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Mixed Reality Experiences in the M.Ed. Educational Leadership Program: Student Perceptions

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MIXED REALITY EXPERIENCES IN THE M.ED. EDUCATIONAL LEADERSHIP PROGRAM: STUDENT PERCEPTIONS

by

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ABSTRACT

The purpose of the study was to ascertain the perception of students in the M.Ed. in Educational Leadership program of mixed reality experiences using TeachLivE™ in preparation for the challenges of school leadership. 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 time communications with parents and teachers.

The study encapsulates the perceptions of the master's degree in educational leadership students through the following research questions: (a) To what extent, if any, do Educational Leadership M.Ed. students believe the TeachLivE™ 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 TeachLivE™ coaching feedback was helpful in developing their communications skills with parents and teachers? (c) To what extent do student reflections of the TeachLivE™ experience indicate it is beneficial in increasing skill in communicating with parents and teachers immediately following the mixed reality simulation? (d) To what extent do Educational Leadership M.Ed. students perceive the TeachLivE™ 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?

Students from the college of education in a large university participated in the study ($N = 141$). Results show a high-perceived value of the simulation experience and the coaching and feedback in the development of administrative conferencing and communication skills. Descriptive statistics used to answer the research questions show the highest mean for the perceived value of the coaching and feedback, close to "strongly agree", from parent conference participants ($M = 4.86$), followed by teacher conference participants ($M = 4.76$).

Responses for the simulation being beneficial from parent conference participants were also high ($M = 4.71$), close to "strongly agree" and from the teacher conference participants between agree and "strongly agree" (4.59). The perceptions of the simulation being realistic practice were between "agree" and "strongly agree" with parent conference were ($M = 4.63$) and teacher conferences ($M = 4.46$).

The participant perceptions for the simulation being helpful in building confidence in communication skills was between "agree" and "strongly agree" for the parent conference ($M = 4.41$) and close to "agree" for the teacher conference ($M = 4.14$).

Participant responses at the conclusion of the internship in practice indicated high value of the mixed reality simulation with mean scores between "agree" and "strongly agree", in relation to the experience was beneficial to the development of speaking confidence when conferencing with parents ($M = 3.57$), and the coaching feedback was helpful ($M = 3.56$). Responses were consistent in rating between "agree" and "strongly agree" for program continuance immediately following the simulation ($M = 4.62$), and after the internship ($M = 3.67$).

Recommendations of the study were to ensure that all students have access to the authentic practice model provided by the TeachLivE^{TM} mixed reality simulation lab through identified target courses. In addition, it was recommended that more practice opportunities are integrated into the program. These additional experience should include multiple opportunities within the same target courses, as well as investigate additional course work within the Educational Leadership M.Ed. program to integrated the mixed reality simulation to practice specific leadership skills. A final recommendation of this study was to provide opportunities for students to schedule additional practice time in the lab to improve personal professional practice. These recommendations will support the continued development of administrative communication skills of Educational Leadership M.Ed. students, through accurate, realistic and complex situational practice.

This dissertation is dedicated to my parents, Mike and Mary Ellen, my role models in life.

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LIST OF ACRONYMS AND ABBREVIATION

AMITIES. *Avatar Mediated Interactive Training and Individual Experience Systems*

CASA. *Computers Are Social Actors*

ERIC. Education Resources Information Center

FCEM. Florida Council on Education Management

MOOC. *Massive open online course*

NASSP. National Association of Secondary School Principals

NCES. National Center for Education Statistics

CHAPTER ONE: THE PROBLEM AND ITS CLARIFYING COMPONENTS

Introduction

The use of multimedia and virtual environments is an emerging resource utilized to prepare individuals in the fields of medicine, avionics, military, and educator preparation programs, providing realistic practice in academic settings (Dieker, Grillo, & Ramlakhan, 2012). The use of avatars and virtual teaching environments provide authentic practice opportunities, without impacting real students, and through reflection, feedback, and coaching, educators can improve their professional practice (Dieker, Hynes, Hughes, & Smith, 2008).

The University of Central Florida began incorporating the mixed reality resource, TeachLivE™, as a practice tool in the Master's of Education (M.Ed.) in Educational Leadership program, during the fall semester of 2013. Two different experiences were provided during courses focusing on supervisory practices and community engagement: a parent conference and a post-observation conference with a teacher. By utilizing the mixed reality technology of TeachLivE™, school leadership situational practice of parent conferencing and teacher conferencing are available to all aspiring leaders.

As a standard component of the mixed reality practice, side by side coaching is intended to scaffold students through guided practice prior to the independent administrative internship experience. The power of the sequencing of instruction through scaffolding is the guided and independent practice models, using realistic practice with students (Taylor, 2010).

Problem Statement

New school leaders are expected to make sound instructional leadership decisions and interact professionally with stakeholders from day one. As such, Educational Leadership M.Ed. students need opportunities to role-play school administrator situations to transition theoretical knowledge into practice. Realistic practice models with coaching feedback, simulating communication with parents and in providing feedback to teachers in an administrative capacity facilitate skill development before students enter an in-field administrative internship. Without intentional guided practice with feedback, M.Ed. students may enter the administrative internship with limited or no experience in administrative-like conferencing with parents or teachers.

The problem studied was how does the use of mixed reality virtual practice, with immediate feedback and coaching, prepare educational leadership master's level students for real communications with parents and teachers. Situated learning requires both content accuracy and complexity of practice (Rees Dawson & Lignugaris-Kraft, 2013). The use of peer modeling and role-playing among peers is not consistently effective; dependent on the skill set and comfort-level of students with role-playing, leniency, and realistic practice opportunities (Rees Dawson & Lignugaris-Kraft, 2013). Utilizing technology to create more realistic experiences for educational leadership students to practice school leadership communication skills increases the learning of the future school leader.

Purpose Statement

The purpose of the study was to ascertain the perception of students in the M.Ed. in Educational Leadership program of mixed reality experiences using TeachLivE™ in preparation for the challenges of school leadership. Additionally, the study sought to determine the perceived value of the coaching feedback received immediately following the mixed reality experiences. During the final semester of the M.Ed. program culminating with an administrative internship, the perceived value of the mixed reality experience and coaching feedback was also determined.

Definition of Terms

For the purposes of the study, the researcher defined terminology related to the virtual practice and coaching model as it relates the use of technology to enhance situational practice performances. The definitions are prevalent in the academic vocabulary related the simulation situations experienced by the educational leadership candidates participating in the study.

Avatar mediated interactive training and individual experience systems (AMITIES). The human in the loop experiences of mixed reality practice create an environment place illusion and situational plausibility as the platform for the learning (Hughes, 2014; Slater, 2009; Blascovich & Bailenson, 2011; Okita, Bailenson & Schwartz, 2008).

Avatar: An avatar is a virtual representation of a person in computer-mediated environment controlled by humans. The locus of control from the interactor creates

human-like mannerisms in the avatar giving them unique capabilities to influence users. (Fox, Ahn, Janssen, Yeykelis, Segovia, & Bailenson, 2014).

Coaching. The goal of providing coaching is to shape behavior by observing performance, practice or real, offering guidance through questioning and discussion, and providing feedback with specific recommendations to enhance future performance (Owens & Valesky, 2011). Coaching is most effective in high task, high relationship situations where the followers are receptive to learning in Hersey's situational leadership model as cited by Bolman and Deal (2008). Frank Dance and Carl Larson cited by Hackman and Johnson in Wren (1995) identify three functions of communication skills, of which the third is specifically utilized in coaching, "human communication allows for the regulation of our own behavior as well as the behavior of others" (pp. 428-229).

Computers Are Social Actors (CASA). The application of social rules and dynamics that guide human-to-human interaction to situations in which the human is interacting with a computer (Nass, Fogg, & Moon, 1996)

Interactor Performance. Interactor performance combines traditional acting techniques, improvisation, interpersonal persuasion, and storytelling skills, through a mixed reality interface, that centers on a single user during a virtual rehearsal. All theatrical choices of the actors should be driven by the responses and actions of the single user (Hughes, 2014).

Interactor. An interactor is an actor trained in improvisation, interactive performance, story, and technology. Working through an avatar, the interactors' goal is

to empower participants in the simulated environment of TeachLivE™ to role-play a fictional narrative as it related to a given scenario (Interactor Simulation Systems, 2014).

MOOC. *Massive open online course* distance learning opportunities to provide expanded access and enrollment of course content at a cost saving delivery method (Li, Kizilcec, Bailenson and Ju, 2015).

Mixed Reality Environment. The use of live time avatar situational practice combines, "real and virtual worlds, providing users with a sense of presence or immersion. Users perceive the virtual experience as an authentic environment in which they can take action, much like the real world" (Dieker, Straub, Hughes, Hynes, & Hardin, 2014, p. 57).

Role-play. Interacting in fictional situation, in which a participant practices controlling a character through actions, talk and engagement with others (Williams, Kennedy, and Moore, 2011).

Virtual Rehearsal. Practicing verbal and non-verbal communication through the use of technology to simulate human-to-human interaction. From the user's perspective, the perception of human interaction affects whether a virtual representation is successful at influencing the users behavior during the rehearsal (Fox et al., 2014). Allport (1995), as cited by Fox et al. (2014), suggests that human action and psychological experiences are shaped by the actual, imagined and implied presence of others. Utilizing mixed reality simulations, the belief one has in the participation of a social interaction improves learning (Okita, Bailenson, & Schwartz, 2008).

Assumptions

1. In this analysis it can be assumed that participants were engaged in the simulation as a learning experience.
2. In this analysis it can be assumed that the participants provided honest responses.
3. It can be assumed that the preparation of students for the experience and the coaching was as similar as possible for each participant.

Limitations

The study has the following limitations:

1. The survey scores do not represent actual preparedness of the participants to successfully engage in parent and teacher conferencing in real situations.
2. Participants' academic performance in the two target courses during the timeframe of the study was not a consideration of data collection, only perception of preparedness.
3. The population was specific to individuals enrolled in educational leadership M.Ed. program at the University of Central Florida from August 2013 through May 2015.
4. Neither the researcher nor the instructor evaluated participant performance during the simulation.
5. The sample population was drawn from a single university; therefore, results may not be generalizable to all universities.

Delimitations

For the study, the researcher only analyzed data from the TeachLivE™ Educational Leadership Parent Conference Simulation Feedback survey and the TeachLivE™ Educational Leadership Teacher Conference Simulation Feedback surveys following the simulation and the Educational Leadership Exit Survey completed at the conclusion of all coursework for the M.Ed. in Educational Leadership at a single university. Generalizability of the results to other university programs in educational leadership may be limited due to variations in coursework, variations in instructor delivery of content, access to technology, and practice opportunities. Furthermore, since both surveys completed by study participants were deidentified, results from the data analysis represents sample group perceptions of preparedness, not the changes in perception of individuals, over time, as a result of lived experiences communicating with parents and teachers as a school administrator.

Conceptual Framework

The Management Training Act of 1985 and the establishment of the Florida Council on Education Management instituted the 19 Principal Competencies that were to be used by school districts for hiring and evaluation purposes of current school leaders, as well by universities as a framework for educational leadership programs (State of Florida, 2014).

Leadership Standards

The Interstate School Leaders Licensure Consortium (ISLLC) policy standards of 1996 were designed to provide a foundation for states in the implementation of best practices in educational leadership that reflect 21st century learning. The standards were reviewed and revised in 2008 as Educational Leadership Policy Standards that define; (a) vision for learning, (b) development of a school culture conducive to student learning, (c) effective management as it relates to a safe, efficient and effective learning environment, (d) collaborations with faculty and community members responding to community needs, (e) acting with integrity, fairness and in an ethical manner, and (f) responsive to the political, social and legal aspects of school culture (Council for Chief State School Officers, 2013, p. 6). These standards are essential in the development of effective pre-service and job embedded programs for principals (Council for Chief State School Officers, 2013).

The research based Florida Principal Leadership Standards define the core expectations for school leadership within four domains and ten standards (State of Florida, 2014). Under the authority of Section 1012.986 F.S., the Florida administrative code (6A-5.081) outlines the required components for universities in Florida to obtain approval for an initial certification, Level 1, educational leadership program to prepare aspiring leaders desiring to become future school administrators. Level I programs must include field experiences in collaboration with public schools in which the candidate must demonstrate application of the required Florida Principal Leadership Standards (FPLS) competencies (State of Florida, 2014).

Coaching

In addition to a field experience, Florida Principal Educational Leadership development programs must include the critical components of the William Cecil Golden School Leadership Development Program that specifically address ongoing mentoring and coaching. The state approved Level I Educational Leadership M.Ed. program at the University of Central Florida provides a theoretical and conceptual framework through coursework, and documentation of 200 hours of field experience prior to the beginning of the internship. The internship is independent learning that takes place in authentic settings; learning documented through application, reflection and refinement of knowledge and skills acquired in the program (University of Central Florida, 2013).

Coaching is a shaping of behavior by observing performance, offering guidance, as well as recommending specific practice to emphasize (Owens & Valesky, 2011). In a review of over 8,000 studies, feedback is determined to be the most powerful single modification that enhances student performance and deep learning (Hattie, 2009). To be most impactful, the feedback must have two characteristics; it must be timely and specific and be intended to reduce discrepancies between current performance and concept understanding and the intended learning outcome (Hattie, 2009). While engaging in leadership communication skills practice, students need timely and specific feedback. Coaching at the conclusion of the virtual rehearsal provides an opportunity for feedback with the intent to close the gap between performance and the desired goal. John Hattie describes an effective model of feedback (Hattie, 2009), which includes (the goal), feedback (the result), and feed forward (next steps). By utilizing this feedback model, the

learner is able to self-evaluate the level of understanding of the initial task, the plan of action, the execution of the plan, and self-regulate future related actions based on the feedback, increasing fluency and mastery (Hattie & Timperley, 2007; Hattie, 2009).

Mixed Reality

Moving from theory to practice, scaffolding instruction, the university's use of virtual rehearsal creates a safe environment to provide rich environments in which the learner can experiment with the content without risk provides opportunities to make curricular connections and deep reflective practice. The use of mixed reality environment in which the avatar has a human like image with high behavioral realism facilitates the practice to elicit a more natural reaction and interaction during the rehearsal, creating a social influence on the student (Fox et al., 2014). The use of virtual rehearsal environments with side-by-side coaching and feedback maximizes the opportunity for students to improve future performance. The simulation lab is a safe environment where errors can be used as learning opportunities and by providing feedback participants can self-correct fluidity of responses, and correct course of actions (Hattie, 2009). Utilizing the Blascovich (2002) model of social influence, the feeling of human presence with the avatar creates a realistic social presence and influence, which enhances the virtual rehearsal with rich sensory feedback and realistic behaviors, allowing the interaction to be authentic practice.

Research Questions

The study encapsulated the perceptions of the master's degree in educational leadership students through the following research questions.

1. To what extent, if any, do Educational Leadership M.Ed. students believe the TeachLivE™ parent conference and teacher post observation conference simulation experiences to be helpful in developing their communications skills with parents and teachers?
2. To what extent, if at all, do Educational Leadership M.Ed. students believe the TeachLivE™ coaching feedback was helpful in developing their communications skills with parents and teachers?
3. To what extent do student reflections of the TeachLivE™ experience indicate it is beneficial in increasing skill in communicating with parents and teachers immediately following the mixed reality simulation?
4. To what extent do Educational Leadership M.Ed. students perceive the TeachLivE™ 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?

