence was very real -- our ultimate goal.

Table 1 - Felt like I was interacting with real individuals

![Bar chart showing the feeling of interaction with real individuals]

References


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**Weaving Together Mindfulness and 21st Century Professional Learning: Preparing Teachers to Meet Diverse Student Needs**

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University of Central Florida

**Introduction**
The Carnegie Foundation for the Advancement of Teaching found that nearly one third of teachers quit within their first three years: “The problem takes many forms, including the feeling of being isolated from colleagues, scant feedback on performance, poor professional development, and insufficient emotional backing by administrators” (Headden, 2014, p.7). Attention to teachers’ social and emotional well-being, through intentional professional learning opportunities, has recently proven to not only influence their decisions to remain in the profession, but has also helped to improve student outcomes and decrease achievement gap effects (Rosenthal, 2016). One method that teacher educators and administrators utilize to help emotionally support teachers is integrated mindfulness-based practices. Jon Kabat-Zinn (2003) operationally defines mindfulness as “the awareness that emerges through paying attention, on purpose, in the present moment, and nonjudgmentally to the unfolding of experience” (p. 145). Through the incorporation of breathing techniques, yoga, and light meditation, mindfulness has the potential to reach teachers who are experiencing increased levels of stress, which put them at risk of leaving the teaching profession.

In addition to crucial social emotional support provided by outlets like mindfulness, new teachers also need to have consistent and contextual approximations of practice (Grossman, 2005). This allows them to try on different pedagogical and content-based approaches before they actually implement them in a real K-12 classroom. TeachLivE, a mixed reality classroom simulator, has the potential to be an alternative option. The simulator is designed to purposefully implement the critical components of strong simulated environments that can provide intellectual and emotional support through personalized learning, suspension of disbelief, and cyclical procedures (Dieker, Rodriguez, Lignugaris, Hynes, & Hughes, 2013). The use of TeachLivE simulation allows experiential learning to take place via realistic, specific scenarios that give learners an opportunity to practice alternative skills and learn from mistakes in a safe environment (Chini, Struab, & Thomas, 2014).

**Review of Literature**

**Mindfulness for Teaching and Learning**

Mindfulness has provided positive results to adults and teachers, prompting researchers to alter mindfulness practices to meet the needs of students in K-12 environments (Frank, Jennings, & Greenberg, 2013). For teachers, receiving instruction on implementing mindfulness-based skills has demonstrated an overall improvement of their teaching self-efficacy, level of personal well-being (Poulin, Mackenzie, Soloway, & Karayloas, 2008), ability to create positive relationships with students, and capacity to manage behaviors in the classroom (Meiklejohn et al., 2012). In order for teachers to effectively manage the classroom from an instructional and emotional level, social and emotional knowledge is important (Jennings, Snowberg, Coccia, & Greenberg, 2011), further demonstrating the need of mindfulness training for teachers. This is especially important as the emotional well-being of teachers can also influence the emotional states of their students.

Students who have participated in structured mindfulness practices have demonstrated a wide variety of improvements individually and within the classroom setting. A randomized-control study of 194 elementary school students (first through third grade) receiving 12 sessions of mindfulness-based practices such as body scanning, sitting, movement, and other relaxation exercises, showed improvements in social skills, selective attention, test anxiety, and teacher-
rated attention (Napoli, Krech, & Holley, 2005). Another 12-week randomized-control study implemented a mindfulness-based cognitive therapy program for 25 children between the ages of 9 to 12 years old (Semple, Lee, Rosa, & Miller, 2009). The results indicated that the treatment group reported decreases in anxiety for children who were in the clinical range and parent self-reports also indicated improvements in anger and behavioral concerns (Semple et al., 2009).

Teacher Learning through TeachLivE

As mentioned above, beginning teachers need opportunities for learning that are contextual. Fessler’s (1985) description of this induction phase positions teachers as especially in need of not only pedagogical, but emotional support: “During the induction period, new teachers strive for acceptance by students, peers and supervisors and attempt to achieve comfort and security in dealing with everyday problems and issues” (p. 2). Studies have shown that these everyday issues range from concerns about the knowledge of practice, discomfort with notions like classroom management, interest in gaining credibility in the teaching profession, and a desire to find unique ways to teach the content to diverse learners (Borko & Putnam, 1996; McCann, Johannessen, & Ricca 2005; Smagorinsky & Whiting, 1995).

Successful teacher learning attends to the knowledge of practice (Cochran Smith & Lytle, 1999), when teachers merge their theoretical and practical understandings of teaching to create more thoughtful learning environments. More and more, this proves to be helpful across teaching contexts and locations, as teacher education and professional development programs have begun to incorporate the use of digital technologies, virtual classrooms, and Web 2.0 tools to support new teachers. These necessary public examples of teaching practice are increasingly expanding and are not limited to face-to-face training. More frequently, scholars have focused on ways to understand how the practice of teaching develops through using web-based tools (Luehmann & Tinelli, 2008; Singer, 2004). The digital technologies they cite as instrumental in building these relationships span from one-to-one computing initiatives to online teacher learning spaces to teaching simulators, like TeachLive. It is within these innovative spaces that beginning teachers can reflect on their evolving pedagogical understandings and ideas. The highly immersive classroom simulator is currently used to help individuals practice skills regularly implemented in the teaching environment, much like training a pilot using a flight simulator before flying the plane (Chini, Straub, & Thomas, 2014).

TeachLivE allows teachers to try something new in a safe space, reflect on their interaction, and receive immediate feedback after using the mixed reality teaching environment. The TLE TeachLivE™ Lab delivers pre-service and first year teachers the opportunity to learn new skills and to craft their practice without placing “real” adults or students at risk during the learning process (teachlive.org). TeachLive now includes a middle school classroom, a high school classroom with a student with autism and a student with intellectual disabilities, a male and female adult avatar, and the newest addition, an elementary classroom. In this simulated virtual environment teachers can focus on achieving specific, desired outcomes that will improve their confidence and ultimate success as a first year teacher. This cataloging affordance also has potential to record aspects of evolving professional identity that are especially relevant for induction phase teachers that are just beginning to establish themselves as members of their field.

TeachLive provides the opportunity to focus on critical behaviors, such as mindful communication and mindful listening, while having a parent-teacher conference. Using mindful strategies allows the teacher to defuse difficult conversations and situations while emphasizing
connection, empathy, compassion and harmony (Stahl & Goldstein, 2010). Having access to this type of teacher preparation before the first day of school could enhance the next generation of in-service and pre-service teachers using simulations and virtual environments. Simulations allow individuals to have repeated trials involving high stakes situations without risking the loss of valuable resources (e.g., money, time, and people) (Dieker et al., 2013).

**Purpose**

The purpose of the study was to examine what works to support beginning teachers (those in their first three years of service) as they develop their understandings of how to support students with diverse needs and to provide them with a vision for making practice public that they can utilize beyond the scope of the study as members of the field. This was achieved through a series of professional learning sessions supplemented by an invitation to participate in an online professional learning community (hosted on Ning.com). This online professional learning community was created specifically for the participants, based on their readiness and perceived needs, to share resources, commiserate, and provide peer to peer support. The final session was a simulated Parent/Teacher conference with the adult TeachLivE avatar. The simulated virtual environment was created to practice and demonstrate strategies discussed during professional learning sessions. The study also promoted an interdisciplinary stance that marries current 21st century literacy practices with counseling-based mindfulness practices for stress-based reduction techniques and interventions that was employed during professional learning sessions. In addition to privileging the emotional and intellectual growth of beginning teachers, outcomes of the study show promise to impact the diversity and richness of evidence-based learning support offered to PK-20 students in the state of Florida.