Table 1

Research Questions and Data Sources

	Research Questions	Data Sources
1	To what extent do Educational Leadership M.Ed. students believe the TeachLivE™ parent conference and teacher post observation conference simulation experiences to be helpful in developing their communications skills with parents and teachers?	TeachLivE™ Educational Leadership Parent Conference Simulation Feedback (Appendix A) TeachLivE™ Educational Leadership Teacher Conference Simulation Feedback (Appendix B)
2	To what extent do Educational Leadership M.Ed. students believe the TeachLivE™ coaching feedback was helpful in developing their communications skills with parents and teachers?	TeachLivE™ Educational Leadership Parent Conference Simulation Feedback (Appendix A) TeachLivE™ Educational Leadership Teacher Conference Simulation Feedback (Appendix B)
3	To what extent do student reflections of the TeachLivE™ experience indicate that it is beneficial in increasing skill in communicating with parents and teachers immediately following the mixed reality simulation?	Instructor Reflection Assignment following the mixed reality experience
4	To what extent do M.Ed. in Educational Leadership students perceive the TeachLivE™ 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?	Educational Leadership Exit Survey positive response to item 7.21 and preceding responses 8-10. (Appendix E).

Methodology

The study analyzed the perceptions of the Educational Leadership M.Ed. students through a mixed method study. An analysis of the research subject responses to two surveys was conducted: the survey completed immediately after the mixed reality experience and the survey questions completed at the end of their internship and

coursework. Student reflections provided by the course instructors on the experience were analyzed using a qualitative methodology.

Procedures

The mixed reality experience is part of the scaffolded instruction process taking theoretical research based knowledge, and providing specific targeted skills practice before entering into live situations during the required administrative internship. The researcher and faculty collaboratively developed scenarios, which the interactor and the students reviewed in preparation for the experiences. For each of the two virtual rehearsals students received immediate coaching from an expert who gave feedback, relating the practice simulation to course objectives in communication. Upon completion of the mixed reality experience, students completed the course specific survey, found in Appendix A and Appendix B. At the direction of the course instructor, students wrote a reflection on the experience and submitted it to the course instructor as part of a course requirement to document the experience. The instructor deidentified the reflections and provided them to the researcher.

The researcher secured lab times from TeachLivE™ at least three weeks prior to the mixed reality practice, and provided a copy of the scenarios for the interactor to review. Research subjects received a 10-minute orientation to the TeachLivE™ experience during class and were provided a copy of each of the four possible scenarios (Appendix C & Appendix D).

Subjects signed up in pairs for 30 minute blocks in the simulation lab. During the reserved time period, each subject received 10 minutes of TeachLivE™ interaction time and five minutes of immediate feedback and coaching. On the designated date and time of the mixed reality session, each student observed the partner's aforementioned session. Faculty and the researcher assumed the role of coach and provided just-in-time feedback/coaching at the conclusion of the 10-minute interaction. As research subject groups exited the simulation lab, perception surveys were distributed and collected by the researcher prior to the subjects leaving the facility

Population and Sample

The population of the study comprised Educational Leadership M.Ed. students at the university between Fall 2013 and Spring 2015. The sample consisted of students (*N* = 141) enrolled in face-to-face sections of Educational Supervisory Practice II (EDS 6130) and Community School Administration (EDA 6300).

Ecological generalizations (Fraenkel et al., 2012) can be made from the sample extending the results of the study to other settings; all Educational Leadership masters programs contain courses that address parent communication and teacher observation conferencing. In addition, the findings should be extended to include preservice and in-service professional learning in which authentic practice is necessary before facing real-world, high-stakes communications with students and parents. One significant limitation of the ecological generalization is the consistency of content and delivery models of the instructors within the university as well as among other universities.

The convenience sample ($N = 141$) includes Educational Leadership M.Ed. students, in courses where the virtual rehearsal was a course practice option.

From this convenience sample, research subjects completed the survey at the end of the mixed reality experience. For the purposes of research question four, the sample was further limited to the number of participants that competed the internship and responded to the items on the exit survey.

Instrumentation and Sources of Data

Data sources in the study include qualitative and quantitative data collected from self-report instruments containing a behavioral rating scale (Frankel, Wallen, & Hyun, 2012), asking participants to judge personal attitudes of the benefit of the practice experience. Respondents rate each item on a five point Likert scale. Each response was assigned a numerical value and the total score was presumed to indicate the attitude or believe in question (Frankel et al., 2012).

Educational Leadership Simulation Feedback

The TeachLivE™ Educational Leadership Parent Conference Simulation Feedback survey and the TeachLivE™ Educational Leadership Teacher Conference Simulation Feedback survey instruments were designed in collaboration with university educational leadership faculty and the researcher to ascertain the research subjects' perceptions of preparedness for real world teacher and parent communications after experiencing the mixed reality virtual practice. The instrument items common for each

mixed reality experience are: (a) “As a result of this simulation, I feel more confident in speaking with (parents/teachers)”, (b) “The simulation was helpful and should continue to be included in the M.Ed. program”, (c) “The simulation was realistic”, (d) “This simulation was beneficial”, (e) “The coach’s feedback was helpful”, and (f) “Share any additional comments that you may have in the box provided”. Unique to the teacher conference instrument, subjects were asked if after the simulation, to rate, “I feel more comfortable setting improvement goals with a teacher”. Each item is rated by the subject on a five point Likert scale: strongly disagree (1), disagree (2), neither agree nor disagree (3), agree (4), strongly agree (5), and no answer/not applicable (n/a).

Reflection

In addition to the perception survey completed immediately following the mixed reality practice, the course instructor assigned reflections on the experience and provided de-identified copies to the researcher to include in the qualitative data at the conclusion of each semester.

End of Administrative Internship Survey

All subjects were required to complete field experience hours in the form of an internship after completion of core content coursework. After completion of a two-semester administrative internship and practice with teachers and parents the Educational Leadership M.Ed. students completed an electronic Educational Leadership Exit Survey in which four items related to TeachlivE™ have been included. This self-reporting instrument contains a behavioral rating scale asking participants to judge personal

attitudes using a Likert scale in which each item was given a numerical value, and the total score is presumed to indicate the attitude or believe in question (Frankel et al., 2012). A positive response to the first survey item, "I participated in an experience in TeachlivE™ while in the educational leadership program", activates the three additional survey items; a) Participation in a TeachLivE™ observation feedback conference simulation increased my effectiveness in giving feedback, b) Participation in a TeachLivE™ parent conference increased my effectiveness sin communicating with parents, and c) I recommend that the faculty continue the use of TeachLivE™ before the students participate in experiences in real time (Educational Leadership Exit Survey, 2014). Each item has a 4-point Likert scale; (a) strongly disagree, (b), Disagree, (c) Agree, (d) Strongly Agree. This survey can be found in Appendix E.

Data Collection

The researcher began collecting qualitative and quantitative data Fall Semester, 2013 and continuing through Spring Semester, 2015. The data document students' perceptions of the value of the TeachLivE™ experience and the coaching feedback to provide authentic virtual rehearsals as a future school administrator in the two experiences: communicating with parents and teachers through conferencing.

Data Analysis

The study focused on the use of the adult avatars as a tool to coach aspiring school leaders enrolled in the Educational Leadership M.Ed. program to practice

conferencing skills as a school administrator; specifically focused on the perceptions of preparedness by the graduate students. Perceptions are collected during specified course, prior to entering the required internship portion of the school leadership program. In addition the researcher collected perceptions of the benefits of the simulated practice, and the reality of the simulated practice after the completion of the leadership internship experience. In this mixed method study, the quantitative Likert scaled data were collected from three perception instruments (a) Educational Leadership Teacher Post Conference Simulation Feedback, (b) Educational Leadership Parent Conference Simulation Feedback, and (c) Educational Leadership Exit Survey.

Table 2

Survey Questions

Construct	Post Observation Conference	Parent Conference	Program Exit Survey
Simulation was realistic	x	x	
Coaching feedback was helpful	x	x	
Feel more confident in speaking	x	x	
Simulation was beneficial	x	x	
Simulation should continue	x	x	x
Confidence in setting goals with teachers	x		
Simulation increased effectiveness in giving feedback			x
Simulation increased effectiveness is communication			x

Note. 5-point Likert Scale, five most positive ranking

The qualitative methods of the study include the responses to open ended items on the survey both immediately following the simulation practice, and the faculty assigned reflections. Reflection responses provided to the researcher by course instructors were read for the purpose of identification of preliminary themes and patterns (Frankel et al., 2012). Responses were reread and specific content was organized into themes, coded for analysis (Bowen, 2009).

Significance of the Study

The study is significant as it relates to the contribution of practice model selection in the preparation of school leaders, specifically at one university that may inform those in other universities investigating authentic practice models for students. Providing

authentic practice prior to entering the internship, Educational Leadership M.Ed. students have opportunities to demonstrate understanding and mastery of the Florida Principal Leadership Standards (State of Florida, 2014).

Organization of the Study

The study is reported in five chapters. Chapter 1 provides an overview. Chapter 2 is a review the literature and research. Chapter 3 and 4 contain the methods and procedures and the analysis of the data. The fifth and final chapter presents a summary of the data, implication for policy and practice, and recommendations for future research.

CHAPTER TWO: LITERATURE REVIEW

Introduction

The following review of literature illustrates the rationale for further research on the development of administrative communication skills among Master's degree students in Educational Leadership through simulated practice. The following review represents the literature that pertains to research of school leadership preparation development, the use of mixed reality simulations for professional skill practice, the perceived value of coaching and feedback, and the perceptions of preparedness to communicate with stakeholders in and administrative role during the internship in relation to the simulated practice. The review of literature is intended to provide a historical background, and to describe the current status of research pertaining to the development of communication skills through (a) technology to create simulations for authentic practice, (b) immediate coaching and feedback, (c) reflection on practice, and (d) reflection on internships as a result of the authentic practice feedback.

The conceptual framework revealed variables critical to the success of educational leadership development programs. A comprehensive review surrounding these key elements is presented to establish the need for continued research on the use of mixed reality simulations to provide authentic practice to aspiring school leaders prior to engaging in real experiences through field experience or internships. Specifically, Chapter 2 is organized into five sections: (a) instructional leadership standards, (b)

practice, (c) mixed reality in education, (d) coaching and feedback, and (e) reflection and self-regulation.

The data search for this review of literature was compiled using resources found in the University of Central Florida Library system. The Internet was used to locate websites for the literature review through professional literature databases. The databases include: Education Full Text, Education Resources Information Center (ERIC), National Center for Education Statistics, EBSCO, PsycInfo, Science Direct, UCF Onesearch, Web of Science, Dissertations & Theses Full Text, and LexisNexis Academic. The key words used to complete the search of literature included: coaching, feedback, simulation, avatar, mixed reality, teacher education, internships, school administration, principals, educational leadership, practice, coaching, feedback, perceptions, principal leadership standards, instructional leadership, and reflective practice. A search of the book collection at the University of Central Florida library was also conducted using the key terms: educational leadership standards, reflective practice, mixed reality, coaching and feedback. Information relative to the study was included and referenced throughout the literature review. Research from the Internet included in the study from websites such as Florida Department of Education, The State of Florida Legislature, The Wallace Foundation, Council of Chief State School Officers and the University of Central Florida College of Education and Human Performance. Articles not directly related to school leadership programs, or to the field of education were used in the literature review, and included the research on technology to provide realistic practice learning experiences to improve professional skills. A gap in the literature as it relates to the use of mixed reality

simulation in education supports the need for additional research on standards based authentic practice with coaching, feedback and reflection in educational leadership preparation programs.

Leadership Standards

The work of educators has many routine events, consistent across all levels of education with an expected standard of accountability where theories related to the practice can be incorporated into educational leadership development programs. However, a large portion of the professional time of a school leader is responding to the social, emotional and academic needs of students, and families (Dotger, 2015). The development of effective administrative communication skills is necessary for school leaders to address non-routine events with school staff and community stakeholders (Nolan & Hoover, 2011). Leadership development programs should be standards based, job-embedded and focused on student achievement. The emphasis of such programs should include reflective practice, peer-to-peer discussion and solving problems as well as coaching and mentoring (Sparks & Hirsch, 2000). Leadership development programs should prepare leaders to develop a balance of creating a positive school culture, while challenging students, staff and community stakeholders to purse high academic standards (Walters, Marzano, & McNulty, 2003; Hallinger & Heck, 1996; Hallinger, 2003; Hallinger & Heck, 2009; Hallinger, 2009).

Conferencing and communication skills are evident in both the national and state educational leadership standards. A meta-analysis of more than 5,000 studies over thirty

years, (Walters et al., 2003) examined the effects of a school leader on student performance. Twenty-one specific leadership responsibilities were identified as having significant impact on student achievement. Of the identified responsibilities, six were directly or indirectly related to an instructional leader's ability to effectively communicate ($r = .25$). These responsibilities were, (a) fostering a shared belief system of community and cooperation, ($r = .29$), (b) high quality interactions with students and faculty ($r = .16$), (c) establishes strong lines of communication with teachers and students ($r = .23$), (d) advocates as a spokesperson for the school and stakeholders ($r = .28$), (e) communicates and operates from strong beliefs about schooling ($r = .25$), (f) ensures faculty and staff are aware of current educational best practices and integrated into regular communication, and (g) school culture ($r = .32$; Walters et al., 2003). Additionally, leaders can have a marginal to negative impact on student achievement when leaders are focused on ineffective classroom practices or when ineffective at implementing desired change (Walters et al., 2003).

Research conducted by Halawah (2005) found a relationship between students' perceptions of school climate, the teachers' perceptions of leadership communication skills of the school leader and a positive school climate. An analysis of variance was used to analyze teachers survey responses; the results were significant, $F(5, 169) = 19.36$, $p < .001$, indicating schools were different in level of principal communication effectiveness (Halawah, 2005).

The Interstate School Leaders Licensure Consortium (ISLLC) policy standards of 1996 were designed to provide a foundation for states in the implementation of best

practices in educational leadership that reflect 21st century learning. The standards were reviewed and revised in 2008 as Educational Leadership Policy Standards that define six standards that are essential in the development of effective pre-service and job embedded programs for principals The importance of effective communication was highlighted in four of the six standards, (a) Standard 2: the development of a school culture conducive to student learning; (b) Standard 4: collaborations with faculty and community members responding to community needs; (c) Standard 5: acting with integrity, fairness and in an ethical manner; and (d) Standard 6: responsive to the political, social and legal aspects of school culture (Council for Chief State School Officers, 2013, p.6). Successful instructional leadership programs include instruction on and practice with active learning and listening strategies, an emphasis on a rigorous internship experience, and quality mentoring and coaching (Perez, Uline, Johnson, James-Ward, & Basom, 2011).

Lehigh University and the School District of Philadelphia through a structured cohort model educational leadership program, conducted research to verify the link between educational leadership program preparation and learning through self reported perceptions of preparedness to obtain and be successful in an administrative position (Haung, Beachum, White, Kaimal, Fitzgerald, & Reed, 2012). An alignment was developed between the ISLLC 2008 standards and the NASSP's twenty-first century leadership skills.

Results reported by cohorts of program graduates, were the result of responses to a self-rated Likert instrument, measuring perceived preparedness as well as NASSP assessment results after completion of the program specifically measuring leadership

practices. The leadership practices identified in the study, including oral communication skills, were seen as critical to school effectiveness and impact on increased student achievement.

Table 3

ISLLC 2008 and NASSP Leadership Skills Association

ISLLC Standard	NASSP Oral Communication	NASSP Written Communication	NASSP Strengths and Weakness
1: An educational leader promotes the success of every student by facilitating the development, articulation, implementation, and stewardship of a vision of learning that is shared and supported by all stakeholders	X	X	
2: An educational leader promotes the success of every student by advocating, nurturing, and sustaining a school culture and instructional program conducive to student learning and staff professional growth	X	X	X
4: An educational leader promotes the success of every student by collaborating with faculty and community members, responding to diverse community interests and needs, and mobilizing community resources		X	
6: An educational leader promotes the success of every student by understanding, responding to and influencing the political, social, economic, legal and cultural context	X	X	

Likert scale survey items had a maximum value of five. Study results report the following perception of preparedness based on leadership program content: (a)

engagement of parents and community for program participants (M = 4.39) and for program graduates (M = 3.87), and (b) how to lead organizational learning for program participants (M = 4.27) and for program graduates (M = 4.05). Each skill dimension measured by the NASSP had a maximum score of thirty. Participants' results on the NASSP exam were lower in all areas as compared to self-perception scores; mean scores for oral communication skills (M = 20.03), written communication (M = 13.47) and written communication (M = 13.19; Huang, Beachum, White, Kaimal, Fitzgerald, & Reed, 2012). In correlating relationships between program components and dependent measures of sense of preparedness in core leadership dimensions, a relationship emerged between cohort participants sense of preparedness to lead with vision and ethics (r = .63, p < .01), lead instruction (r = .62, p < .01) and lead organizational learning (r = .53, p < .01; Huang et al., 2012).

Educational leadership programs centered on best practices were standardized in Florida in 1985 through the Management Training Act in which the Florida Council on Education Management (FCEM) instituted 19 Principal Competencies containing behavioral indicators that focused on school leadership and improvement of student achievement. Within the competencies, components for professional development, selection, and procedures for evaluation of principals were defined. In 2005, Florida administrative code rule 6A-5.081 under rule making authority 1012.55 FS enacted the Florida Principal Leadership Standards. The standards identify the core expectations for school leadership; organized by four domains and ten standards (State of Florida, 2014). Domain three, Standard 9, focuses on communication within organizational leadership:

two-way communication, appropriate oral, written and electronic communication skills, to accomplish school and system goals by building and maintaining relationships with students, faculty, parent and the community (FLDOE, 2015). The standard further delineates that an effective leader engages in constructive school centered conversations, utilizing active listening (FLDOE, 2015). The quality of an aspiring school leaders' preparation program provides opportunities for theoretical framework, practicums and field experience to develop administrative skills, impacts the development of instructional leadership and transformational leadership practices (Darling-Hammond, LaPointe, Meyerson, Orr, & Cohen, 2007).

The Florida Principal Leadership Standards were enacted in 2005 through Florida Administrative Code Rule 6A-5.080, and later revised in 2007 in the amended Administrative Code Rule 6A-5.081. In 2006, the Florida Legislature established the William Cecil Golden School Leadership Development Program, as a vehicle to define and provide a model and clearinghouse for competency based comprehensive statewide professional development for school leaders. In order for school leadership development programs to be recognized by the state for certification, the program must be aligned with the Florida Principal Leadership Standards, and the components of the William Cecil Golden School Leadership Development program. Universities must align educational leadership certification programs in order for programs to be recognized (State of Florida, 2014). Florida State Board of Education defines two levels of certification in educational leadership. Level II certification is obtained through completion of specific components of a standards based professional development program, after completion of Level I

certification requirements. Level II school principal certification can only be obtained after serving in an administrative capacity within a school district. Level I initial certification can be achieved by completion of specific coursework and field experiences in an approved program and obtaining a passing score on the state licensure examination. Section 1012.986 F.S. and the Florida Administrative Code (6A-5.081) outline the required components for Level I educational leadership programs. The prescribed standards based educational leadership programs are designed to prepare aspiring leaders to become school administrators. Level I certification programs must include field experiences in collaboration with public schools in which the candidate must demonstrate the ability to apply the Florida Principal Leadership Standards (State of Florida, 2014).

Table 4

Educational Leadership Developments in Florida

Florida Educational Leadership Development	Year
Florida Management Training Act of 1985 (FS 231.087)	1985
ISLLC Standards	1996
Florida Principal Leadership Standards FPLS (6A-5.080)	2005
William Cecil Golden School Leadership Development Program	2006
Florida Educator Standards, Preparation and Performance (6A-5.081)	2007 revised 2011
Educational Leadership Policy Standards for 2008	2008

The University of Central Florida state approved Level I Educational Leadership M.Ed. program provides a theoretical and conceptual framework of the Florida Principal Leadership Standards, requiring specific coursework, and documentation of 200 hours of field experience prior to the beginning of the internship (University of Central Florida,

2014). The second of six program goals of the university educational leadership program addresses a constructivist approach to the development of a conceptual understanding and personal competency in basic interpersonal relations. The interpersonal skill of communication is specifically addressed in three of the last four courses in the recommended program sequencing: (EDS 6123) Educational Supervisory Practices I, (EDS 6130) Educational Supervisory Practices II, and (EDA 6300) Community School Administration (UCF Graduate Handbook, 2015). The university internship was designed as a learning experience that takes place in authentic settings. Interns must document evidence of learning experiences related to the Florida Leadership Standards, and provide reflections on the refinement of leadership knowledge and skills acquired in the program through the field experiences (FLDOE, 2014). The university model is consistent with Dewey's (1986) five phases of problem solving and reflective thought: (a) the learner has an authentic experience in which holds genuine interest (b) a genuine problem develops within the authentic experience that stimulates thought by the learner (c) the learner gleans information needed to solve the problem through coaching and feedback (d) the learner takes responsibility for acting on solutions and develops in an orderly way, and (e) the learner has an opportunity to test ideas by application to make meaning clear, validate solutions and modify professional practices.

Practice

A core practice in education is ability to facilitate discussions and communicate with stakeholders (Forzani, 2014). For the educational profession, "it is insufficient to learn for the sake of knowledge and understanding alone; one learns in order to engage in practice" (Shulman, 2005, p. 52). Teachers and school leaders need authentic practice experiences, allowing time for mistakes and appropriate professional challenges, in order to form mature professional identities (Dotger, 2015). School leaders are expected to make sound decisions and engage in professional interactions with stakeholders the immediately. Communication between school community stakeholders and the school instructional leaders is essential to developing and maintaining student centered learning environment and a positive school culture. Communication strategies and active listening assist in in the development of the positive school climate and culture by providing a mutual respect and trust (McNaughton, Hamilton, McCarthy, Head-Reeves, & Schreiner, 2007). As aspiring school leaders participate in educational leadership coursework, to close the gap between theoretical understanding of concepts and the challenges of performance daily in a complex, improvisational dominated work environment (Forzani, 2014). In order to prepare for that expected expertise, Educational Leadership master's degree students need opportunities to role-play school administrator situations to support their movement from theoretical knowledge to embedded practice. Novice educators are able to develop professional interaction and communication skills when given opportunities to authentically practice (Dewey, 1932; Dotger, 2015). While engaged in practice, cognitive development is dependent upon the zone of proximal development,

the appropriate amount of challenge and support fostering learning, while engaged in social behaviors (Vygotsky, 1978). Developing instructional leaders learn how to successfully interact with elements of professional risk by engaging in authentic practice to enhance the formation of knowledge.

Knowles, Holton and Swanson (as cited by Chu & Tsai, 2009), "assert four postulates of adult learning: self-directedness, abundant experience in the learning process, readiness to learn and problem centered" (p. 490). Constructivist pedagogy in developing authentic practice opportunities for aspiring leaders helps develop cognitive thinking skills, connecting life experiences to learning (Chu & Tsai, 2009). Skill development through authentic practice with guidance and collaboration is more effective than working alone (Vygotsky, 1978; Dotger, 2015). In examining the self-efficacy of adult learners, Chu and Tsai (2009) found through descriptive statistics and inter-correlations that adults prefer to learn through connecting to real life ($M = 4.10$) with reflection ($M = 4.09$) that can be applied to complex reality. Pike and O'Donnell (2009) explored the use of clinical simulation practice, and the impacts on self-efficacy beliefs of pre-registration nurses. Findings demonstrated a contention that enactive mastery experiences are an important source of self-efficacy believes; as well as authentic practice models (Pike & O'Donnell, 2009).

The development of skills through authentic practice of complex tasks allows the developmental of complexity into a routine manner, which allow students and teachers to spend far less time, "figuring out the rules of engagement, thereby enabling them to focus on increasingly more complex subject matter" (Shulman, 2005, p. 56). Through the use

of elaboration of learning through authentic practice, aspiring leaders are able to use the newly acquired skills from authentic practice, and transfer the knowledge similar situations (Kluger & DeNisi, 1996).

Peer modeling and role-playing in the classroom is a low risk, initial practice model. This model allows for initial exploration of novel tasks intended to allow participants to anticipate expected situations, and practice actions and reactions. The impact of learning is limited by the skill level of peers in the role-play or peer modeling exercise. Okita (2014) studied children's ability to monitor mistakes when solving mathematics problems. Students were able to monitor mistakes of an computer agent ($M = 74\%$) at a higher rate than self ($M = 58\%$); $t(38) = 1.98$, $p < .05$. These practice methods however provide inconsistent practice influenced by each participant's ability to understand the complexities of the task, to provide an appropriate response, the ability to act out unfamiliar situations, as well as to stay in character. When an error in understanding of the student demonstrated on a pretest, was replicated by the agent, students were less capable of identifying the error of the agent ($M = 43\%$) than self ($M = 55\%$; Okita, 2014). The limitations of abilities of the participants impede the effectiveness of the realistic practice (Rees Dawson & Lignugaris-Kraft, 2013).

Identifying more realistic practice models through the use of technology and simulation platform experiences can increase the authenticity of the practice. By increasing authenticity, newly acquired skills can develop into embedded practices for aspiring school leaders. The ability of the participant to engage authentically during the

practice is key to increasing skill level in engaging specifically in relation to engaging in school leadership conversations with key stakeholders.

Mixed Reality in Education

Mixed reality simulations provide the venue for realistic practice for aspiring school administrators; allowing time and locale to practice high-risk communication situations in a low risk environment. Technology related learning platforms are used to provide active participation practice in scenarios in mixed reality environments to enhance the in the learning process. Virtual reality tool research from 1999-2009 compiled in a meta-analysis by Mikrophoulos and Natsis (2010), investigate the characteristics, features and contributions to learning and pedagogical approaches of learning using virtual environments in education (Mikrophoulos & Natsis, 2010). The environment does not create the learning; however, the ability to create realistic practice may result in learning (Dalgarno & Lee, 2010). Empirical research synthesized approaches learning through the constructivist theory. Hedberg and Alexander (as cited by Mikrophoulos & Natsis, 2010) offer virtual environments provide an enhanced learning opportunity when there is, "immersion, fidelity and active learner participation" (p. 770).

Ease of use directly influences participants' perceived usefulness and social ability; participants need to feel the ease of use of the virtual tool before they can perceive the usefulness and utilize them to interact socially (Tsai, 2012). The research on the scope of the use of mixed reality to enhance or improve learning has developed as

online course development and distance learning opportunities have expanded with technological advances; portraying the instructor as a social agent to deliver massive open online courses (MOOCs). The effectiveness of MOOCs was the focus of Li, Kizilcec, Bailenson, and Ju (2015), research of student responses to human lectures and agents; a more cost efficient method of delivery. Limited to lecture style instruction and one-way communication, the study found attitudinal measures favored the visual representation of the instructors as an actual human, independent of the agent, but no significant interaction effects comparing human to agent with human like visual appearance (Li et al., 2015). These responses are a result the mixed reality experience to provide both the illusion of presence and plausibility of the interaction occurring (Slater, 2009).

The sophistication of animation and simulation has led to research on the use of agents, computer portrayal of a human, as opposed to avatars, human in the loop, and the impact on a participants learning. Melo, Gratch, and Carnevale (2014) found that people behaved differently when interacting with avatars than agents, conceding at a significantly higher rate ($d = 1.162$) when faced with a confrontational or angry avatar in order to preserve social harmony; human-to-human social action theory.

The human in the loop experiences of mixed reality practice create an environment place illusion and situational plausibility by using avatar mediated interactive training and individual experience systems (AMITIES) as the platform for the learning (Hughes, 2014; Slater, 2009; Blascovich & Bailenson, 2011; Okita, Bailenson, & Schwartz, 2008). The mere belief in having a social interaction with someone in a

mixed reality simulation creates a neurological arousal correlated to learning (Okita, Bailenson, & Schwartz, 2008). This arousal results in the participant transference of human-to-human social action theory into the mixed reality simulation, preserving social harmony, and personality to a computer. Dodds, Mohler and Bülthof (2011) found a significant difference in performance as it relates to verbal and nonverbal communication skills when participants engaged in a mixed reality experience as an avatar and believed the other avatar was actively participating with a mean score of 8.33 (SD = 3.0), than when the second avatar was moving based on a prerecorded animation with a mean score of 6.00 (SD = 3.38; Dodds, Mohler, & Bülthof, 2011). Conversely, Chen, Grierson and Norman (2015) found that the use of a human patient simulator in nursing education as a high fidelity instructional tool did not increase performance. In a comparison of mean performance scores, the difference in total score between the high fidelity and control group was 14.29 ± 3.88 ($p < 0.001$), and the mean difference in total score between the low fidelity and control group was 25.22 ($p < 0.001$).

Katagiri, Nass and Yugo (2001) extended the research on social actor theory (Reeves & Nass, 1996) and explored the social responses of reciprocity, feeling obligation within a social situation, and the connections to cultural norms of the United States and Japan. When placed into interactions with a computer; both cultural groups, when experiencing a positive interaction with a computer, displayed no significant difference in behavior when placed in a second interaction with the computer; $t(20)$, 4.90, $p > .001$, consistent with home country cultural norms.

The effectiveness of the use of mixed reality technology as a viable option to traditional teaching methods is dependent upon the learning responses elicited from the participant. Social actor theory (Reeves & Nass, 1996) predicts humans will have social responses if the agent is perceived to be human, and social influence theory (Blascovich, 2002), which suggest people will treat agents like humans. As the quality of the avatar's ability to be expressive both verbally and nonverbally, learning outcomes improve (Veletsainos, Heller, Overmyer, & Procter, 2010; Moreno & Mayer, 2002).

Learning transfer in mixed reality environments through the characteristics and features of virtual reality experience center around five learning affordances: (a) special knowledge representation, (b) experiential learning, (c) engagement, (d) contextual learning, and (e) collaborative learning (Mikrophoulos & Natsis, 2010, p. 778). When mixed reality environments were used in serious games, the role of the instructor emerged into themes: (a) theoretical foundation through live instruction, (b) observer of the simulation performance, (c) scenario author- developing realistic practice tied to conceptual knowledge, (d) in-game player controlling the avatar, and (e) debriefer, proving summative feedback on performance (Alklind, Taylor, Backlund, & Niklasson, 2012).