**Methods**

**Research Design**

Using an interpretive qualitative approach, this study merged the implementation of technology with mindfulness-based approaches and professional learning to help early career teachers navigate the often-choppy waters of teaching students with diverse needs. Sociocultural and social learning theories (Gee, 2006; Lave & Wenger, 1991; Wenger 1998) were incorporated to explore how beginning teachers, often considered legitimate peripheral participants, display patterns of membership and interaction, as well as how they position and identify themselves as beginning teachers within the discussions they engage in. Prior research shows that experience during student teaching is not always enough to prepare in-service teachers for the realities of their school contexts (Forlin & Chambers, 2011). Factors included in this are teachers’ previous experiences, apprenticeship of observation (Lortie, 1975), and lack of solid professional learning opportunities. By incorporating the two notions of mindfulness and 21st century literacy practices through the use of TeachLive, support for new teachers can materialize in a way that not only provides them with a safe space to try out their responses to high risk and high anxiety situations, but also fosters a sense of growth and inquiry as they continue to learn about and expand their experiences for supporting students with diverse needs.

**Research Questions**
Throughout the course of the study, the following questions guided both the organization of professional learning experiences for participants and the collection and analysis of data sources:

R1: How does participation in a PLC and supplemental professional learning sessions incorporating mindfulness-based (TeachLivE) support exercises impact the teachers’ overall experience of their own learning?

R2: How might participation in these disciplinary professional learning experiences impact the learning experiences of PreK-20 students?

Participants

Participants included a subset of eight teachers from various low socioeconomic elementary schools from Orange County Public Schools. Recruitment of appropriate participants was purposive, based on qualifications that included: participants were in their first year of teaching and were willing to participate in a personal learning community (PLC) focused on the topic of how to support diverse learners in the elementary classroom.

For a period of six months, participants and PIs met three times and engaged in continuous asynchronous discussions and content creations in an online professional learning community designed for and only open to them. The professional learning sessions included teacher-led discussions grounded in the goal of learning and sharing about the processes of supporting students with diverse needs in the classroom. In addition, each session involved a host of mindfulness-based therapy strategies, including breath-work and nonjudgmental awareness exercises meant to encourage participants to unpack their experiences and arm them with day to day, practical strategies for coping with the early career stressors and realities of the classroom. Teachers demonstrated mindfulness-based communication strategies, such as openness, compassion, and empathy, during the final session using the adult TeachLive avatar in a personalized simulated environment. The topic of parent teacher conferencing was chosen as the basis for the TeachLive scenario because this was an element participants mentioned in their prestudy surveys as one for which they wished they had been given more support and training. Before the session began, participants were asked to interact with the avatar based on a student in their current class. The interactor played the role of a parent that was difficult to contact during after school hours.

Instrumentation

Assessment of the impact on social, emotional, and academic progress of PK-20 students in Florida was closely tied to the qualitative data analysis and teachers perceptions of the professional learning opportunities afforded by the study and potential for the translation of strategies to their teaching contexts. For example, questions on the participant pre-surveys allowed researchers to gain a baseline understanding of participant experiences and became an assessment tool for gaining a sense of how the participants might benefit from mindfulness and web-based support. Survey questions included:

1) How do you currently support the diverse needs of students in your classroom?
2) What professional development or learning opportunities have you been exposed to that support your own work with students with diverse needs?
3) How has this professional development and learning helped you to create interventions and support used for students in the classroom?

4) What other types of support have you received as a beginning teacher? How have these opportunities informed your ideas about teaching and learning and working with students with diverse needs?

Data sources included pre and post participant surveys, audio recordings of open-ended focus group interviews held during the professional learning sessions, observational field notes taken during face-to-face professional learning sessions, content derived from the web-based professional learning community on Ning.com, and the final TeachLivE mixed reality Parent/Teacher conference session.

Ongoing Data Analysis

Data will continue to be coded using thematic and constant comparative analysis methods (Creswell, 2012) and results are expected at the end of 2016. Focus interviews were coded by emic perspective (concepts that participants use in making sense of their experience), to develop an interpretive understanding of teachers’ perceptions of the professional learning sessions (Kvale, 1996). Researchers employed member checking (Maxwell, 2005) by sharing interpretation of data with participants as the study progressed. This ongoing data analysis will be used recursively to organize and construct future professional learning sessions during the pilot, based on teacher readiness and need. Researchers continue to utilize data and accompanying analyses along with participant input, to develop and organize more full-scale supports for teachers that demonstrate the interdisciplinary cross-section of mindfulness-based therapy and 21st century teacher learning.

Preliminary Findings

Overall, the participants in the study reflected on their experience as one that shifted their perspectives about mindfulness and its potential to influence teaching and learning. They mentioned feeling more open to utilizing mindfulness-based practices in their daily lives and envisioned putting into practice their learning in sustainable ways. One participant said that she already noticed the effects daily practice had made on her teaching: “I never really thought about mindfulness. I do find that I try to use it in my stressful moments during teaching. I try to find calm methods to react and while stressed trying to focus in on simple things such as my breathing, thoughts, and movements.” In addition, participants mentioned that they were more willing and eager after the study to think about ways in which they could use mindfulness practices in the classrooms, with their PreK-4 students. Another participant mentioned: “I had always thought about mindfulness strictly inside my classroom and had never really thought about how mindfulness outside of my classroom also affects my students as well as me. I have noticed that as I am more mindful of my surroundings, I am in more control of my classroom environment because I am more calm and collected.” In addition, teachers appreciated the safe space and informal professional learning environment that the professional learning sessions provided. For example, they cited the established group rules and the openness of the group served as an expression of honest frustrations as new teachers.

The participants also noted their appreciation of the scaffolding of mindfulness strategies used in the TeachLive simulation, including newfound discoveries through the parent/teacher
conference sessions. One participant said the simulated situation would have helped, “during parent teacher conference night after report card night it was hard to talk to parents about their kids grades, I didn’t know what to do. This (practice) would have helped with that.” When asked what participants would like more of during our group sessions in the post survey a participant noted the TeachLivE session, “…using the simulated (avatar) before we got into the classroom” would be beneficial.

**Plan for Future Interactions**

Further research will explore different approaches to help teachers implement mindfulness activities more purposefully and consistently in their personal world as well as within their teaching environment. This could include creating safe spaces such as a mindful corner in classrooms for students to practice mindfulness skills when feeling emotionally dysregulated. To further assist beginning teachers in feeling comfortable to disseminate mindfulness-practices to their students, a TeachLive scenario will be created where they can practice teaching mindfulness tools with a classroom of student avatars with and without disabilities. This would provide the opportunity for teachers to practice their skills in a safe space, allowing them to become more confident in their abilities before teaching their own students.

**Conclusion**

Leveraging digital tools to support beginning teachers, the incorporation of TeachLivE, and the latest research in mindfulness-based supports in education provides another method to approach the gap in emotional support that is a reality of early teaching experiences and contributes to the current teacher attrition rates. In addition to providing new teachers with a safe space to nurture themselves and their colleagues, the use of mindfulness-based therapy, strategies in teacher professional learning opportunities, and TeachLivE interaction has potential to alleviate the intellectual and emotional stressors that are common among new teachers (Jennings, 2015). When teachers hold negative perceptions around the teaching of students who have diverse needs, they tend to present with more anxiety and depression (Ferguson, Frost, & Hall, 2012). Hinds, Jones, Gau, Forrester, and Biglan (2015) assessed for distress in teachers and found that when teachers work with exceptional education students, especially with low levels of support in the endeavor, their rates of stress were higher than their counterparts. It becomes especially concerning if educator stress is not managed, as an increase in stress can lead to burnout, influencing teacher retention (Bowers, 2004). Mindfulness-based therapies are often implemented for a myriad of mental health concerns, especially anxiety and stress reduction (Call, Miron, & Orcutt, 2014). When applied to the profession of teaching, studies indicate that incorporating mindfulness strategies can help new teachers develop a better sense of identity, foster better relationships with their PreK-20 students, and remain more connected and refreshed in the field (Srinivasan, 2014). The effects of these types of professional support have also been shown to have positive influences on PreK-20 students and their own learning within the context of the classroom community (Jennings, 2015). The use of the personalized learning platform TeachLive provide teachers with the communication tools to assist them in ascertaining critical skills needed for their success and their student’s success (Dieker et al., 2013).
This study is significant because it adds to the bodies of research on virtual teacher learning spaces and the incorporation of mindfulness-based techniques for teacher learning. While scholars have explored the structures and practices of these environments before, it is important to note that there is very little to account for teachers’ own perceptions about why they are helpful. While there are many studies on how formal professional development can be moved onto online spaces, the study of non-formal, voluntary participation in an online professional learning community is rarely mentioned in the scholarship. Finally, there is no current literature base for studying the intersection of 21st century literacy skills and mindfulness-based practices combined with TeachLivE simulation for beginning teachers in need.