Accredited university programs in educational leadership provide coursework and practice with coaching feedback, which simulates communication with parents and teachers in an administrative capacity, to facilitate skill development before entering the administrative internship. Without intentional realistic guided practice coupled with specific and timely coaching and feedback, M.Ed. students may enter the administrative

internship unprepared to engage in effective administrative conferencing with teachers or with parents. Moving from theory to practice, scaffolding instruction, the university's use of virtual rehearsal creates a safe environment to provide rich environments in which the learner can experiment with the content without risk provides opportunities to make curricular connections and deep reflective practice.

Feedback and Coaching

Florida Educational Leadership development programs must include the critical components of the William Cecil Golden School Leadership Development Program that specifically address ongoing mentoring and coaching. While engaging in leadership communication skills practice, students need timely and specific feedback through coaching to improve performance (Hattie, 2009). Coaching is a shaping of behavior by observing performance, offering guidance, as well as recommending specific practice to emphasize (Owens & Valesky, 2011). Feedback is information provided by an agent regarding aspects of a performance or understanding, which can confirm or enrich and assist in the interpretation of a situation (van Diggelen, den Brok, & Beijaard, 2012).

In a five year longitudinal study of use of time of instructional leaders, Grissom, Loeb and Master (2013) found that the principals spent an average of 12.7% of the school day on instructional activities; walkthroughs (M = 5.4%), development of educational programs (M = 2.1%), formal evaluation (M = 1.8%), and informally coaching teachers (M = 0.5%). Resulting in a negative association between walkthroughs and overall school student performance outcomes. Sixty two percent of principals identify

unscheduled walkthroughs as the primary source of instructional practice information, only 33% report the walkthroughs are to provide coaching and feedback about instruction (Grissom et al., 2013).

To provide meaningful, actionable coaching and feedback, active listening is essential (McNaughton, Hamlin, McCarthy, Head-Reeves, & Schreiner, 2007). McNaughton et al. (2007) utilized the LAFF active listening technique protocol, (a) listen empathically, (b) ask questions, (c) focus on the issues, and (d) find a first step. In a study of 208 participants, finding that an educators using the LAFF technique are perceived overwhelmingly more effective (SD = 1.5) than a non-listening educator by both teachers and parents. Scripted technique communication was perceived as more effective (M = 6.36, SD = 1.9) than the non-LAFF scripted conversations (M = 3.48, SD = 2.1; d = 1.43, $p < .01$), suggesting that by developing active listen skills, communication with school stakeholders is perceived to be more effective (McNaughton et al., 2008).

In a meta-analysis review of the seminal research on the effectiveness of feedback; feedback intervention was defined as, "actions taken by (an) external agent(s) to provide information regarding some aspect(s) of one's task performance" (Kluger & DeNisi, 1996, p. 255). In the 131 studies cited involving 12,625 participants, 470 effect sizes of feedback intervention were isolated. A mean of 0.38 suggests a moderate positive effect of feedback on performance, however; 32% of the effects were found to be negative, resulting in a reduction of performance. Kluger and DeNisi (1996) attributed connections of feedback interventions to several theories to explain the variability of results.

Table 5

Feedback and Coaching Theories

Theory	Behavior to Feedback	Researchers
Action Theory	Motivation is to regulate action through sequence, structure and focus	Frese & Zapf (1994)
Control Theory	Motivation is to reduce the gap.	Annet (1969) Carter & Scheier (1981) Podsakoff & Farh (1989)
Goal Setting Theory	Motivation is to achieve the standard.	Locke & Latham (1990)
Social Cognition Theory	Motivation is belief in eventual success	Bandura (1991)

Note. Adapted from " Feedback Interventions," by A. Kluger and A. DeNisi, 1996, *Psychological Bulletin, 199*(b), pp. 252-284.

A consistent belief is that behavior is goal directed (Kluger & DeNisi, 1996, p. 259). Divergence in the theories relates to the reaction to the feedback by the recipient, and how the reaction impacts the learning process towards attaining the goal or reaching the standard (Kluger & DeNisi, 1996). Goal setting theory links ones behavior to feedback and to motivation to achieve a particular standard or goal (Locke & Latham, 1990). Frese and Zapf (1994) through action theory link the behavior to feedback as a motivation to regulate actions through sequence, structure and focus. Control theory (Annet, 1969; Podsakoff & Farh, 1989; Carter & Scheier, 1981) links behaviors to feedback to the motivation to reduce a gap in performance. Social cognition theory (Bandura, 1991) links behavior to feedback as a motivation by the belief in eventual success (Kluger & DeNisi, 1996).

Within each of these feedback models, behaviors, both positive and negative elicit reactions from the learning. Feedback can be provided linked directly related to the task, task details or the individual student. The most effective forms of feedback provide specific reinforcement in which is enacted upon by the learner (Hattie, 2009).

The translation of learning and the actions by the student after receiving and interpreting the feedback are directly related to the accuracy of the feedback, specificity to the goal or standard and by the interpreted intent of the action. Deci (1999) as cited by Hattie (2009) found a negative correlation between extrinsic reward and task performance feedback (d = -0.34); in that the rewards undermine taking responsibility for self-regulation.

Table 6

Feedback Type and Reactions to Feedback

Feedback Type	Feedback Focus	Positive Reaction	Negative Reaction
Task	Standard Discrepancy	Attain goal- raise standard	Increase effort, shift attention
Task Details	Familiarity of Task	Generate Hypothesis, match to reality, evaluate hypothesis	Interruption of script, task interference, quit
Self	Self esteem, control, impression management	Task important, focal of attention, improved performance	Nonfocal, diminish resource allocation, reduce effort, quit

Note. Adapted from " Feedback Interventions," by A. Kluger and A. DeNisi, 1996, *Psychological Bulletin, 199*(b), pp. 252-284.

By focusing on the task, the threat to self-esteem is low; therefore, the student can focus more attention to the feedback as it relates to the end goal of behavior change

(Hattie, 2009). Feedback directed to the self, positive or negative, directs attention to individual ability, self-confidence and may interfere with the ability to perform required tasks. Feedback specific to goal or standard attainment provided at or just above the cognitive performance level of the student is found to be most effective (Kluger & DeNisi, 1996).

The main purpose of feedback is to reduce the gap of understanding between the current performance and the intended goal (Hattie, 2009). To be most impactful, the feedback must have two characteristics; it must be timely and specific with the intent to reduce discrepancies between current task performance and concept understanding and the intended learning outcome (Hattie, 2009).

An effective model of feedback (Hattie, 2009) includes information regarding performance of a task that is focused on the goal (feed up) the result (feedback) and next steps (feed forward). By utilizing this feedback model, the learner is able to self-evaluate understanding of the initial task, the plan of action, the execution of the plan and self-regulate future related actions based on the feedback, increasing fluency and mastery (Hattie, 2009). In an analysis of feedback perceptions, van Diggelen et al. (2012) analyzed the perception of feedback by self and peer recipients in relation to (a) length of conversation, (b) presentation of the feedback; levels of elaboration, abstraction, detail and specificity, (c) interval interaction (beginning, middle, and end) within the conversation, and (d) reaction to the feedback. The average feedback session was 46 minutes. In relation to participant perception of presentation, 66.6% categorized the feedback as elaborate and specific by providing examples of phrasing and observable

behaviors. In relation to participant perceptions of feedback conversation interactions were classified by self and peers to be 70.7% interactive; 16.6% were interactive in all three phases of the conversation (van Diggelen et al., 2012, pp. 124-125). In addition, the study included an analysis of teacher reflection in terms of physical appearance of the reports, as well as the use of the established criteria both qualitative and quantitative. In regards to perceptions of the peer reactions to the feedback, 20.83% reported the feedback was not accepted; with peers providing rationalizations or justifications for behaviors (van Diggelen et al., 2012).

Kluger and DeNisi (1996) concluded that feedback effects were moderated by the nature of the task, with limited understanding of the task properties creating a positive effect; task type is a significant conditional boundary to the knowledge of the effectiveness of feedback interventions intended to enhance or improve performance. The use of computer generated practice provides a non-threatening environment to engage in the task, allowing for task oriented feedback to be received and interpreted through a lens of positive reaction; creating a growth minded learning opportunity (Kluger & DeNisi, 1996). Providing coaching and feedback at the conclusion of the virtual rehearsal provide students timely and specific feedback with the intent to close the gap between performance and the desired goal (Hattie, 2009).

The use of mixed reality environments in which the avatar has a human like image with high behavioral realism facilitates the practice to elicit a more natural reaction and interaction during the rehearsal, creating a social influence on the student (Fox et al., 2014). The use of virtual rehearsal environments with side-by-side coaching and

feedback maximizes the opportunity for students to improve future performance. Creating a safe environment where error is welcome and fostered, learning can occur through the recognition and correction of errors through feedback. Growth of performance cannot be transpire if errors are unchecked, wrong directions are not addressed, or fluency of direction is not corrected (Hattie, 2009). Utilizing the Blascovich (2002) model of social influence, the feeling of human presence with the avatar creates a realistic social presence and social influence that enhances the virtual rehearsal with rich sensory feedback and realistic behaviors, allowing the interaction to be authentic. To improve performance, authentic practice must be followed by a feedback intervention focused on the gap between the expected goal attainment (Kluger & DeNisi, 1996).

Reflection and Self-Regulation

Learning, described by constructivist theorists, is organizing experiences into categories of diversity and complexity, and creating mental models derived from experiences; linking practice with reflection as an important aspect of professional development (Loughran, 2002). Latham and Lock (1991) as cited by Kluger and DeNisi (1996) argued that feedback on practice was information and data only; reflection on practice and feedback were the catalyst for learning and change. Reflection on practice required an intentional pause after an experience, allowing time for cognitive processing to enhance learning (York-Barr et al., 2006). Loughran (2002) researched participants' use of rationalization, and a defensive posture, based on bias of setting. Dewey (1933)

and Schön (1983) consider reflection to be a common psychological phenomenon that happens continuously and naturally for humans. Dewey (1933) viewed reflection specifically as a connection between observation and inference, as opposed to habits of thought; logically sequenced thoughts that include consideration for consequences of action (Valli, 1977). Schön (1983) views reflection as a conversation with a situation, experimenting to see how the situation responds through four stages of reflective practice (a) framing the problem, (b) naming contributing factors, (c) interpretation of situation, and (d) analysis, synthesis and evaluation (Sparks-Langer, Simmons, Pasch, Colton, & Starko, 1989). Reflective thinking transforms an unclear or unfamiliar situation into a coherent, or more familiar situation, constructing meaning and sense from unfamiliar or contradictory problems. Pedagogical thoughtfulness of practice and theory create the act of reflection on practice (van Manen, 1990). Self-awareness through reflection can result in a new way of seeing from others' perspectives that lead to the shaping of one's behavior; by identifying the problem, framing and reframing of the situation is an important aspect of nature and value of reflection (Loughran, 2002). Reflection in-action and reflection on-action as described by Schön (1983) is the process of converting a problematic situation into a problem, and formulating a solution (Valli, 1997).

Reflection involves dispositions (a) metacognition, (b) connecting to previous learning, (c) drawing cognitive and emotional information from multiple sources, (d) synthesizing and evaluating information, and (e) extending learning beyond original contexts (York-Bar et al., 2006). Deliberatively reflective educators think about behaviors and the context in which they occur, make judgments about the behaviors and

alter thinking and actions (Valli, 1997). Professional practice develops by understanding what was known, and reconsidering what is learned through practice (Loughran, 2002).

Zimmerman Bandura and Martinez-Pons (1992) have identified a correlation between perceived self-efficacy for self regulated learning and self-efficacy for academic achievement ($r = .51$, $p > .01$), independent of prior performance outcome to final performance outcome. This suggests that self-regulatory behaviors facilitate the influence of prior accomplishments and contribute to final performance outcome (Zimmerman, Bandura, & Martinez-Pons, 1992).

Preservice education research links the sophistication of language and thinking expressed in the reflection process on the application of educational principles in order to deepen understanding of application of pedagogical principles (Sparks-Langer et. al., 1989). A one-factor analysis of variance resulted in a significant between-group difference; $F(2, 21) = 13.61$; $p = .002$) measuring achievement levels as a grade point average in core course content and reflective practice scores, indicating depth of knowledge of content influenced reflective thinking interview (Sparks-Langer et al., 1989).

Table 7

Seminal Research on Reflection

Researcher	Date	Reflective Practice
Dewey	1933	Constructing learning from a continuity of meaning over time.
van Manen	1977; 2002	Three stages of reflectivity: technical, practical, and critical
Schön	1983; 1987	Gap between professional knowledge and actual competencies. Practitioner knowledge derived from experience. Distinction between reflection in action and reflection on action
Sparks-Langer & Colton	1991; 1994	Multiple influences on reflective practice: Experiential and professional knowledge, feelings, collegial environment and personal characteristics.
Linda Valli	1997	Technical reflection, reflection-in and on-action, deliberative reflection, personal reflection, critical reflection.

Note. Adapted from "Reflective practice to improve schools an action guide for educators", York-Barr et.al, 2006.

In a problem based learning self-efficacy study with undergraduate computer science students, Dunlap (2005) through a constructivist pedagogical lens used authentic problems of practice, collaboration and reflection as a catalyst for improved student performance. Through the use of pre and post course self-efficacy scale responses and reflective journal entries, qualitative and quantitative data on perceived preparedness to work independently was collected. Using a two-tailed paired dependent T-test, the mean self-efficacy rating increased from the pre-test to the post-test, $t(30) = -27.878$; $p < .0001$. Reflective journal entries supported the growth mindset, and perceptions in preparedness to meet the demands of the profession (Dunlap, 2005). Authentic engagement in

practice, coupled with effective reflection on experiences, enhances the learning process and the ability to articulate professional knowledge (Loughran, 2002).

Summary

Chapter Two-literature review explained the purpose of conducting research on the use of mixed reality practice with coaching, feedback, and reflection prior to entering into field practice. Included was an overview of the historical, theoretical, and empirical literature that supports the need for aspiring educational leaders to have access to pedagogy, instruction, authentic practice and reflection opportunities in order to develop knowledge, behavioral skills and competencies required to be an effective school leader According to recommendations found in the literature review:

McNaughton, Hamilton, McCarthy, Head-Reeves and Schreiner, (2007) found that communication strategies and active listening assist in in the development of the positive school climate and culture by promoting a mutual respect and trust. However there is a gap exists between theoretical knowledge found in educational leadership coursework and the practical knowledge demanded of school leadership (Korthagen & Keessles, 1999). Aspiring educational leaders are able to develop professional interaction and communication skills when given opportunities for authentic practice with realistic scenarios (Dewey, 1932; Dotger, 2015). While engaged in practice of professional social behaviors, cognitive development is dependent upon the zone of proximal development (Vygotsky, 1978). Through the use of elaboration of learning though authentic practice, learners are able to use the newly acquired skills, and transfer

the knowledge similar situations (Kluger & DeNisi, 1996). The effectiveness of peer modeling and role-playing as forms of practice are limited; the abilities of the participants impede the effectiveness of the realistic practice (Rees Dawson & Kraft, 2013).

Mixed reality simulations as an authentic form of practice does not create the learning; however, the ability to create realistic practice may result in learning (Dalgarno & Lee, 2010). The constructivist approach to learning is prevalent in mixed reality research, by providing immersion in the learning experience as an active participant in the virtual environment (Mikrophoulos & Natsis, 2010). The authenticity of the mixed reality experience is enhanced by the human in the loop model, that creates an environment place illusion and situational plausibility experience through the use of AMITIES for learning (Hughes, 2014; Slater, 2009; Blascovich & Bailenson, 2011; Okita, Bailenson, & Schwartz, 2008). The effectiveness of the use of mixed reality technology is dependent upon the learning responses elicited from the participant. Humans will have social responses if the agent was perceived to be human (Reeves & Nass, 1996; Blascovich, 2002). The mere belief in having a social interaction with a human in a mixed reality simulation creates a neurological arousal correlated to learning (Okita, Bailenson, & Schwartz, 2007). As the quality of the avatar's ability to be expressive both verbally and nonverbally increases, learning outcomes improve (Veletsainos et al., 2010; Moreno & Mayer, 2002).

The most effective forms of feedback provide specific reinforcement in which is enacted upon by the learner (Hattie, 2009). To provide meaningful, actionable coaching and feedback, active listening is essential (McNaughton, Hamlin, McCarthy, Head-

Reeves, & Schreiner, 2007). Kluger and DeNisi (1996) attributed connections of feedback interventions in relation to several theories to explain the variability of results. A consistent belief in the theories is that behavior is goal directed. Divergence in the theories relates to the reaction of the recipient to the feedback, and how the reaction impacts the learning process towards attaining the goal or reaching the standard. The divergence in feedback reactions was directly related to the type of feedback provided and behavior of the recipient (Kluger & DeNisi, 1996). Social cognition theory (Bandura, 1991) links behavior to feedback as a motivation by the belief in eventual success. Frese and Zapf (1994) through action theory link the behavior to feedback as a motivation to regulate actions through sequence, structure and focus. Control theory as action theory (Annet, 1969; Podsakoff & Farh, 1989; Carter & Scheier, 1981) links behaviors to feedback are a result of motivation to reduce a gap in performance. Kluger and DeNisi (1996) concluded that feedback effects were moderated by the nature of the task, with limited understanding of the task properties creating a positive effect; task type is a significant conditional boundary to the knowledge of the effectiveness of feedback interventions intended to enhance or improve performance. Utilizing the Blascovich (2002) model of social influence, the interactor performance creates the feeling of human presence with the avatar creating a realistic social presence and social influence that enhances the virtual rehearsal with realistic behaviors. Authentic practice followed by a feedback intervention focused on the gap between the expected goal attainment of the task and individual performance of the task was designed to develop improved performance (Kluger & DeNisi, 1996).

Dewey (1986) and Schön (1983) considered reflection to be a common psychological phenomenon that happens continuously and naturally for humans. Dewey viewed reflection specifically as a connection between observation and inference, while Schön viewed reflection as a conversation with a situation, experimenting to see how the situation responds (Clara, 2015). Zimmerman, Bandura, and Martinez-Pons (1992) identified a correlation between perceived self-efficacy for self-regulated learning and self-efficacy for academic achievement, independent of prior and final performance suggesting that self-regulatory behaviors reconcile the influence of prior accomplishments and contribute to final performance.

The understandings brought on by this literature review have provided a conceptual framework for supporting standards based educational leadership programs that included time for varied authentic practice, reflection, goal and objective setting, open communication, feedback and coaching, as well as field practice and internship experiences aligned with the Florida Principal Leadership Standards (FLDOE, 2015).

CHAPTER THREE: METHODOLOGY

Introduction

Chapter three describes the combined quantitative and qualitative methods used in the study. A logical analysis and triangulation method was utilized. The triangulation of data ensured the validity of the data (Fitzpatrick, Sanders, & Worthen, 2009) and reduced the possibility of bias by the researcher (Fraenkel, Wallen, & Hyun, 2012).

In order to develop Educational Leadership M.Ed. students' skill level in communicating with school staff and community stakeholders, an environment must be made available that provides a realistic setting to conduct conferencing practice and provide immediate coaching and feedback. The study used the TeachLivE™ simulation system developed by faculty from the University of Central Florida. The system was originally developed as a practice environment to coach both preservice and in-service teachers on interacting with a class of students to manage behaviors and practice instructional strategies that promoted student content understanding. The simulation practice system was ideal as it provided short, intensive practice sessions with a skilled interactor, and contained options of both student and adult avatars within the existing system.

The research was conducted in response to a need for realistic practice opportunities in communicating with community stakeholders; a skill identified in the Florida Principal Competencies (DOE, 2014). The mixed reality simulation and practice tool original development was for teachers, both pre-service and in-service, to practice

class room management and pedagogy with avatars designed to simulate upper elementary to middle grades aged students. The study focused on the use of the adult avatars as a tool to coach future school leaders enrolled in the Educational Leadership M.Ed. program in conferencing skills as a school administrator; specifically focused on the perceptions of preparedness by the graduate students. Perceptions were collected during specified course, prior to entering the required internship portion of the school leadership program. In addition, the researcher collected perceptions of the benefits of the simulated practice, and the reality of the simulated practice after the completion of the leadership internship experience. This chapter contains five sections. Section one describes the purpose of the study and research questions. Section two provides detailed descriptions of the participants and setting of the study. Section three describes the three survey instruments used to collect data in the study. The fourth section defines the procedures for data collection. The final section explains the data analysis used.

Purpose of the Study

The purpose of the study was twofold; to ascertain the perception of students in the M.Ed. in Educational Leadership program of mixed reality experiences using TeachLivE™ in preparation for the challenges of school leadership and to determine the perceived value of the coaching feedback received immediately following a mixed reality conferencing practice. In addition, after participants complete the administrative internship, measuring the perceived value of the mixed reality experience and coaching feedback.

The problem to be studied is how the use of mixed reality virtual practice with immediate feedback and coaching prepare educational leadership masters level students for conferencing with parents and teachers as it relates to Florida Principal Leadership Standards (State of Florida, 2014). Utilizing technology to create realistic experiences for school leadership communication practice increases the conferencing skills of school leaders.

Research Questions

The study assessed the perceptions of the master's degree in educational leadership students through the following research questions.

1. To what extent, if any, do Educational Leadership M.Ed. students believe the TeachLivE™ parent conference and teacher post observation conference simulation experiences to be helpful in developing their communications skills with parents and teachers?
2. To what extent, if at all, do Educational Leadership M.Ed. students believe the TeachLivE™ coaching feedback was helpful in developing their communications skills with parents and teachers?
3. To what extent do student reflections of the TeachLivE™ experience indicate it is beneficial in increasing skill in communicating with parents and teachers immediately following the mixed reality simulation?
4. To what extent do Educational Leadership M.Ed. students perceive the TeachLivE™ 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?

Study Design

The study included an analysis of participant perceptions as it relates to communication immediately following the simulation practice and coaching session. In addition, analysis of reflective responses on the end of program exit survey on perceptions of preparedness and effectiveness of the simulation practice in preparation for real world experiences.

The study used mixed methods to collect data on Instructional Leadership M.Ed. students' perceptions of the use of the simulated practice coupled with immediate coaching and feedback in their preparation for communicating with stakeholders as a school leader as well as the benefit of and the realistic nature of the medium of practice. The quantitative methods on the study included the responses of participants Likert scale collecting perceptions of the use of the simulation practice as a realistic practice environment, and the value of the coaching and feedback during the TeachLivE™ coaching session. The qualitative methods of the study include researchers' observations during the simulation practice as the coach, as well as the responses to open ended items on the survey both immediately following the simulation practice, and at the conclusion of the internship through the exit survey.

Participants

In order to obtain a Florida educators certificate in for Educational Leadership, educators must complete a state approved Level I certification program. The University of Central Florida Level I approved program course requirements address the Florida Educational Leadership Standards, which require theoretical, and conceptual framework coursework and a practical application experience. The participants in the study consisted of graduate students enrolled in the Educational Leadership M.Ed. program at the University of Central Florida beginning fall semester 2013 through spring semester 2015. Specifically, the convenience sample includes Educational Leadership M.Ed. students, enrolled in face-to-face Educational Supervisory Practice II (EDS 6130) and Community School Administration (EDA 6300) in which university faculty elected to participate in the virtual rehearsal as a course content practice sessions. From this convenience sample of enrolled graduate students ($N = 141$), research subjects completed the survey at the end of the mixed reality experience. Educational Leadership M.Ed. students at the university from the Fall Semester 2013 through the Spring Semester 2015 comprise the population of the study.

Ecological generalizations (Fraenkel et al., 2012) can be made from the sample, extending the results of the study to other settings; all Educational Leadership masters programs contain courses that address parent communication and teacher observation conferencing. One significant limitation of the ecological generalization is the consistency of content and delivery models of the instructors within the university as well as among other universities.

From this convenience sample, research subjects completed the survey at the end of the mixed reality experience. The sample was also limited to participants completing the internship by the end of spring semester 2015, and those who responded to the items on the exit survey at the end of the administrative internship. Table 4 describes the participants by term and course that participated in the simulation experience for the study.

Table 8

Participants by Course

Term	Supervisory Practices II	Community and School
Fall 2013	13	0
Spring 2014	0	17
Summer 2014	26	26
Fall 2014	33	11
Spring 2015	0	16
Enrollment by Course	71	70

Completion of the reflection assignment as assigned by the course instructor subsequent to the simulation experience was dependent on the expectation from each instructor. The number of reflection assignments received from instructors during the course of the research study limits the sample to 54.

Educational Leadership Exit Survey was not mutually exclusive to the participants in the simulation experience. Only students selecting a positive response to participation in the experience were provided an opportunity to respond to three questions specific to the mixed reality practice experience. The number of participants who

responded to the items on the Educational Leadership Exit Survey at the end of the administrative internship by May 2015 further limits the sample to 61.

Instrumentation

The study used mixed methods to collect data on Educational Leadership M.Ed. students' perceptions of the use of the simulated practice coupled with immediate coaching and feedback in their preparation for communicating with stakeholders as a school leader as well as the benefit of and the realistic nature of the medium of practice. Data sources in the study include qualitative and quantitative data collected from self-reporting instruments containing a behavioral rating scale (Frankel, Wallen, & Hyun, 2012), asking participants to judge personal attitudes using a Likert scale in which each item is given a numerical value, and the total score is presumed to indicate the attitude or believe in question (Frankel et al., 2012). The TeachLivE™ Educational Leadership Parent Conference Simulation Feedback survey and the TeachLivE™ Educational Leadership Teacher Conference Simulation Feedback survey instruments were designed in collaboration with university educational leadership faculty and the researcher to ascertain the research subjects' perceptions of preparedness for real world teacher and parent communications after experiencing the mixed reality virtual practice. Survey instruments from previous university research on perceptions of benefits of the mixed reality experiences as they pertain to preparation for mathematics and science education majors was modified to reflect course specific goals related to educational leadership

students. Survey items included three categories of questions: demographic variables, factual and attitude.

To answer research questions one and two, each participant received a written survey at the conclusion of the mixed reality simulation practice (Appendix A & B), as well as an electronic communication to complete an online survey at the conclusion of the internship experience (Appendix E). The Educational Leadership Teacher Post Conference and Parent Conference surveys were co-developed by university faculty and the researcher. The teacher post conference survey questions were written to collect perception data from participants related to the experiences during the simulation, and to the coaching and feedback immediately following. The instrument items common for each mixed reality experience are demographic variable data collection for current professional role, years of experience in education, years in current role, undergraduate major and on option to provide participant name. Perception data elements common to both surveys were (a) "As a result of this simulation, I feel more confident in speaking with (parents/teachers)", (b) "The simulation was helpful and should continue to be included in the M.Ed. Program", (c) "The simulation was realistic", (d) "This simulation was beneficial", (e) "The coach's feedback was helpful", and (f) "Share any additional comments that you may have in the box provided". Additionally, on the teacher post conference instrument, subjects were asked after the simulation, to rate the extent to which they agreed with the following statement, "I feel more comfortable setting improvement goals with a teacher". Participants were asked to rate each item on the following 5-point Likert scale: strongly disagree (1), disagree (2), neither agree nor

disagree (3), agree (4), strongly agree (5), and no answer/not applicable (n/a). An open dialogue box was included for participants to provide any additional comments.

To answer research question three, participants provided responses to the reflective questions posed by the course instructors. The course instructor assigned reflections to study participants regarding the experience. De-identified copies of the reflections were shared with the researcher and included in the qualitative data.

To answer research question four, participants completing the internship by the end of spring semester 2015 provided responses to an additional perception survey. After completion of a two-semester administrative internship, Educational Leadership M.Ed. students completed an electronic Educational Leadership Exit Survey in which four items related to TeachlivE™ were included. This self-reporting instrument developed by the university collects program culmination data on participants of the program through a behavioral rating scale. Participants were asked to judge personal attitudes using a Likert scale in which each item is given a numerical value. The total score from the items was presumed to indicate the attitude or believe in question (Frankel et al., 2012). A positive response to the survey item, "I participated in an experience in TeachlivE™ while in the educational leadership program", presented participants with three additional survey items specific to the mixed reality experience; (a) "Participation in a TeachLivE™ observation feedback conference simulation increased my effectiveness in giving feedback", (b) "Participation in a TeachLivE™ parent conference increased my effectiveness in communicating with parents", and (c) "I recommend that the faculty continue the use of TeachLivE™ before the students participate in experiences in real

time" (Appendix E). Participants were asked to rate each of the items on the following 4-point Likert scale: strongly disagree (1), disagree (2), agree (3), and strongly agree (4) (Appendix E).

Data Collection Procedures

The study was conducted in compliance with all university Institutional Review Board (IRB) research regulations. All individual identifiers present in the data were removed upon receipt by the university, in adherence with IRB protocol. The researcher utilized quantitative and qualitative data obtained from one university, between the 2013 fall semester and the 2015 spring semester. Data were collected from the fall 2013 though spring 2014 semesters under Institution Review Board approval of a university faculty member as an extension to a Race to The Top funded research grant. Data were collected from summer 2014 and spring 2015 semesters by the researcher after receiving IRB approval (Appendix G).

The scenarios were intended to simulate professional interactions the participants might encounter while serving in real-world school leadership roles. The researcher developed the survey instruments in conjunction with university faculty to align with course content on conferencing and feedback, to be administered immediately following the mixed reality simulation. The data collected represents students' perceptions of the value of the TeachLivE™ experience and the coaching feedback to provide authentic virtual rehearsals as a future school administrator in the two experiences: communicating with parents and teachers through conferencing in order to address the first three research

questions. In addition, university faculty developed three additional items for the existing educational leadership exit survey for students who participated in the mixed reality experience in order to address research question four.

Procedures

The study included data collected as a result of an approved study by university faculty, in which participants were enrolled in two graduate level educational leadership courses that incorporate simulated practice as part of course content practice. For the study, the practice was conducted in the TeachLivE™ laboratory, a mixed reality virtual environment. Participants interacted with the researcher in the classroom setting through the delivery of the orientation for the simulation, as well as through the virtual practice session as the expert coach. In March 2015, the university IRB approved the utilization of this data and the study (Appendix G).

To participate in the research study, students were enrolled in full time face-to-face coursework either Supervisory Practices II (EDS 6130) or Community and School Engagement (EDA 6300) coursework as a requirement in the Instructional Leadership M.Ed. program at the target university. For each course, subjects received a 10-minute orientation to the TeachLivE™ experience during a normal class meeting and time for the two courses involved in the study. During the orientation, class members were provided a verbal description of the simulation practice experience, a description of the laboratory environment, the sequence of events during the 30-minute time block in which partners enter in the simulation lab room. Expectations of professional dress and demeanor while in the lab where included and emphasized by each course instructor. In addition,

participants were provided a paper containing each of the four possible scenarios, one of which was assigned for the practice session. An opportunity was given to participants to silently read through each scenario, then ask clarifying questions on both process of the simulation experience and content contained in the provided scenarios. Participants were informed that one scenario of the four provided was assigned the day of the simulation (Appendix F).