References


http://teachlive.org/


From What to How: Bridging the Gap Between Theory & Practice In a Mutli-Cultural Context
Reflections on our First Year of Operation
Sheryl Rogers
Deema Al Alami
TELLAL Institute of Teacher Leadership and Learning for All

The institute of TELLAL has evolved to offer distinct teacher training routes and specialist strands of schools-led, school-based applied teacher training which requires effective,
comprehensive and reciprocal learning alongside communication systems that reflect an intelligent and contemporary professional learning institution.

*Educational technology is the efficient organisation of any learning system, adapting or adopting methods, processes, and products to meet specific educational goals.* (Aggerwell, V. 2011)

The UAE context is unique in its diverse and growing ex-pat population who are only permitted to access private education. This is exacerbated by a demanding national agenda for educational reform. This model has been developed to address the burgeoning need for high quality teachers in a country that is rapidly expanding with Ex-patriot students. While the UAE does not suffer from a lack of teacher supply, the challenge lies within the quality of teaching and establishing a unified understanding of a qualified teacher. Many teachers have considerable subject knowledge, but have little or no pedagogical expertise. Within this unique multi-cultural context of the UAE, TELLAL’s distinct model of “schools-led” digitally supported teacher training is addressing the current need to develop a pipeline of quality teachers. The implementation of an alternative model of training, which addresses the disparity between the academic theories of delivering subject knowledge and the methods by which teachers are expected to convey knowledge, is proving transformational. Through the use of contemporary educational technologies such as avatar-based simulations, SWIVL robots and Bug in Ear (BIE) coaching, teachers are immersed in a stimulating, challenging and authentic learning environment where they are developing skills and competencies aligned with the soon to be implemented Federal Teacher Standards.

Situated cognition and embedded intervention must meet the needs of teachers from a variety of cultures, teaching a variety of curriculums and speaking a variety of languages and teaching classes of students from diverse nationalities. The challenge for both Avatars and instructional coaches is to understand and be responsive to those cultural filters that we all bring to the virtual classroom. Simulation training addresses the challenge of engaging teachers with low English proficiency to practice not only teaching strategies but also, culturally responsive pedagogies and communicative language skills.

In TELLAL, this begins with identification of educational goals, recognition of diversity of learners’ needs, developing contexts in which learning will take place and the range of provisions required for each of these. The challenge is to procure and deploy appropriate technology tools and resources in order to design practical, nimble systems that provide for, and enable effective teaching-learning practices.

As a twenty-first-century career orientation is a necessity for today’s learners, educational technology must be perceived as essential in engineering the teaching-learning situation to make it a contemporary, meaningful and sustainable experience for both teachers and students. Therefore, simulations do not sit in a vacuum but rather become an integral part of a series of learning packages that surround the big teaching and learning ideas. Simulations allow our pre-service and in-service teachers to experience opportunities to contextualise and apply theory whilst dealing with multiple cultures and languages as well as diverse students’ abilities. The foundations of our simulation use are:
• To focus on important fundamentals of teaching through simulated scenarios related to theories and concepts that are contemporary and appropriate for a 21st century learning environment.
• To employ metacognitive processes that link theory with practice and posit the notion that learning happens in context by addressing challenges as they appear.
• To focus on the role of language: communicative competency; metaphors of acquisition and methods of participation to produce shared understanding, shared investment, thoughtful development of self.

Simulation training through instructional coaching has been transformational for many in-service teachers whom needed to reflect on their own beliefs about how students learn. Reflecting in-action rather than after-action enables teachers’ opportunities to deconstruct practice and discuss whether those practices are still fit for purpose in the 21st century. For many teachers it’s the ‘unlearning’ that proves necessary. Developing a willingness to be more adaptive depending on student needs can often only be confronted in the simulator. Many cultural filters make it prohibitive to critic teachers so cultural responsiveness and sensitivity is a vital component in the simulator.

It is also important that simulations do not become an exercise in English language proficiency. The presence of a translator as well as a mentor in the simulator has been an important requirement to ensure nothing is lost in translation with regards to teacher student interactions. The Avatar’s verbal and non-verbal cues become important when engaging with non-western teachers. The US specific vernacular of the avatars did not always coincide with the Lexicon of the MENA (Middle East & North Africa) region and Asia. Furthermore, given the international context of the student body teachers in the UAE engage with, the need for them to become aware of and tolerant of, the contexts and understandings that occur in a multicultural classroom, it became essential to work closely with both the Simulation Specialist and teachers to ensure there was no misinterpretation of body language and verbal exclamations during the simulation. This is not only in language and diverse vernaculars but also in regards to associated beliefs and values.

The above contributed to creating a safe learning environment, to the extent, which, teachers who were engaging with the Avatars, adopted both the role of a Mentor and Mentee. This allowed for a more collegial approach to individual improvement and consolidated the premise that some things in education are universal and transcend any perceived cultural barriers.

This aligns with John Hattie’s research, stating that “Teachers connecting with each other, to reflect on and share the impact of their practice, has a greater effect on student learning than any other single factor.” (Professor John Hattie, Visible Learning World Conference, January 2016.)

Mentoring and coaching is the vital component in the quest to improve teacher quality, as our teachers need to go beyond re-calibrating their skillset to reflect contemporary teaching practice. The potential for a very behaviourist approach exists. Teachers learn how to identify and replicate certain strategies, but the simulator exposes the teacher’s ability to know more than just how to execute those skills and strategies, but rather to respond to situations in an authentic manner. The desired outcome is that our teachers know when to apply those strategies for maximum effect and assume what the outcome will be if the strategy is successfully applied.
Much of the discussion in the simulator is based on how well the strategy worked and how do they know? Causing the teacher to ‘reflect–in-action’ and to know why they are doing what they do. Learning new ways of practice as they are created rather than just the mastery of putative existing knowledge or skills, increasing their capability to perform behaviours beyond knowledge and skill into knowing when to apply it and why applying it will be effective.

Overall, our 1st year has been a steep learning curve, but we are resolute in our belief that simulation training is an incredibly transformational and impactful tool, which is able to make the cultural leap when deployed with appropriate support from both sides of the simulation window. Simulation Specialists have had to adapt the avatar behaviours to accommodate Muslim, Hindi and western values and languages. They provide appropriate responses and behaviours, sometimes in languages other than English, while maintaining fidelity with the simulation story. It’s an ongoing challenge for the Simulation Specialists not to allow cultural or language differences derail the simulation experience and simultaneously ensure the teacher recognizes the intent of student responses. Simulation design is therefore detailed and deliberate responses are constructed to mitigate any misunderstandings.

Our biggest challenge is the scheduling. Given the time zone, our next step, in order to scale, is to recruit and train our own Simulation Specialists so they are situated in our time zone. This will give us the opportunity to have an Arabic speaking Simulation Specialist, which will have a huge impact on our ability to deliver simulations effectively for all teachers in the UAE and the Arabian Gulf.

The TELLAL institute exists for one purpose only: to improve the actual quality of teaching in schools, first in Dubai, then in the UAE as a whole and then further afield. The vision for TELLAL is bold and its potential reach is wide. Given our bold vision it is important that the institute’s foundations are carefully laid. The clarity of TELLAL’s purpose determines its character and steers its development. TELLAL does not exist to award (or broker) academic qualifications except insofar as these are genuinely able to contribute to improving the quality of teaching in local schools in a very practical and measureable way.

TELLAL’s work comprises five key functions:

- Pre-service teacher training;
- Teacher Assessment, which is conducted via the assessment and development centre (ADC);
- In-service teacher education, development and training;
- The Leadership Academy;
- Research and Knowledge Exchange.