The research was conducted in the TeachLivE™ lab, a simulation system developed by the University of Central Florida. TeachLivE™ is a simulation platform designed to provide authentic practice through low risk virtual environments. This simulation lab was designed to provide pre-service and in-service teachers the opportunity to practice. The technology was expanded to include adult avatars, which were used in this research. The class simulation experience schedule time was not always the same day of the week or time of day from the normal class convening. The instructor and the participants mutually agreed upon times and lab simulation partners. During the simulation a TeachLivE™ sessions, a university moderator was present and visible at the workstation, maintaining the avatar connection during the simulation. Sessions were not recorded. For the study, each participant conferenced with an avatar in a one-on-one situation, in which the participant was the school leader, and the avatar was either a parent or a teacher, depending on the course context. The interactor performance using the adult avatar was intended to provide resistance in communication as it related to the specific scenario assigned to the participant, providing opportunities to practice difficult conversations, while utilizing active listening, collaboration, and conferencing

skills. The avatar resistance level was set at two, four being the highest resistance. The full text for each of the scenarios was provided in advance to the TeachLivE™ staff as part of the time reservation application. Appendix C and D contain the full scenarios provided to both participants and TeachLivE™ staff. Although the researcher was aware of the identity of the subjects, the responses to the survey were complete with the option to remain anonymous. The simulation feedback survey rate of return was 100%.

Setting

The setting of the study included the classroom setting of the two graduate level educational leadership courses involved in the simulation practice, in the simulation practice laboratory, and the virtual environment. Participants interacted with the researcher in the classroom setting, through the delivery of the orientation for the simulation, as well as through the virtual practice session in the role of instructional coach.

Classroom Orientation

For each course, subjects received a 10-minute orientation to the TeachLivE™ experience during a normal class meeting and time for the two courses involved in the study. During the orientation, class members were provided an verbal description of the simulation practice experience, a description of the laboratory environment, the sequence of events during the 30-minute time block in which partners enter in the simulation lab room, as well as expectations of professional dress and demeanor while in the lab. In addition, participants were provided a paper copy containing each of the four possible

scenarios, one of which was the practice for the session. An opportunity was given to participants to silently read through each scenario, then ask clarifying questions on both process of the simulation experience and content contained in the provided scenarios. Participants were informed that one scenario of the four provided was assigned the day of the simulation.

Virtual Environment

The research was conducted in the TeachLivE™ simulation lab, a simulation system developed by the University of Central Florida. TeachLivE™ is a simulation platform designed to provide authentic practice through low risk virtual environments. This simulation lab was designed to provide pre-service and in-service teachers the opportunity to practice. The technology was expanded to include adult avatars, which were used in this research. The researcher developed scenarios jointly with university faculty to align with course content on conferencing and feedback, by anticipating interactions participants might encounter while serving in the real world role of school leader in professional interactions. For the study, participants conferenced with an avatar in a one-on-one situation, in which the participant was the school leader, and the avatar was either a parent or a teacher, based on the course content. The role of the avatar was to provide resistance in communication as it related to the specific scenario assigned to the participant, providing opportunities to practice difficult conversations, while utilizing active listening, collaboration, and conferencing skills. The avatar resistance level was set at two, four being the highest resistance. The full text for each of the scenarios was

provided in advance to the TeachLivE™ staff as part of the time reservation application. Appendix B and C contain the full scenarios provided to both participants and TeachLivE™ staff.

Physical Environment

To participate in the research study, students were enrolled in full time face-to-face coursework either Supervisory Practices II (EDS 6130) or Community and School Engagement (EDA 6300) coursework as a requirement in the Instructional Leadership M.Ed. program at the University of Central Florida. The simulation lab is located within the university college of education main classroom building. The class simulation experience schedule time was not always the same day of the week or time of day from the normal class convening. The instructor and the participants mutually agreed upon times and partners. The TeachLivE™ simulation lab room contained a small table at the door to hold the surveys for completion at the end of the simulation, a table and chair simulating a desk which faced a large LCD monitor, situated in the central portion of the room on a rolling cart. A video capture camera mounted on the LCD provided a visual connection from the participant in the simulation lab to the avatar. A microphone pack was placed on the table, being used as the conferencing desk, to provide audio connection from the participant to the avatar. Seating for the course instructor, the researcher/coach and the simulation partner lined the back wall of the room for unobtrusive observation. In addition, a six-foot graduating down to four foot high soft-walled cubical on the left wall contained a computer station connected to the LCD monitor, and a workstation for a

university staff member to be present for technical support during the simulation experience. During the simulation a TeachLivE™ sessions, a university support person was present and visible at the workstation and monitored the avatar connection. Sessions were not recorded. Technical difficulties during the simulation sessions in the spring semester of 2014 impacted two participants. During the session a building wide network issue interrupted the session. The participant experienced the avatar freezing action. The participants were asked to step outside of the lab so the simulator could be reset.

Quantitative Data Collection

Quantitative methods for the study included the responses to Likert scaled items, designed to collect perceptions of the use of the simulation practice as a realistic practice environment, and the value of the coaching and feedback during the TeachLivE™ coaching session. In August 2013, the researcher met with university faculty to define the data to be collected to extend the existing Race to The Top funded research. The simulation feedback survey instruments and scenarios were developed to meet the specific content requirements of the two target courses, for use with the Educational Leadership students. Data collected between the fall semester 2013 and spring semester 2015 were used to complete the study. University faculty independently developed questions related to the TeachLivE™ experience to be added to the existing Educational Leadership Exit Survey. Data were provided to the researcher by the university for the study, within the scope of IRB approval.

Through consultation with university faculty, it was determined that questions on the simulation feedback survey were to used to determine participants' perceptions of the effect, if any, the simulated virtual practice enhanced the development of communication skills was used for Research Question 1.

For Research Question 2, the questions on the simulation feedback survey were used to determine participants' perception of the effect, if any, the coaching and feedback provided directly after the simulated practice enhanced the development of communication skills. The instrument provided the researcher information as to the participants' perception. The ability to revise knowledge and practice as a result of the feedback through repeated performance was not measured.

Table 9

Survey Questions

Construct	Post Observation Conference	Parent Conference	Program Exit Survey
Simulation was realistic	x	x	
Coaching feedback was helpful	x	x	
Feel more confident in speaking	x	x	
Simulation was beneficial	x	x	
Simulation should continue	x	x	x
Confidence in setting goals with teachers	x		
Simulation increased effectiveness in giving feedback			x
Simulation increased effectiveness is communication			x

Note. 5-point Likert Scale, five most positive ranking

For Research Question 3, responses to the open ended item located on the simulation feedback survey was used, as well as the reflection assignment responses provided by the course professors to determine participants' perceptions of the benefits of the mixed reality experience in development of communication skills.

For Research Question 4, educational leadership exit survey data were used to determine participants' perceptions of the benefits of the mixed reality experience in development of communication skills after completing the second semester administrative internship hours.

Qualitative Measures

The qualitative methods of the study include the responses from the open ended items on the survey immediately following the simulation practice, as well as the criterion sample; participants that completed a reflection assignment if asked to do so by faculty assigned to the courses (Lunenburg & Irby, 2008). Data collected from the open-ended items were analyzed using a constant comparison method, or coding, as described by Krathwohl (2009). The open-ended survey times were analyzed for recurring themes, trends and patterns, searching for commonly used words and or phrases and coding each occurrence. Tables were created to organize the categories and themes that emerged from specific comments from participants were included as evidence of the interpreted results.

Responses were read by the researcher, then reread in preparation to identify preliminary themes and/or patters. Data were organized into themes by highlighting

common or similar phrases within the responses, coded and as a dichotomous categorical dependent variable. Reflection responses provided to the researcher by course instructors were read for the purpose of identification of preliminary themes and patterns (Frankel et al., 2012). Responses were reread and specific content was organized into themes, coded for analysis (Bowen, 2009). For Research Question 3, the open-ended response data were used, as well as de-identified reflections provided by course instructors to determine participants' perceptions of the benefits of the mixed reality experience in development of communication skills.

Data Analysis

In this mixed method study, the method of analysis for quantitative and qualitative data collected is described separately. A description of the research questions, the independent and dependent variables, and statistical methods used can be found in Table 9.

Quantitative

The quantitative Likert scaled data collected from three perception instruments, Educational Leadership Teacher Post Conference Simulation Feedback, Educational Leadership Parent Conference Simulation Feedback, and Educational Leadership Exit Survey, were entered into an Excel 2013 spreadsheet with response ratings from 1 to 5 for all of the 141 respondents along with demographic variable data as provided, and then uploaded into SPSS version 22 for statistical analysis. Quantitative data collected for

research questions one and two, obtained through perception survey instruments co-developed by university faculty and the researcher, were analyzed, using IBM SPSS version 22 in order to maintain objectivity fidelity. The data were used to measure the participant perception of the professional practice benefits of the use of the mixed reality experience with coaching and feedback as a means to authentically practice communication and conferencing skills with parents and teacher. Tests of statistical analysis were calculated to determine the perceptions of educational leadership master's degree students' development of communication skills. The frequency and percent of responses were displayed using descriptive statistics and tables. A table showing the demographic variable breakdown of participants was obtained from the SPSS program.

The quantitative data for research question four were analyzed through data collected on the university Educational Leadership Exit survey, using questions specifically designed for student perceptions of the usefulness of the mixed reality simulation after the field experience and internship. The quantitative data with responses ranging from 1 to 4 were analyzed independently then combined using IBM SPSS version 22 in order to maintain fidelity of analysis implementation. Descriptive statistics were operationalized through measures of central tendency including frequency, raw percentages, mean, and mode for research questions one, two, three and four. All data are described in detail in future chapters, to provide information for replication of findings.

Qualitative

Research question three used qualitative data collected through a compilation of responses from reflection assignments by individual course instructors which included participants' reflective perceptions of the usefulness of the mixed reality simulation, feedback and coaching in preparation for the field experience and internship. Qualitative data provided by participants on open-ended responses through reflection assignments and an open-ended item on the Educational Leadership Feedback surveys was organized into categories and themes, coded then tallied by the researcher for research question three. The coded tallies were collected as recorded as frequencies and percentages in order to determine emerging themes in regards to perceptions of the mixed reality experience (Lunenburg & Irby, 2008).

Table 10

Research Questions, Sources of Data, Analysis, and Variables

Research Questions	Data Sources	Data Analysis
1. To what extent do Educational Leadership M.Ed. students believe the TeachLivE™ parent conference and teacher post observation conference simulation experiences to be helpful in developing their communications skills with parents and teachers?	TeachLivE™ Parent Conference Simulation survey TeachLivE™ Teacher Post Conference Simulation survey	Descriptive statistics means, median, mode and standard deviations.
2. To what extent do Educational Leadership M.Ed. students believe the TeachLivE™ coaching feedback was helpful in developing their communications skills with parents and teachers?	TeachLivE™ Parent Conference Simulation survey TeachLivE™ Teacher Post Conference Simulation survey	Descriptive statistics means, median, mode and standard deviations.
3. To what extent do student reflections of the TeachLivE™ experience indicate that it is beneficial in increasing skill in communicating with parents and teachers immediately following the mixed reality simulation?	Instructor Reflection Assignment following the mixed reality experience	Code and categorize responses Descriptive statistics and frequencies.
4. To what extent do M.Ed. in Educational Leadership students perceive the TeachLivE™ 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?	Educational Leadership Exit Survey positive response to item 21 and preceding responses coded as Q20, Q21 and Q22.	Descriptive statistics means, median, mode and standard deviations.

Research Question One

For research question one, perceived value of the use of the avatar controlled by an interactor to simulate conferencing to practice communication skills was measured by the participants' self-reported perception of communication skill development using Likert scaled survey questions immediately following the mixed reality practice simulation. The research question relied on a quantitative analysis of participant responses to Likert scaled survey questions immediately following the mixed reality practice simulation. Descriptive and inferential statistics were analyzed. Descriptive statistics were operationalized through measures of central tendency including frequency, raw percentages, mean, median, and mode.

Research Question Two

For research question two the perceived value of the coaching and feedback provided to the participants was measured by the participants' self-reported perception of communication skill development using Likert scaled survey questions immediately following the mixed reality practice simulation. Research question two relied on a quantitative analysis of participant responses to Likert scaled survey questions immediately following the mixed reality practice simulation. Descriptive statistics and inferential statistics were operationalized through measures of central tendency including frequencies, raw percentages, mean, median, and mode.

Research Question Three

Research question three was the use of the avatar controlled by an interactor to simulate conferencing to practice communication skills. Data collected relied on a qualitative analysis of participant responses to an open-ended item on the post participation instrument following the mixed reality practice simulation and through open-ended responses through reflection assignments. The researcher coded, then classified these responses, and tallied the code frequencies in order to determine emerging themes in regards to perceptions of the mixed reality experience (Lunenburg & Irby, 2008). Descriptive and inferential statistics were operationalized through measures of central tendency including frequency, raw percentages, mean, median, and mode.

Research Question Four

For research question four, the perceived value of the use of the avatar controlled by an interactor to simulate conferencing to practice communication skills was measured by the participant's self-reported perception of communication skill development using Likert scaled survey questions after completion of the field experience and internship. Research question four relied on a quantitative analysis of participant responses to Likert scaled perception data collected by the university through the program exit survey after concluding the field experience and internship. Descriptive and inferential statistics were operationalized through measures of central tendency including frequency, raw percentages, mean, median, and mode.

Summary

This chapter discussed the study purpose, data collection procedures collection of data and response rates used to conduct this mixed methods study. The purpose for conducting this researched was to determine Educational Leadership M.Ed. students' perceived value of virtual reality administrative conferencing practice with immediate coaching and feedback in preparation for Educational Leadership internship experiences. The research further analyzed the perceived value of the mixed reality experience with immediate coaching and feedback after the completion of the second semester internship for educational leadership. The research design as well as data collection procedures were presented, as well as the instrumentation used in the data collection. A rationale was provided for the analysis methods selected. The data for Research Questions one and two were obtained through perception survey instruments co-developed by university faculty and the researcher. Research Question three data were collected through perception survey instruments, as well as compilations of responses from reflection assignments by individual course instructors. The data for Research Question four was collected on the university Educational Leadership Exit survey as targeted questions for participants in the mixed reality simulation experience. Lastly, details of statistical measures used in the analysis of the data to respond to each of the research questions. Results of the data analysis are presented in Chapter four.

CHAPTER FOUR: DATA ANALYSIS

Introduction

The first purpose of the study was to ascertain the perception of Educational Leadership M.Ed. students related to the mixed reality experiences using TeachLivE™ in preparation for the challenges of communication and conferencing as a school administrator. The second purpose was to determine the perceived value of coaching feedback received immediately following TeachLivE™ mixed reality experiences as well as at the conclusion of a program-required internship. Students completed an online end-of-program survey from the university that included constructs pertaining to the perceived value of the mixed reality experience and immediate coaching and feedback in preparation for school leadership.

Population

The population of the study was comprised of Educational Leadership M.Ed. students at the university, between fall semester 2013 and spring semester 2015. From this convenience sample, research participants completed the perception surveys after completing the mixed reality experience. The sample was limited to those who completed the internship by spring 2015 and responded to exit surveys at the end of the administrative internship.

Participant Demographic Variables

The researcher collected qualitative and quantitative data from fall semester 2013 and spring semester 2015 in two Educational Leadership M Ed. courses: Educational Supervisory Practice II (EDS 6130) and Community School Administration (EDA 6300), through the use of simulation exit surveys and self-reflection documents completed after the simulation experience. Post internship program exit surveys were collected from participants that completed the internship through the spring semester 2015. In addition to perceptual data, demographic variable data were collected in the first section of the simulation experience exit survey though open-ended questions. Of the 141 participants, 70 were enrolled in Community School Administration and 71 were enrolled in Educational Supervisory Practice II.

The first question prompted participants to provide their professional title. Based on the job titles provided, participant responses were grouped and reported in the following categories: 114 participants' (80.9%) job titles required a Florida Department of Education professional certificate/license, 2 participants' (1.5%) job titles did not require a Florida Department of Education professional certificate/license, 7 participants' (4.9%) reported job titles were unclear, not reported, or reported as not yet employed in an education institution; and 18 participants (15.8%) did not provide a response. Table 11 provides a summary of reported job title reported and categorized by certification requirements.

Table 11

Professional Titles of Participants (N = 141)

Requirement of Certification and Job Title	Frequency (*f*)	Percent (%)
Professional Certificate/license Required		
Teacher	85	60.28
Dean (instructional/not administrative)	8	5.67
Instructional Coach	6	4.26
Principal	5	3.35
Administrator	4	2.84
Safe Coordinator	2	1.42
Staffing Coordinator	2	1.42
Reading Coach	1	.71
Support Facilitator	1	0.71
Professional Certificate/license Not Required		
Paraprofessional	1	0.71
Substitute	1	0.71
Professional Certificate/license Unknown		
Not Reported	18	12.77
Not yet working in a school	4	2.84
Graduate Residence Coordinator	2	1.42
Academic Mentor	1	0.71

Participants provided the number of years of experience in education, without qualifying the experience as to public, private, K-12 or university setting, at the time of the mixed reality simulation in response to the second open-ended construct. Data were collected and reported in the following year ranges: 4 participants (2.84%) had no educational employment background; 48 participants (34.0%) indicated less than 1 year and up to 3 years of experience; 37 participants (26.2%) indicated 4-6 years of experience; 22 participants (15.6%) indicated 7-10 years of experience; 19 participants (13.5%) indicated 11-15 years of experience; 5 participants (3.6%) indicated more than

15 years of experience; and 6 participants (4.3.%) did not provide a response. The mean number of years of experience in education was 5.79 years. Table 12 displays the total years of experience in education among study participants.

Table 12

Total Years of Experience in the Education Profession (N = 141)

Years of Experience in Education	Frequency (*f*)	Percent (%)
No experience	4	2.84
In first year up to 3 years	48	34.04
4-6 years	37	26.24
7-10 years	22	15.60
11 -15 years	19	13.48
More than 15 years	5	3.55
Not Reported	6	4.26

Note. *M* = 5.70 years of experience in education

In response to the third open-ended construct, participants indicated the number of years of experience in their current professional role in education. Data were collected and reported in the following ranges of years: 14 participants reported less than one year of experience; 80 participants (56.7%) reported from one to three years experience; 27 participants (19.2%) indicated between 4 and 6 years of experience; 11 participants (7.8%) indicated 7 to 10 years of experience; 1 participant (0.7%) reported more than 10 years of experience; and 8 participants (5.7%) did not respond. Table 13 provides a summary of years of experience in their current, job title, in ranges of years of experience.

Table 13

Years of Experience in Current Professional Role (N = 141)

Years of Experience	Frequency (*f*)	Percent (%)
1-3 years	80	56.74
4-6 years	27	19.15
Less than 1 year	14	9.93
7-10 years	11	7.80
More than 10 years	1	0.71
Not Reported	8	5.67

Undergraduate major data of the participants were collected in an open-ended survey item in order to determine the bachelors level collegiate experiences participants had prior to participating in the mixed reality simulation. Based on declared undergraduate majors, participants were grouped and reported. The majority of participants (n = 94; 67%) had an undergraduate degree from an educator preparation institution. The next largest degree group (n = 13; 0.1%) had undergraduate degrees from a college that included social sciences. The remainder of the participants (n = 24; 17%) had undergraduate degrees from a college that included interdisciplinary studies, legal studies, business, digital media, engineering, English, science, Spanish, communications, social work, and sports exercise with a range of participants from 1-4 each. Ten participants (7.1%) did not provide a response. Table 14 displays the participants' undergraduate degrees in relation to the mixed reality simulation experience.

Table 14

Undergraduate Degree Major (N = 141)

List of Majors	Parent Conference Frequency (%)	Teacher Post Conference Frequency (%)
Education	46 (32.62)	48 (34.04)
Social Science	8 (5.67)	5 (3.54)
Interdisciplinary Studies	4 (2.83)	0 (0.71)
Business	2 (1.42)	1 (0.71)
Legal Studies	2 (1.42)	2 (1.42)
Digital Media	1 (0.71)	1 (0.71)
Engineering	0 (0)	2 (1.42)
English	1 (0.71)	1 (0.71)
Communications	1 (0.71)	0 (0.0)
Science	1 (0.71)	1 (0.71)
Social Work	0 (0)	1 (0.71)
Spanish	1 (0.71)	1 (0.71)
Sports Exercise	1 (0.71)	0 (0.0)
Not Reported	2 (1.42)	8 (2.84)

Job title responses of the 114 participants requiring a Florida Department of Education teaching certificate were analyzed and reported in relation to job function. The majority of participants (n = 42; 36.8%) had three years or less experience in their current job function. The second grouping of participants (n = 34; 29.8%) had from four to six years of experience in their job function. The remaining participants (n = 38; 33.3%) had seven or more years of experience in their current job function. Table 15 provides a summary of self-reported professional roles and total years of experience in education in relation to the simulation experience, parent conference or teacher post conference.

Table 15

Years of Experience in Education by Simulation Experience (N = 114)

Total Years of Experience and Job Classification	Parent Conference Frequency (%) *n* = 60	Teacher Post Conference Frequency (%) *n* = 54
Less than 1 year		
Classroom Teacher	0 (0.0)	0 (0.0)
Instructional Support	0 (0.0)	0 (0.0)
Administrative	0 (0.0)	0 (0.0)
1-3 years		
Classroom Teacher	18 (30.0)	18 (33.3)
Instructional Support	1 (1.6)	1 (1.8)
Administrative	1 (1.6)	3 (5.5)
4-6 years		
Classroom Teacher	11 (18.3)	16 (29.6)
Instructional Support	3 (5.0)	2 (3.7)
Administrative	1 (0.0)	1 (1.8)
7-10 years		
Classroom Teacher	8 (13.3)	3 (5.5)
Administrative	3 (5.0)	2 (3.7)
Instructional Support	2 (3.3)	0 (0.0)
More than 10		
Classroom Teacher	6 (10.0)	5 (8.2)
Instructional Support	6 (10.0)	2 (1.8)

Note. Twenty-seven participants did not provide either job title or years of experience resulting in *N* = 114

Analyzing the Research Questions

The study was guided by four research questions that were answered with data collected from the following three perception surveys: TeachLivE™ Educational Leadership Parent Conference Simulation Feedback survey, TeachLivE™ Educational Leadership Teacher Conference Simulation Feedback survey, and Educational Leadership Exit Survey.

The instrument items common for each mixed reality experience were: (a) "As a result of this simulation, I feel more confident in speaking with (parents/teachers)", (b) "The simulation was helpful and should continue to be included in the M.Ed. program", (c) "The simulation was realistic", (d) "This simulation was beneficial", (e) "The coach's feedback was helpful" (Appendix A and Appendix B). Additionally, participants were asked to provide any additional comments in an open-ended response box below each of the aforementioned survey items. Unique to the teacher conference instrument, subjects were asked, after the simulation, to rate the extent to which they agreed with the following statement, "I feel more comfortable setting improvement goals with a teacher." Each item was rated by the subject on a 5 point Likert scale: strongly disagree (1), disagree (2), neither agree nor disagree (3), agree (4), strongly agree (5), and no answer/not applicable (n/a). These surveys can be found in Appendix A and Appendix B.

In addition to the perception survey completed immediately following the mixed reality practice, the course instructor assigned students to reflect on the experience. De-identified copies of student reflections were provided to the researcher to include in the qualitative analysis for the study.

After completing the core content coursework, all participants were required to complete 180 hours of field experience in the form of a two-semester administrative internship and practice with teachers and parents. After the administrative internship, students completed the electronic Educational Leadership Exit Survey, which included four items related to the TeachlivE™ experience. The instrument contained a behavioral rating scale asking participants to judge their personal attitudes using a Likert scale in

which each item was given a numerical value, and the total score was presumed to indicate the attitude or belief in the question (Frankel et al., 2012).

If a student indicated that they had not participated in the TeachLivE™ experience, they proceeded to the next item. With a positive response to the construct, "I participated in an experience in TeachlivE™ while in the educational leadership program", the student was presented with three additional survey items; (a) "Participation in a TeachLivE™ observation feedback conference simulation increased my effectiveness in giving feedback", (b) "Participation in a TeachLivE™ parent conference increased my effectiveness sin communicating with parents", and (c) "I recommend that the faculty continue the use of TeachLivE™ before the students participate in experiences in real time" (Educational Leadership Exit Survey, 2014; Appendix E). Each item was rated on the following 4-point Likert scale; strongly disagree (1), disagree (2), agree (3), strongly agree (4). Each research question and corresponding data analysis are presented in the following sections of this chapter.

Research Question One

To what extent, if any, do Educational Leadership M.Ed. students believe the TeachLivE™ parent conference and teacher post observation conference simulation experiences to be helpful in developing their communications skills with parents and teachers?

The Likert scale item asking if the simulation experience was realistic was highly rated, with 133 of the 141 participants (94.3%) indicating they agreed or strongly agreed, with only three participants response ratings low (2.8%), indicating they disagreed or

strongly disagreed. Table 16 displays the results for this construct for all mixed reality simulation participants.

Table 16

Realistic Responses by Simulation Experience (N = 141)

Response	Frequency	Percent
Strongly Agree	89	63.1
Agree	44	31.2
Neither Agree or Disagree	5	3.5
Disagree	2	2.1
Strongly Disagree	1	0.7
No Response	0	0.0
Total	141	100.0

Disaggregating the responses from the parent conference and the teacher conference simulation experience simulation exit survey, the participant perceptions of the realistic nature of each simulation was highly rated with 66 of the 70 parent conference simulation participants (94.3%) responding with agree or strongly agree, with no participants indicating disagreement. The teacher post-conference simulation participants also rated the realistic nature of the experience high with 67 of the 71 respondents (94.3%) indicating that they agreed or strongly agreed. Only one participant's response rating was low (1.4%) indicating strongly disagreed. Table 17 displays the disaggregated results for this item.

Table 17

Realistic Nature of Simulations by Parent and Teacher Conference

Response	Parent Conference Frequency (%)	Teacher Conference Frequency (%)
Strongly Agree	48(68.6)	41 (57.7)
Agree	18 (25.7)	26 (36.6)
Neither Agree or Disagree	4 (5.7)	1 (1.4)
Disagree	0 (0)	2 (2.8)
Strongly Disagree	0 (0)	1 (1.4)
No Response	0 (0)	0 (0)
Total	70 (100)	71 (100)

Note. Simulation exit survey perception survey responses.

The Likert scale item, "As a result of this simulation, I feel more confident in speaking," was highly rated by participants with 127 of the 141 participants (90%) indicating they agreed or strongly agreed, with only four participants' (2.8%) responses ratings low, indicating they disagreed or strongly disagreed. Table 18 displays the results for this item for all mixed reality simulation participants.

Table 18

More Confident in Speaking Responses (N = 141)

Response	Frequency	Percent
Strongly Agree	58	41.1
Agree	69	48.9
Neither Agree or Disagree	10	7.1
Disagree	3	2.1
Strongly Disagree	1	0.7
No Response	0	0.0
Total	141	100.0

Disaggregating response data by the two simulations, responses for confidence in speaking as a result of this simulation, was highly rated with 65 of the 70 parent conference simulation participants (92.9%) indicating they agreed or strongly agreed, with only one participant response rating low (1.4%) indicating they disagreed. The teacher post-conference simulation participants also rated speaking confidence highly with 62 of the 71 teacher post-conference participants (87.3%) indicating they agreed or strongly agreed, with three participant's response ratings low (4.2%) indicating they disagreed or strongly disagreed. Table 19 displays the disaggregated results for this construct.

Table 19

Disaggregated Responses for More Confidence in Speaking

Response	Parent Conference Frequency (%)	Teacher Conference Frequency (%)
Strongly Agree	35 (50.0)	23 (32.4)
Agree	30 (42.9)	39 (54.9)
Neither Agree or Disagree	4 (5.70	6 (8.5)
Disagree	1 (1.4)	2 (2.8)
Strongly Disagree	0 (0.0)	1 (1.4)
No Response	0 (0.0)	0 (0.0)
Total	70 (100)	71 (100)

Note. Simulation exit survey perception responses

The construct unique to the teacher post-conference simulation of more confidence in goal setting with teachers as a result of the simulation experience was rated by 69 of the 71 participants. Of the responses provided, the construct was highly rated by participants with 63 of 69 participants (91.3%) indicating they agreed or strongly agreed. Three participants (4.3%) answered the item with disagreed or strongly disagreed. Table

20 displays the results for this construct for the 71 participants of the teacher post conference simulation experience.

Table 20

More Confidence in Goal Setting with Teachers Responses

Response	Frequency	Percent
Strongly Agree	45	97.2
Agree	18	63.4
Neither Agree or Disagree	3	25.4
Disagree	2	4.2
Strongly Disagree	1	2.8
No Response	2	1.4
Total	71	100.0

A participant response of not applicable or no answer was treated as a missing value and not included in the responses used to calculate the descriptive statistics shown in Table 21. Descriptive statistics for the perception of the simulation as related to being a helpful practice to improve communication conferencing skills with parents and teachers are shown in Table 21. The highest mean values for parent conference simulation participants were for the simulation being a beneficial practice ($M = 4.71$) and a realistic practice, ($M = 4.63$). The highest mean values for teacher conference simulation participants were also for the simulation being a beneficial practice ($M = 4.59$) and a realistic practice ($M = 4.46$). Participants for both simulations rated more confidence in speaking high with a parent conference mean value of 4.41 (close to "strongly agree"), and a teacher conference mean value of 4.14 (close to "agree").

Teacher conference participants rated their confidence specific to goal setting with teachers high with a mean value of 4.51 (between "agree" and "strongly agree").

Table 21

Descriptive Statistics for Benefits and Communication.

Component	*n*	*M*	*Mdn*	Mo	*SD*
Realistic Simulation					
Parent Conference	70	4.63	5.0	5.0	.594
Teacher Conference	71	4.46	5.0	5.0	.790
More Confidence Speaking					
Parent Conference	70	4.41	4.5	5.0	.670
Teacher Conference	71	4.14	4.0	4	.798
Benefit of Practice					
Parent Conference	70	4.71	5.0	5.0	.486
Teacher Conference	71	4.59	5.0	5.0	.729
Confidence in Goal Setting with Teachers	69 (2)	4.51	5.0	5.0	.834

Research Question Two

To what extent, if at all, do Educational Leadership M.Ed. students believe the TeachLivE™ coaching feedback was helpful in developing their communications skills with parents and teachers?