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**Shifting Towards Practice-Based Teacher Preparation:**

**Using Mixed Reality Simulations to Impact Pre-service Teachers’ Situated Cognition**

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Abstract

For two decades, the field of teacher education has been shifting towards the medical model of teacher education (Doyle, 1990). Despite efforts to use case study methods and clinical rounds, the field has struggled to provide a cohesive, integrated curriculum that prepares candidates for the classroom. Practice-Based Teacher Preparation (PBTE) provides a model for programs to situate practice within the context of use. Part of the challenge facing teacher educators is the act of teaching itself. In order to teach effectively in today’s diverse classroom, preservice teachers need contextualized preparation on high leverage practices in a supportive environment (Matsko & Hammerness, 2013). The use of virtual simulation software such as TeachLivE (Dieker, Kennedy, Smith, Vasquez, Rock, & Thomas, 2014) in pre-service education has the potential to bridge the theory to practice divide for situated cognition, supporting the notion that what is learned cannot be separated from how it is learned and used (Brown, Collins, & Duguid, 1989). This article discusses how to use virtual simulation software to shift towards practice-based teacher preparation.

Teacher preparation in the 21st century continues to be a profession under siege. During the past two decades, calls for more accountability in teacher education have led to increased federal regulation of the profession and exploration of alternative pathways to teaching (Lewis & Young, 2013). In 2010, the National Research Council released its report on teacher preparation programs (TPP). The report noted the wide variety of teacher preparation programs and the lack of a national outcome driven accountability system. Critics of traditional teacher education programs also argued that beginning teachers were woefully underprepared and therefore radically new models were needed to address today’s diverse classrooms (Bullough, 2014; Zeichner, 2010). Further, it has been contended that teacher education needs to situate learning to connect the theory of learning to the actual practicing of teaching (Washburn-Moses, Kopp, & Hettersimer, 2012).

The critical question facing the profession is what should these new models of teacher preparation entail? Critics contend that the traditional model of teacher preparation is too generic and has not resulted in impact on student learning (Cochran-Smith & Zeichner, 2005; Haberman, 1996). Part of the challenge facing teacher educators is the act of teaching itself. The complex, inchoate nature of teaching involves situated cognition and performance (Janssen, Westbrock & Doyle, 2014). In order to teach effectively in today’s diverse classroom, preservice teachers need contextualized preparation on high leverage practices in a supportive environment (Matsko & Hammerness, 2013). This has resulted in a shift towards a practice-based teacher preparation program.

Practice-Based Teacher Education

Practice-Based Teacher Education (PBTE) is a model that focuses on high leverage practices in the situated context of use (Grossman, Hammerness, & McDonald, 2009; Zeichner, 2012). Practice-based teacher education programs are defined as preparation pathways with a systematic focus on developing pre-service teachers’ abilities to implement high leverage...
practices that impact student learning (Grossman, 2011; Zeichner, 2012). PBTE programs represent the shift in teacher preparation towards a medical model of education where pre-service teachers explore the contextual nature of their profession and understand the nature of the content they teach (Matsko & Hammerness, 2014).

*Transforming Teacher Education through Clinical Practice: A National Strategy to Prepare Effective Teachers* (2010), a report by the National Council for Accreditation of Teacher Education’s (NCATE) Blue Ribbon Panel on Clinical Preparation and Partnerships for Improved Student Learning, posited that teacher preparation programs need to be “fully grounded in clinical practice and interwoven with academic content and professional courses” challenging programs to meet the needs of 21st century classrooms by creating “a system built around programs centered on clinical practice that offers shared responsibility for teacher preparation, supports the development of complex teaching skills, and ensures that all teachers will know how to work closely with colleagues, students, and community” (p. ii)

This report and successive supporting documentation (Berry, Montgomery, Curtis, Hernandez, Wurtzel, & Snyder, 2008; Darling-Hammond, 2005; Elliott, 2010; Howey & Zimpher, 2010; NCATE 2010a, 2010b; National Governors Association, 2010; NGSS Lead States, 2013) undergirds the practice-based framework and its focus on high-leverage core practices.

The program’s focus on high-leverage core practices is to enable pre-service teachers to learn how to use knowledge in action and to reflect the situated decision-making that in-service teachers perform daily (Forzani, 2014). High leverage core practices used in this program have the following characteristics as defined by research:

- Occur with high frequency across different contexts
- Focus on impacting student learning
- Reflect the complex nature of the act of teaching
- Occur across different curricula or instructional methods

(Grossman, Compton, Igra, Ronfeldt, Shahan & Williamson, 2009). As teacher education moves towards a practice-based preparation program in alignment with medical school residencies, the danger is to create a ‘technician’ model that fails to recognize the messy complexities and inchoate nature of teaching (Grossman, 2011; Zeichner, 2012). Therefore a new curriculum design for PBTE is needed that presents these high leverage practices within the context of use.

**Program and Curriculum Design**

Effective practice-based teacher education programs are grounded in research and provide pre-service teachers with the opportunities to enact high leverage core practices (Forzani, 2014). An innovative curriculum design incorporates the characteristics of effective PBTE programs with a learning cycle that provides pre-service teachers with myriad opportunities to engage in situated practice. Effective PBTE programs include a learning cycle with the following components: *representations of practice, approximations of practice, enactment of practice, and investigation of practice* (McDonald, Kazemi, & Kavanagh, 2013). *Representations of practice* enable pre-service teachers to view videos of exemplary teachers modeling high-leverage core practices such as facilitating student led discussions. In the second component, *approximations of practice*, pre-service teachers try out the high-leverage core practice with their peers or in simulated scenarios through immersion software with coaching by
their teacher educator. *Enactment of practice* is the implementation of the practice in the classroom situation with coaching and feedback by the mentor teacher. The final component, *investigation of practice*, is a reflective, collaborative analysis where pre-service teachers view videos of their instruction and dialogue with their mentor teacher and teacher educator. Furthermore, the Teacher Work Sample, a summative performance assessment at the end of the program is an in-depth *investigation of practice* that requires all pre-service teacher residents to implement a unit of study, collect student artifacts, video their teaching, and reflect on student achievement.

**Preservice Teachers and Situated Cognition**

The myriad opportunities to implement high-leverage practices in context of use entails situated cognition. Situated cognition is defined as the contextualized nature of knowledge, bound by agent and situation (Brown, Collins & Duguid, 1989). Situative theorists posit that the physical, social context of the activity where knowledge is constructed and interaction during it are critical to transfer and application to new settings (Putnam & Borko, 2000). Teacher education programs for the past decade have shifted towards residency programs and professional development schools to enable preservice teachers to construct knowledge within the context of use.

**Preservice Teachers’ Knowledge Structures**

Preservice teachers construct and apply knowledge in different ways from expert practitioners. The instructional strategies that teachers utilize are derived from their problem-solving abilities. The inchoate nature of teaching has complicated the issue of teacher problem-solving. Research on novice/expert teachers’ problem solving confirms that experts organize their instructional strategies/solutions into problem type schemata (Bernardo, 1994). Their rich, deep representational knowledge based allows them to ‘chunk’ problems into categories and to process information (Bruer, 1993). Conversely, novices due to their inexperience, depend upon the surface level of the problem and utilize lower level reasoning skills (Ericsson & Simon, 1993).

Teaching, as in medicine and law, contains many problems that demand novel solutions. According to Leinhardt & Greeno (1986), teaching is a set of complex cognitive skills that further complicates the process. In order to problem solve, the teacher must attend to incoming data and organize it into existing schemata, which depends upon types and context of prior experiences. Preservice teachers’ knowledge base is therefore often inadequate due to lack of experience (Reynolds, 1995).

**Re-conceptualizing Preservice Teachers’ Problem-Solving Abilities**

Re-conceptualization of preservice teachers’ problem-solving during instruction is facilitated when they are given opportunities to verbalize their ‘reflection in action’ within the context of use (Schon, 1983, 1987). Reflection in action entails preservice teachers’ examining their cognition while teaching in the context of use. Approaches to develop situated cognition
entail the use of case studies where preservice teachers discuss multiple perspectives and pedagogical practices (Doyle, 1990).

However, the profession has only recently begun to explore how technology may be used to augment these efforts. In 1998, early efforts by Lampert and Ball explored how to use hypermedia to explore pedagogical problems related to math. The Casebook of Project Practices (CaPP) was another endeavor to use multimedia case studies to showcase innovative pedagogy in science for in-service teachers (Marx, Blumenfeld, Krajcik, & Soloway, 1998). Limited research has investigated the use of technology to develop preservice teachers’ schemata in regard to problem-solving. According to Carter & Doyle (1989), expert teachers’ knowledge is event structured or episodic, context-based, and is organized according instructional features or patterns. Situated cognition takes place in the “context of task-related inputs and outputs (Wilson, 2002, p.626). Mixed reality immersive simulations, such as TeachLivE, are a new tool for the profession to explore for pre-service teachers to develop their schemata regarding instructional problem solving within situated learning environments that resemble a real classroom.

**Situated Learning through Mixed Reality Simulations**

Virtual learning has been used in other disciplines, such as in law enforcement and health care (Richards & Szilas, 2008) and in aviation (Salas, Bowers, & Rhodenzier, 1998). Virtual learning has been under-employed in educational contexts (Dodd & Antonekko, 2012), yet it holds great promise for teacher education. The use of technology in teacher education continues to develop and TeachLivE is an emerging innovation in that expansion (Dieker, Kennedy, Smith, Vasquez, Rock, & Thomas, 2014). TeachLivE was originally created in 2008 with an interdisciplinary team of education and computer science faculty at the University of Central Florida in Orlando (Dieker, Hynes, Hughes, & Smith, 2008). According to Nagendran, Pillat, Kavanaugh, Welch, & Hughes (2013), TeachLivE is an avatar-mediated teacher training system that operates with a “human-in-the-loop approach” [that] combines digital puppetry (Hunter and Mapes, 2013; Mapes, Tonner, & Hughes, 2011) with basic Artificial Intelligence processes.

Milgram & Kishino (1994) proposed a reality-virtuality continuum that traverses a complete physical reality to a complete virtual reality. In the middle of the spectrum is augmented reality. Augmented reality (AR), also known as mixed-reality (MR), combines both real and virtual realities for an interactive learning environment (Milgram and Kishino, 1994). Mixed reality denotes an environment that is both virtual and real, allowing students to connect with prior learning (Squire & Klopfer, 2007) and to contextualize learning beyond the classroom (Liu, Tan, & Chu, 2009).

Lindgren and Johnson-Glenberg (2013, p. 447) suggest that there are two characteristics of mixed reality environments. First is that they situate the student inside the simulation and, as in the case of TeachLivE, the students become a part of the simulation. Second, the technology is responsive to the student’s movements within the simulation. TeachLivE satisfies both requirements for mixed reality learning environments. As the teacher trainee enters the TeachLivE simulation, on the television screen is a virtual classroom with five avatar students. A camera and speakers allow the off-site interactors who control the avatar students to see the teacher trainees as they interact with the avatar students. In TeachLivE, the Kinect X Box tracks the teacher trainees’ actions so that they appear to move through the avatar mediated space on the screen, shifting closer to an avatar student to address her individually or addressing the class.
as a whole group. Teacher trainees experience a sense of immersion that feels like a real classroom with real students. This sense of immersion into the virtual classroom necessitates that the teacher trainees experience situational plausibility—the possibility that they could actually be teaching a real class—and place illusion—the feel that the mixed reality space has the sensation of a real classroom (Hughes, 2014)—as they negotiate a seemingly physical environment that mingles both real and virtual spaces.

TeachLivE utilizes virtual characters involving human interactors who control the personality of the student avatars acting as students in a classroom with the human teacher trainees. The interactors—who regulate the avatar students—have previously studied and prepared for the teacher trainees’ lesson and objectives and respond as typical students. Avatar classroom behaviors may be modulated on a scale from 1 to 5 (with 5 representing the most intense behavior problems), depending on the goals of the session.

As teacher trainees engage in the immersive mixed reality lab, they interact with the five middle school level or high school level avatars. The avatar-students are based in descriptions of adolescent development using William Long’s classification of adolescent behavior, combined with Rudolf Driekur’s theory of adolescent maladaptive behavior and other developmental theorists (Andreasen & Hacimeroglu, 2009), allowing teacher trainees to practice instructional problem-solving and reflection in a mixed-reality, immersive classroom that is based upon a real classroom with live students. Two extremes of the personality types of the avatar students within TeachLivE are Sean—who is the aggressive-dependent style and who requires ample teacher attention from the teacher trainees, and Maria—who is the passive-independent style and who does not appear to demand any attention from the teacher trainees (Hughes, 2014). The other avatar students—Ed, Cindy (CJ), and Kevin—are comprised of various personalities within the dependent-independent and aggressive/passive polarities. Ed is the passive-dependent avatar student who desires the teacher trainee’s attention but is too polite to demand it; CJ is the aggressive-independent avatar student who is a class leader, but who has disregard about the teacher trainee’s rules or expectations; and Kevin, who is the dependent-aggressive style and who relies on CJ’s attention within the immersion experience (Hughes, Nagendran, Dieker, Hynes, & Welch, 2015, p. 136). Figure 1 (TeachLive, n.d.) depicts the middle-school student avatars (Ed in the front left and Sean in the front right; Maria in the back left; CJ in the back middle; and Kevin in the back right).

Figure 1: Middle School Avatars
The avatar-students will respond to questions and join in multiple forms of pedagogy at an individual, paired or classroom level approach (Hayes, Hardin, & Hughes, 2013), resulting in an a sense of deep presence, immediacy, and immersion (Bronack, 2011) and with that engagement, the development of cognitive flexibility in classroom situations (Dieker, et al., 2013). Teacher trainees may practice higher-order questioning, classroom management, or other high leverage instructional skills based upon the professor’s goals for the session.

A further extension of situated cognition within TeachLivE concerns the time constraints that may be built into the simulation in the virtual classroom (for example, requiring a fifteen minute lesson) that allow a real-time application of teaching; this is known as “time pressure” in situated cognition (Brooks, 1986; Pfeifer & Scheier, 1999) and it suggests learning that occurs as it would happen within a classroom where time is a crucial challenge facing teachers. A teacher trainee can practice repeatedly until mastery is achieved without any harm to actual students and without students remembering the learning curve toward mastery of a high leverage practice (Judge, Bobzien, Maydosz, Gear, & Katsioloudis, 2013; Katsioloudis & Judge, 2012).

Following the mixed reality immersive session with avatar students, teacher trainees may then employ “reflection in action” (Schon, 1983, 1987) within the context of their virtual classroom experience. Through coaching and peer feedback that can occur before, during (e.g. Elford, Carter, Aronin, 2013) or after the TeachLivE immersive simulation, teacher candidates begin to develop instructional problem solving abilities before they enter their clinical placement through the simulations.

The use of TeachLivE in pre-service education has the potential to bridge the theory-to-practice divide for situated cognition, supporting the notion that what is learned must be presented within the context of use (Brown, Collins, & Duguid, 1989). Situated learning from a learner-centered perspective (Koc & Bakir, 2010) provides a useful framework for virtual environments (VE’s) in teacher education contexts. TeachLivE has been found to provide a safe place to practice and to provide corrective advice (Dieker, et al., 2013) in a simulated learning environment. Figure 2 pictures a teacher trainee interacting with a high school class of avatar students.
TeachLivE within Practice Based Teacher Education

Coupled with research based practices (e.g. Lowenberg-Ball, 2012) and traditional clinical placements, mixed reality simulations such as TeachLivE can provide a powerful application of situated learning for pre-service candidates. For example, making content explicit through modeling and explanations is one of Lowenberg-Ball’s (2012) high leverage practices. A TeachLivE simulation that focuses on this practice prior to implementation in a clinical placement increases the effectiveness of the practice in a clinical placement at a later time. Similarly, pre-service students may practice appraising, choosing, and modifying a learning goal (Lowenberg-Ball, 2012) within a specific learning segment with the avatar students before implementation with live students. Situated learning within an immersive learning environment connects high leverage practices and clinical placements. TeachLivE can be used in a Practice-Based Teacher Preparation Program to prepare candidates for the field as illustrated in Figure 3.
High Leverage Practice
(Lowenberg-Ball, 2012) | edTPA | TeachLivE Simulation | Clinical Placement
--- | --- | --- | ---
Making content explicit through modeling and explanations | Task 1: Planning a Learning Segment | Implement content specific learning segment with avatars. | Implement content specific learning segment in field placement.
Appraising, choosing, and modifying a learning goal | Task 1: Planning a Learning Segment Task 2: Instruction | Differentiating a learning segment with avatars | Differentiating a learning segment in field placement.

Figure 3. Implementing high leverage practices with TeachLivE Simulation learning within a mixed reality environment such as TeachLivE provides teacher candidates with a “safe space” to be introduced to the high leverage practices (Lowenberg-Ball & Forzani, 2011) that impact student learning, such as making content explicit. Teacher trainees may practice critical high leverage strategies without risk to real students. The situated learning that accrues through the immersive learning instructor between teacher-trainees and avatar students serves as the conduit for those high leverage practices to dependably emerge in the clinical setting.

TeachLivE delivers a mixed-reality environment in which novice teacher education candidates may immerse themselves in high leverage classroom practice with avatar students. Specifically, TeachLivE provides McDonald, Kazemi, & Kavanagh’s (2013) representations of practice, approximations of practice, enactment of practice, and investigations of practice. Additionally, unlike the situated learning within traditional clinical placements, TeachLivE supports a laboratory learning environment where teacher trainees may practice their instruction with low risk to both the trainees and to human students. While the situated learning of simulations such as TeachLivE has the potential to promote learning, the specific activities that teacher trainees perform within TeachLivE “must be designed such that they engineer the desired instances of understanding” (Lindgren & Johnson-Glenberg, 2013, p 448). To design a PBTE, the four phases of learning need to be incorporated into TeachLivE as a mediation system that bridges the classroom learning and the systematic use of high leverage practices in clinical field experiences. The following components of the learning cycle of a PBTE program reflect this linkage. Figure 4 depicts the learning cycle with TeachLivE outcomes and edTPA tasks.
Representations of practice are experiences that help novices in a profession see and understand their future profession (Grossman, Compton, Igra, Ronfeldt, Shahan, Williamson, 2009). Previous technologically oriented uses of situated learning employed videos of practicing teachers to represent professional practice. In TeachLivE, the student-trainees see a virtual representation of a classroom with students, desks, bulletin boards, etc. If the laboratory accommodates the space, an entire class can observe a master teacher implement a lesson with the avatar students and then debrief to unpack the session. Through a ‘think-aloud’ master teachers can share their rationale for selecting specific core practices in response to avatar students’ behaviors. This dialogic process provides teacher trainees with a more transparent representation of practice.
Approximations of Practice

Approximations of practice allow teacher trainees to repeatedly try the more complex skills of the profession within a safe environment where they are coached and supported (Grossman, et al., 2009). Teacher trainees try out the high-leverage core practices in simulated scenarios; they receive feedback from their professors and peers from the simulated classroom. Feedback may occur during the simulation through bug-in-ear coaching (Elford, Carter, Aronin, 2013), in “freeze classroom” mode—where the trainees may step out of the simulation, acquire coaching, step back into the simulation and “start classroom” again—and in post-simulation instructional sessions. Teacher trainees may then self-reflect upon their experiences within TeachLivE after the coaching, challenging their previous assumptions and formulating future action plans based upon their experience and feedback (Kitychenham, 2008). Through this approximation of practice, teacher trainees are able to repeat complex, high-leverage practices within their context of use to gain confidence and mastery.

Enactment of Practice

Enactment of practice provides teacher trainees with opportunities to apply their pedagogical skills in classroom settings (McDonald, Kazemi, & Kavanagh, 2013). Teacher trainees use the knowledge and skills they gained through TeachLivE and apply them in the diverse field setting. If problems arise, the TeachLivE simulation lab provides a vehicle to remediate those skills. Coaching within TeachLivE can additionally be garnered from professionals in clinical settings and from school district personnel for practicing teachers. A student teacher’s mentor teacher or a practicing teacher’s supervisor or instructional coach may provide coaching before, during or after a TeachLivE session that specifically focuses on remediation of a high leverage practice. This practice supports university/school district partnerships.

Investigation of Practice

Investigation of practice entails reflection on action and the use of data as evidence of impact on student learning (McDonald, et al., 2013). Teacher trainees complete a teacher work sample such as the edTPA (SCALE, 2013) to analyze their planning, implementation, and impact on student learning. Each of these skills may be practiced or remediated in a TeachLivE simulation. Working with their mentor, the teacher trainees analyze their actions from recorded TeachLivE sessions and determine changes in practice based upon the evidence, coaching and the after session reflection. This investigation of practice completes and re-generates the pedagogical cycle as their analysis often points to the need for teacher trainees to further develop their high-leverage practices outside of the TeachLivE mixed reality immersion.

Conclusion

Ideally, teacher education programs will provide multiple clinical experiences that span years and milestones in learning as candidates learn to teach—from early field experiences to pre-student teaching field experiences, and then to the capstone experience of student teaching. Yet, virtual simulation experiences provide one more layer of situated learning experiences.
within a clinical setting that is not quite “real”, but that provides the feel of reality and immersion for the teacher education candidate. TeachLivE simulations situate the learning that will support subsequent clinical placements. Whether they are planning and implementing the pedagogy of a lesson or focusing on content, teacher trainees can use multiple forms of instruction within TeachLivE. McDonald’s, et al., (2013) representations of practice, approximations of practice, enactment of practice, and investigations of ground a practice based teacher education when TeachLivE simulations precede and occur simultaneously in clinical experiences in schools. In essence, TeachLivE enhances the clinical experience by providing a virtual situated learning environment with avatar students prior to clinical experiences with live students. When augmented with a focus on research based practices, mixed reality simulation experiences provide situated learning experiences prior to clinical experiences as part of Practice-Based Teacher Preparation Program.

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Using Virtual Reality Technology to Enhance Instruction in Teacher Education Programs
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Abstract

Teacher and administrator preparation programs are constantly looking for ways to effectively train preservice education professionals. Whether preparing special educators, bilingual educators, general educators, or school administrators, teacher education programs strive to provide these educators with experiences and content knowledge to best serve their own students. To enhance traditional coursework and field experiences, some educator preparation programs are using virtual reality technology (e.g., TeachLivE™) to increase their students’ ability to implement what they learn in an applied setting. A controlled environment, such as the TeachLivE™ laboratory, can provide an opportunity for training future teachers and administrators to use specific, evidence-based practices without the confounding variables found in applied settings. While training in a virtual environment should in no way replace training in an actual school setting, the predictability of such an environment can provide a chance to focus exclusively on selected skills and students can receive immediate feedback from a qualified observer. This paper details the way that professors have used and continue to use virtual reality technology at Texas Woman’s University to prepare special educators, bilingual/ESL teachers, and administrators.

Using Virtual Reality Technology to Enhance Instruction in Teacher Education Programs

Texas Woman’s University has been using virtual reality technology for nearly four years in classes ranging from introductory undergraduate courses in classroom management to graduate courses in educational leadership. While some students feel intimidated by the environment (and the immediate and specific feedback from their professors), the vast majority of students indicate that the experience is a positive one that they found helpful.

Initial usage of virtual reality technology at TWU focused mostly on introductory education courses within the Curriculum and Instruction program; students in those courses practiced lesson design and basic classroom management strategies during their TeachLivE™ sessions. During the past two years, though, TeachLivE™ has been used in some creative and effective ways across the other three programs in our Department of Teacher Education: Special Education, Educational Administration, and Bilingual/ESL Education. Below, we discuss details of TeachLivE™ application in all three of those programs.

Special Education

The Special Education program has used virtual reality technology at both the undergraduate and graduate levels. In our undergraduate course EDSP 4363: Behavior Management Strategies for Students with Disabilities, we had our students visit the TeachLivE™ lab twice during the semester. Each time, the students taught their choice of three lessons from
“Focusing Together,” a curriculum designed to foster self-management and classroom community (Rademacher, Pemberton, & Cheever, 2006). For both visits to the TeachLivE™ lab, the student had five minutes to teach a mini-lesson; then he or she would receive feedback from the professor. Having the opportunity to do the lesson a second time – after receiving feedback – was something the students reacted to positively. Their comments indicated that the experience was helpful and made them more confident about preparing to do their student teaching in future semesters. In addition, several indicated that the immediate feedback, while intimidating to some, was effective at focusing their attention on specific skills (e.g., speaking to each student, responding to errors with reteaching rather than reprimands).

During the last year, the Special Education program focused on using virtual reality technology at the graduate level. In our graduate course EDSP 5313: School-based Behavioral Interventions for Students with Disabilities, using the virtual reality technology presented a unique opportunity for interdepartmental collaboration. Graduate students from the Psychology Department, as part of their coursework in a class on behavioral assessment, were invited to take data on the students as they each taught a 15-minute lesson on “respect.” We selected a high rate of challenging behaviors for the session; the rationale was that many teachers – even those trained as special educators – are unprepared to deal with challenging behaviors in the classroom (Myers, Simonsen, & Sugai, 2012). Three specific teacher behaviors were targeted: praise, opportunities to respond, and prompting. The student data collectors tracked all special education students’ rates of these three behaviors; the data were graphed and shared with the special education students in subsequent classes. In addition, each student received immediate feedback after the session from the professor. In their self-reflections, the students noted that they were nervous and intimidated before their lesson in the lab (despite most of them having many years of teaching experience) but that they found the experience rewarding and helpful to their practice. Having the actual data to review was eye-opening for them; for many, their self-evaluation on the use of the target skills did not match the actual frequency of their use. This experience has become a vital part of the course, and we intend to keep it in the syllabus for future semesters.

Educational Administration

The Educational Administration program used virtual reality technology in its graduate course in professional development and supervision, a course where students learn the requisite skills an administrator needs in order to effectively supervise instruction. Over the past two years, students seeking either a master’s degree in educational leadership or certification as a school principal participated in the lab sessions. This group of 27 students was made up of classroom teachers, curriculum specialist, diagnosticians and one special education coordinator.

As a part of the class requirements, each student chose two teachers from his or her campus with whom to work on the following: pre conferencing, walkthroughs, and observations. Because teachers and administrators should work closely in order to have a common focus for evaluation and data collection (Dudney, 2001), this session gave students the opportunity to practice these skills in a virtual reality setting. Prior to working with their teachers in the field, students received instruction regarding supervision techniques in class and through additional readings and discussion focused on the entire cycle of supervision. Specifically, these classroom walkthroughs were designed as to provide feedback regarding teacher effectiveness with a focus on improvement in student achievement (Kachur, Stout, & Edwards, 2010). All coursework and
class discussions emphasized the importance of objective data and avoiding the use of subjective
terms and value statements.

During their virtual reality sessions, students were given the opportunity to conduct post-
conferences with “Mrs. Atkins”, the adult avatar. Over the course of two evenings, students
came prepared with post-conference notes from their first and second observations. Each
evening, the students interacted with Mrs. Atkins, provided feedback on her teaching, and
offered suggestions for improvement. After the first session, the class met to discuss the
experience and the professor offered feedback. Specifically, students were instructed to reduce
the amount of subjective feedback given and provide evidence-based objective feedback only.
Students were given a recorded copy of their interaction and asked to view and reflect on their
session.

During the next class session, the students conducted the second post-conference with the
same procedures in place. One notable change was the reduction in the amount of subjective
feedback the students gave to Mrs. Atkins during the post-conference. Students expressed a
greater understanding of the way to conduct a post-conference and the value of utilizing
evidence-based, data-driven language when providing feedback.

Students completed a post-assessment where they overwhelmingly indicated positive
learning occurred in the virtual reality lab. One student responded that the opportunity to “just go
for it” was beneficial and the only way to learn for her is to try. Overall, students indicated a
deeper understanding of the ways to provide objective feedback and how to conduct a post-
conference. Additionally, several students indicated that they were more confident about what to
look for in observations through these discussions with the teacher. Despite the opportunity to
practice in the virtual reality lab, students still expressed a need for additional opportunities to
work on these skills, as evidenced by one student’s comment: “I strongly agree that I am
prepared to conduct a post-conference, [but] I am also aware that this is a skill that I must craft
and recraft throughout my career. I have appreciated the ability to polish… chisel away the rough
edges.”

Educational Leadership students also utilize the virtual reality lab to practice difficult
conversations with teachers. Specifically, these discussions focus on non-renewal and teacher job
performance. Also, preservice administration students will practice communication skills with
parents by practicing high-stakes conversations, both parent- and school-initiated.

**Bilingual/ESL Education**

The Bilingual/ESL Education program used virtual reality technology in its courses this
year in several courses, including EDBE 3453: ESL Methods; EDBE 3113: Bilingual Education:
Applications and Materials, and EDBE 3643: Foundations of Bilingual Education. In ESL
Methods, preservice ESL teachers experienced TeachLivETM by working with the second-
language learners Edith, Tasir, and Edgar. In these classes, the TWU preservice teachers worked
with the Spanish-speaking (Edith and Edgar) and Arabic-speaking (Tasir) avatars to teach a
mini-lesson using research-based strategies from texts such as those highlighted in the user-
one lesson, students were expected to develop a lesson rooted in a content area such as math,
science, or social studies. In another lesson, students prepared and taught a content-based mini-
lesson rooted in literature. The lessons were exceptionally diverse, grounding activities in texts
ranging from the popular novel *Holes* (Sachar, 1998) to mathematical tales like *Spaghetti and
Meatballs for All: A Mathematical Story (Burns, 2008). Overall, these lessons were a learning experience for the preservice teachers. Many indicated they were surprised at how much they learned, despite having had reservations about working with what one future teacher deemed (in advance of his TeachLivE™ session) “fake students”. Following their experience with the TeachLivE™ students, the majority of preservice teachers reflected in a post-lesson analysis that they gained important insights regarding their own practice and aimed to make changes in the future.

In the bilingual education-focused course Bilingual Education Applications and Materials, the preservice teachers worked with the TeachLivE™ Spanish-speaking students to teach lessons and activities in Spanish—most of the students’ less dominant language. The purpose of this course is to develop students’ academic Spanish skills while preparing them to deliver lessons using Spanish.

In addition, these students had the opportunity to work with Spanish-speaking “parents” (using the adult avatar) in an effort to familiarize the preservice teachers with family-focused discourse relating to student behavior and management, as well as issues related to grades and curricular advice for parents. All parent meetings were conducted in Spanish providing the students an opportunity to use respectful language to appropriately explain various bilingual and ESL program models to an assumed monolingual Spanish-speaking parent. An ulterior motive in this TeachLivE™ session was to improve our future bilingual teachers’ skill in rapid-fire academic Spanish with students and parents in an effort to improve their fluency so they will be more successful on the new and very challenging state bilingual education certification exams. We expect to have data to support the positive impact of TeachLivE™ on students’ test scores in the near future. Overall, our bilingual education students have reported benefitting from the experiences in the TeachLivE™ lab.

Conclusion

In closing, we are excited about continuing to use virtual reality technology in our courses and hope to begin conducting research on its effectiveness in preparing preservice educators and enhancing the practice of in-service educators. One of our doctoral students is focusing on TeachLivE™ for his dissertation research, and several professors are using the technology to shape their own research agendas.

References


Abstracts
“Tag! You’re it:” Team-based approaches to urban preservice teacher learning in mixed-reality environments
Kristin Murphy
Janna Jackson Kellinger
University of Massachusetts Boston

Mixed-reality environments offer highly unique settings for preservice teachers to practice strategies they will use in their future work with students and parents, including the moment coaching from peers and professors, and the chance to rewind an experience and try it again after receiving feedback. In this presentation, two professors at a large urban university will discuss the various ways in which they have maximized learning opportunities provided by mixed-reality simulations in the Mursion Classroom, with student avatars, and Office, with an adult avatar, as part of three graduate preservice teacher courses. First, in a middle and secondary teaching methods course, groups designed a fifty-minute lesson with each member teaching a ten-minute portion of it back-to-back. Second, in a classroom management course, students tagged in for turns to lead different components of an instructional lesson that included student behavior challenges. Finally, in a special education law course, students on teams could tag in and out of consultations with a parent in preparation for, or after, an IEP meeting in the Mursion office. Along with tagging in and out, students across the courses were also able to use a scaffolded “remote control.” During their first experience, they could pause and rewind/retry simulations, in their second experience they could just pause to solicit suggestions and pick up from there, and in a final simulation they had to teach without any “remote control” options. The pros and cons of each method, including student feedback about their experiences, will be discussed in addition to implications for future implementation.

Meet Kindergarteners Martin & Monique!
Taylor Bousfield
Katie Ingraham
University of Central Florida

Be one of the first to meet and interact with our newest elementary avatars! You will meet Martin, our avatar with autism and Monique, from our very first generation. Give feedback for future development and have fun going back to Kindergarten!

Student’s Perceptions on Teaching
Amy Scheuermann
Scott Page
Minnesota State University, Mankato

In the fall 2012 Minnesota State University Mankato implemented TeachLivE™ with our initial teacher preparation program. Throughout the process we development and refined a survey instrument. The results of the past two years have indicated specific trends. The pre- and two post surveys indicated four primary trends in confidence; an upward trend, a downward trend, a level trend and finally a down followed by an upward trend. These trends were consistence over multiple items dealing with the teacher candidates confident in dealing with classroom management. Some of key items included creating classroom
environment of respect and rapport, establishing clear expectations for learning, and responding to students in a respective manner. This is supported by video and antidote evidence. Students are coming in to our Level II courses (two to three semesters prior to student teaching) over confident in their ability in working with and dealing with classroom management; they are typically more concerned about teaching the lesson and their content. Exposure and use of TeachLivE™ reveals their over confident and lack experience in working with students. The students begin to realize that it’s not always about the lesson, but the students. Future plans include gathering and analyzing additional data to determine the impact and modification needed for our program and instruction. One question that needs to be explored is there trends that appear in different content areas? A second question that we are exploring is, how does the experience transfer to their student teaching and/or field experience?

**Elementary Avatar Development Part Two**
- Katie Ingraham
- Taylor Bousfield
- University of Central Florida

We are growing from two to five! Be a part of the second developmental stages of the brand new elementary avatars! This collaborative session will allow you to share input about what you’d like to see in a virtual elementary classroom environment.

**TeachLivE™ from NY: It's SUNY Wide!**
- Karen N. Bell
- Sharon Raimondi
- Krista Vince-Garland
- State University of New York (SUNY)

Faculty at three colleges, Buffalo State, University at Buffalo and New Paltz, within the State University of New York (SUNY) system received a highly competitive SUNY Innovative Instruction Technology Grant (IITG) to bring TeachLivE to a wider SUNY teacher and leader education audience. Working with sister Schools of Education, training in the use of scenarios and funding to pilot their use is part of our development of a “play book” that will be available with tested simulations, lessons, and scenarios along with accompanying documentation for assessment and debriefing. As part of the grant, a set of short promotional videotapes will be completed for use in future funding requests.

Faculty across the SUNY System are using TeachLivE in a variety of programs, including Special Education, Secondary Education, Educational Leadership, Science Education and Elementary Education. At New Paltz, four programs are requiring students to enter into the simulator and practice their skills with either the middle school class or the adult avatar. These span a wide selection of content and pedagogy. Similarly, at Buffalo State those in teacher preparation programs including special education, general education, and science use the TeachLivE lab.
Using mobile equipment, faculty from Buffalo State and New Paltz have brought TeachLivE to over 10 SUNY campuses across the state. Using a regional approach they have conducted demonstrations for administrators, made presentations at conferences to share with colleagues how TeachLivE is being implemented in their programs, as well as piloting use with faculty at other SUNY campuses. Through the sharing of equipment and expertise, more candidates enrolled in SUNY teacher and leader education programs are benefitting from using TeachLivE as an enhancement to their clinical practice.

The Use of the Simulated Classroom to Train Teachers to Identify the Characteristics of Advanced, High-Ability and Gifted Learners From Impoverished Backgrounds and English Learners

Jillian Eriksson
University of Central Florida

Project ELEVATE (English Learner Excellence Evolving through Advanced Teacher Education) is a Jacob K, Javits Grant (USDOE #5206A150014) that addresses the need to identify and serve learners who have been marginalized through poverty, acculturation or being a linguistic minority. This presentation will share how TeachLivE has been used to address stereotypes, myths and misconceptions about the nature of ability, talent and giftedness using a case study approach with grade level teams at 5 Title I local schools. A key aspect of this is to clarify the assumptions made about high-achieving versus gifted learners using two Middle school avatars. The current project was implemented in 6 grade level teams (K-5) at each of the 5 Title I Elementary Treatment schools (180+ teachers). Data was collected from Teacher grade level teams who reached consensus on core questions and posted results to an online forum. Project ELEVATE is a collaboration between the University of Central Florida and Seminole County Public Schools.

English Language Learners' Classroom Participation Patterns

Joyce Nutta, University of Central Florida
Sultan Turkan, ETS

This presentation aims to provide a discussion about English learner-specific classroom participation patterns that would be significant to account for in educating future teachers of English learners (ELs) in elementary grades. The discussion will be facilitated by the presentation of findings from a survey that aimed to identify and verify EL-specific participation patterns with the teachers of English as a second language (ESL). The survey included 26 EL-specific linguistic and non-linguistic behaviors when ELs are reacting or responding to a teacher question or statement. A convenient sample of 77 ESL teachers participated in the survey. The participating teachers rated the degree to which each behavior was specific to ELs who are neither true beginners nor advanced in English language skills at the elementary grades. The results survey revealed the rating of the following EL-specific behaviors as most common: 1) mixing verb tenses, 2) using plurals incorrectly, 3) using an incorrect word that sounds similar to the intended word, 4) making pronunciation errors, 5) mixing gender pronouns, 6) repeating pronouns incorrectly, 7) using same part of speech twice, 8) using idiosyncratic language, 9) getting stuck. The presentation will discuss the implications of these findings for educating
future teachers of ELs in elementary grades. The presenter will also discuss how these findings might be useful in designing EL-specific participation behaviors in simulated classroom environments.

**Using the TeachLivE Classroom to Improve Behavioral Observation Skills in Preservice Teachers**

Shannon Budin  
Krista Vince Garland  
SUNY Buffalo State College

Given the numerous demands for a teacher’s time and attention in a classroom, they must be fluent in their ability to observe, monitor, and record student progress. A teacher who can engage in immediate and direct observation of student behavior is better able to understand the function of the behavior, as well as validate the effectiveness of an intervention or instructional practice (Adamson & Wachsmuth, 2014; Salvia, Ysseldyke, & Witmer, 2013). Teacher education programs must ensure that preservice teachers (PTs) are well prepared to engage in the various methods of conducting direct observations and illustrate that it “can be done” despite time constraints or other competing challenges in the classroom (Jasper, Hunter, & Collins, 2015). Specific training and opportunities to use and practice direct observation skills are vital for carryover and generalization in the classroom.

In an effort to teach direct observation skills in a purposeful and scaffolded manner, we used a guided practice model of instruction. PTs were provided with an opportunity to identify, operationally define, and practice collecting observational data on challenging behaviors in the TeachLivE simulated classroom. During the simulation, PTs observed problem behaviors in the classroom and identified appropriate data collection instruments to practice their direct observation skills. After Action Review (AAR) sessions were used to debrief on the effectiveness of data collection procedures, accuracy of operational definition, and to calculate inter-observer agreement (IOA) with fellow observers. Modeling, guided practice, and multiple opportunities to practice with feedback were essential to build fluency in these skill areas. PTs engaged in a pre and post-simulation survey emphasizing the phenomenological aspects of their experience in the TeachLivE lab, including comfort level with various direct observation skills and IOA procedures. Survey results indicated significant differences in their perceived “comfort level” in all areas (e.g., operationally defining, recording behavior, calculating IOA, etc.) from before to after the practice session in the lab.

**Select References**