The construct for the perception of the helpfulness of the coach's feedback was highly rated for parent conference simulation participants with 137 participants (97.2%), indicating they agreed or strongly agreed. Two participants (1.4%), rated the construct with disagreed or strongly disagreed. One participant (0.7%) did not agree or disagree. One participant (0.7%) did not provide a response. Table 22 displays the results for this construct for all mixed reality simulation participants.

Table 22

Feedback of the Coach Was Helpful (N = 141)

Response	Frequency	Percent
Strongly Agree	119	84.4
Agree	18	12.8
Neither Agree or Disagree	1	0.7
Disagree	1	0.7
Strongly Disagree	1	0.7
No Response	1	0.7
Total	141	100.0

Disaggregating the two simulations, helpfulness of coaching feedback after simulation was highly rated by 69 of the 70 parent conference simulation participants (98.5%) indicating they agreed or strongly agreed, with only one participant response rating low indicating they neither agreed or disagreed. The teacher post-conference simulation participants also rated speaking confidence highly with 68 of the 71 teacher post-conference participants (95.6%) indicating they agreed or strongly agreed, with two participant's response ratings low (2.8%) indicating they disagreed or strongly disagreed and one participant (1.4%) providing no response. Table 23 displays the disaggregated results for this construct.

Table 23

Disaggregated Feedback Responses

Response	Parent Conference Frequency (%)	Teacher Conference Frequency (%)
Strongly Agree	61(87.1)	58 (81.7)
Agree	8 (11.4)	10 (14.1)
Neither Agree or Disagree	1 (1.4)	0 (0.0)
Disagree	0 (0.0)	1 (1.4)
Strongly Disagree	0 (0.0)	1 (1.4)
No Response	0 (0.0)	1(1.4)
Total	70 (100)	71 (100)

The five point Likert scale construct asking if the simulation experience was beneficial and should continue as a part of the Educational Leadership M.Ed. program was highly rated with 137 participants (97.2%) indicating they agreed or strongly agreed, and only two participants (1.4%) indicating they disagreed or strongly disagreed. Table 24 displays the results for this construct for all mixed reality simulation participants.

Table 24

Simulation was Beneficial Responses (N = 141)

Response	Frequency	Percent
Strongly Agree	99	70.2
Agree	38	27.0
Neither Agree or Disagree	2	1.4
Disagree	1	0.7
Strongly Disagree	1	0.7
No Response	0	0.0
Total	141	100.0

Disaggregating the two simulations, the Likert scale construct asking if the simulation experience was beneficial and should continue as a part of the program was highly rated with 69 of the 70 parent conference simulation participants (98.6%) indicating they agreed or strongly agreed, with no participant response ratings low indicating they disagreed or strongly disagreed. The teacher post-conference simulation participants also rated highly with 68 of the 71 participants (95.8%) indicating they agreed or strongly agreed, with two participants' responses ratings low (2.8%) indicating they disagreed or strongly disagreed. Table 25 displays the disaggregated results for this construct for participants of the parent conference simulation and the teacher post conference simulation.

Table 25

Beneficial Responses by Simulation Experience

Response	Parent Conference Frequency (%)	Teacher Conference Frequency (%)
Strongly Agree	51(72.9)	48 (67.6)
Agree	18 (25.7)	20 (28.2)
Neither Agree or Disagree	1 (1.4)	1 (1.4)
Disagree	0 (0.0)	1 (1.4))
Strongly Disagree	0 (0.0)	1 (1.4)
No Response	0 (0.0)	0 (0.0)
Total	70 (100)	71 (100)

Note. Simulation exit survey perception responses

Participant responses of not applicable or no answer were treated as a missing value and not included in the responses used to calculate the descriptive statistics shown in Table 26. Descriptive statistics for the perception of the coaching and feedback as it

relates to improving conferencing skills with parents and teachers (Table 22) found the highest mean values for parent conference feedback and coaching with a mean of 4.86 (close to "strongly agree") and benefit of the experience with parent conferencing with a mean of 4.71 (close to "strongly agree"). The mean values for teacher conferencing were similar with a mean of 4.76 (close to "strongly agree") for feedback and coaching and a mean of 4.59 (between "agree" and "strongly agree") for benefit of the experience.

Table 26

Descriptive Statistics for Value Placed on Parent Conference Perception.

Component	*n*	*M*	*Mdn*	Mode	*SD*
Feedback					
Parent Conference	70	4.86	5.0	5.0	.391
Teacher Conference	71	4.76	5.0	5.0	.669
Benefit					
Parent Conference	70	4.71	5.0	5.0	.486
Teacher Conference	71	4.59	5.0	5.0	.729

Research Question Three

To what extent do student reflections of the TeachLivE™ experience indicate it is beneficial in increasing skill in communicating with parents and teachers immediately following the mixed reality simulation?

The reflection assignment responses provided by the course instructors contained a variety of information related to the simulation experience. The instructors provided participant reflective assignments to the researcher. Each assignment was read for content, and then read again for organization. The researcher arranged responses into the following categories: (a) retelling of the experience, (b) general comment on the simulation experience, (c) general comment on the coaching and feedback, (d) general

comment on participant personal performance, (e) specific comment on the simulation experience, (f) specific comment on the coaching and feedback, and (g) specific comment on the participants personal performance (Table 27). The frequencies reported represent the comment category for all simulation participants in which a reflection assignment was received. Individual participant responses contained a combination of the listed categories. Each comment was counted separately generating 132 unique data points. Of the comments, 14 (10.6%) were categorized as a retelling of the simulation experience, without reflection. General comments are most frequent (62.8%) with personal performance during the simulation being most frequent (49.2%). Table 27 displays the frequency of comment categories for all simulation participant reflections.

Table 27

Reflection Assignment Comments Provided by Participants (n = 132)

Category of Comment	Frequency	Percent
Retelling of Experience	14	10.6
General Comments		
Personal Performance	46	34.8
Coaching and Feedback	24	18.2
Simulation Experience	13	9.8
Specific Comments		
Personal Performance	19	14.4
Coaching and Feedback	9	6.8
Simulation Experience	7	5.3

Note. Each comment was categorized individually and is represented in the frequency.

The researcher further analyzed and disaggregated the comment categories and identified themes. Table 28 represents the frequency of reoccurring themes across the comment categories with regards to the generality or specificity of the comments.

Table 28

*Frequency of Themes for all Comment Categori*es

Themes	General	Specific
Planning	19	4
Communication	16	13
Clarity	15	0
Confidence	14	12
Beneficial	7	0
Realistic	3	3
Professionalism	3	1
Critical Conversations	3	0
Valuable	3	0

Disaggregation of each general simulation comment category was further evaluated for additional detail, and then themes emerged regarding the simulation as beneficial, realistic, and valuable. All general comments provided regarding the simulation were favorable, which is consistent with the Likert scaled survey items. One participant comment indicative of all comments on the beneficial nature of the experience stated, "The simulation was very beneficial to me and I would like the opportunity to take part in it again." Frequencies (Table 29) represent the general simulation comment categories for all participants.

Table 29

General Simulation Comments (n = 13)

Theme of Comment	Frequency	Percent
Beneficial	7	53.8
Realistic	3	23.1
Valuable	3	23.1

Disaggregation of each general feedback comment category was evaluated for additional detail, and the following themes were generated regarding the feedback immediately following the simulation as focused on clear communication, confidence in conferencing, and the importance of having critical conversations. One participant response indicative of the theme on the importance of clear communication was, "quality over quantity in terms of questioning." The frequencies (Table 30) represent the general feedback comment category themes for all simulation participants.

Table 30

General Feedback Comments (n = 24)

Theme of Comment	Frequency	Percent
Importance of Clear Communication	15	62.5
Gain Confidence in Conferencing	6	25.0
Importance of Critical Conversations	3	12.5

Disaggregation of each general personal performance comment category was evaluated for addition detail, and then themes were generated regarding the simulation as focused on the importance of planning, the need to be clear in communication, increasing confidence while conferencing, and being professional during conferences. The majority of responses involved discussions of being prepared and planning for conferencing

(41.3%). Also prevalent in the clear communication comments was the need to use active listening techniques. The frequencies (Table 31) represent the general personal performance comment category themes for all simulation participants.

Table 31

General Personal Performance Comments (n = 46)

Theme of Comment	Frequency	Percent
Planning	19	41.3
Communication	16	34.8
Confidence in Speaking	8	17.4
Professionalism	3	6.5

Each specific simulation comment category was evaluated for addition detail, and then themes were generated regarding the simulation experience. As comments were further analyzed and disaggregated; two themes were identified equally regarding the simulation as a tool to help develop confidence in communication skills and provide realistic practice. An example of one participant comment for the realistic practice was, "During the activity, it is like you are actually interacting with a live person and it was a valuable learning experience as a future school administrator". One participant comment for the development of communication skills stated, "If I could log more hours and experience different scenarios, that I would become a stronger administrator. I have learned I need much more practice, and would like much more practice. I wish there was a way that students could sign up to practice whenever they could". The frequencies (Table 32) represent the comment category themes for simulation participants.

Table 32

Specific Simulation Comments Themes (n = 7)

Theme of Comments	Helped Improve Frequency (%)	Weakness Frequency (%)
Realistic Practice	3	42.8
Confidence in Communication	3	42.8

Note. Each comment a participant provided was categorized individually and is represented in the frequency. More than one comment may have been generated by a single participant.

Disaggregation of each specific feedback comment was evaluated for addition detail, then themes were generated regarding the simulation feedback and coaching as focused on improving communication skills and confidence in conferencing. One participant comment focused on the importance of looking at someone else's perspective in situations. Specific feedback comments contained references to specific situations that transpired during the simulation and how the feedback session impacted learning. An example of an improvement in communication skills, "From the feedback, I realized I missed several key points. In my haste I failed to explain that her son was suspended". Confidence in conferencing skills also provided specific reference to the simulation; one participant wrote:

> There was a point when we were both talking at the same time and she stopped to apologize. I immediately told her that was fine and let her continue. This is the part of the coaching session that was brought to my attention. I was told that I did a good job at listening to her and making her feel special. I learned that it is ok to let others have the floor even though you are the leader.

The frequencies (Table 33) represent the specific feedback comment category themes for all simulation participants.

Table 33

Specific Feedback Comments (n = 9)

Category of Comment	Frequency	Percent
Improving Communication Skills	5	55.5
Confidence in Conferencing Skills	3	33.3

Disaggregation of each specific personal performance comment was evaluated for additional detail, and then the following categories were generated regarding the simulation impact on personal performance as an impact on communication skills: confidence in speaking, and the need to plan for conferencing. One participant comment addressed the importance of relationship building. The participant said, "I found it somewhat uncomfortable that the scenarios were based around a student I didn't know. This stressed the importance of being highly visible within my school so I can maintain relationship with my students, families and staff". The most prevalent theme in personal performance was related to development of communication skills. One participant shared, "I learned I need to focus better on what parents are telling me in a meeting. Listening carefully and pausing to create a correct response would result in a more successful meeting". Comments in speaking confidence contained situational references to unsuccessful portions of the simulation experience, sharing a lack of confidence impacted performance, for example, "I noticed that when the parent shows dominance, I have trouble turning the tables back to my side. Part of this is out of fear of not knowing

what I am actually allowed to say". The frequencies (Table 34) represent the specific personal performance comment category themes for all simulation participants.

Table 34

Specific Personal Performance Comments (n = 19)

Category of Comment	Frequency	Percent
Communication Skills	8	42.1
Confidence in Speaking	6	31.6
Planning	4	21.0

Research Question Four

To what extent do Educational Leadership M.Ed. students perceive the TeachLivE™ 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?

After completion of the internship and practice, all Educational Leadership M.Ed. students complete an electronic Educational Leadership Exist Survey, which contains four items specific to participation in the TeachLivE™ simulation. This self-reporting instrument contains a behavioral rating scale asking participant to judge personal attitudes using a Likert scale in which each item was given a numerical value (Frankel et al., 2012). A positive response to the construct, "I participated in an experience with TeachLivE™ while in the educational leadership program", prompts respondents with three additional survey items, each with a four point Likert scale; strongly disagree (1), disagree (2), agree (3), and strongly agree (4).

The Likert scale construct asking if the participation in a TeachLivE™ observation feedback conference simulation increase my effectiveness in giving feedback to teachers is highly rated with 60 of 61 participations (98.4%) indicating agreed or strongly agreed. Only one response rating was low (1.6%) indicating disagreement. Table 34 displays the results for this construct for all mixed reality simulation participants.

Table 35

Increased Effectiveness of Providing Feedback to Teachers (N = 61)

Rating	Frequency	Percent
Strongly Agree	35	57.4
Agree	25	41.0
Disagree	1	1.6
Strongly Disagree	0	0.0

The Likert scale construct asking if the participation in a TeachLivE™ observation feedback conference simulation increased my effectiveness in communicating with parents in an administrative role was highly rated with 60 of 61 participations (98.4%) indicating agreed or strongly agreed. Only one response rating was low (1.6%) indicating disagreement. Table 36 displays the results for this construct for all mixed reality simulation participants.

Table 36

Increased Effectiveness in Communicating with Parents in an Administrative Role (n = 61)

Rating	Frequency	Percent
Strongly Agree	36	59.1
Agree	24	39.3
Disagree	1	1.6
Strongly Disagree	0	0.0

Descriptive statistics for the participants' perception of the simulation (Table 37) indicated that on a four point Likert scale, with 4 indicating strongly agree, the highest mean value of 3.67 was associated with participants' value of the continuance of the simulation with the program. The mean values for feedback and communication skills improvement were similar with a mean of 3.56 for feedback and 3.57 (between "agree" and "strongly agree") for communication skills.

Table 37

Descriptive Statistics for Post Internship Survey (n = 61)

	Feedback	Communication Skills
Mean	3.56	3.57
Median	4.00	4.00
Mode	4	4
Standard Deviation	.533	.531

Additional Analysis

The five point Likert scale construct on the mixed reality simulation exit survey asking if the participation in a TeachLivE™ observation feedback conference simulation

was helpful and increased confidence in speaking. The responses were analyzed by respondents' number of years in education is tightly clustered with highly rated with 127 of 141 participations (90.1%) indicating agree or strongly agree for all experience levels. Only four responses rating low; three participants (2.1%) indicating disagreement that have between seven and eleven years of experience and one participant not providing information on experience. Table 38 displays the results for this construct for all mixed reality simulation participants.

Table 38

Number of Years of Experience as it relates to Speaking Confidence (N = 141)

	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
No experience	0	0	0	3	1
First year up to 3 years	0	0	2	23	23
4 – 6 years	0	0	2	19	16
7-10 years	1	2	1	10	8
More than 10 years	0	0	5	12	7
Not reported	0	1	0	2	3
Total	1	3	10	69	58

The five point Likert scale construct on the mixed reality simulation exit survey asking if the participation in a TeachLivE™ observation feedback conference simulation was helpful and should continue to be included in the Educational Leadership M.Ed. Program. Responses for increases my effectiveness in giving feedback were highly rated with 60 of 61 participations (98.4%) indicating agreed or strongly agreed, with only one

response rating low (0.9%) indicating disagreed. Table 39 displays the results for this construct for all mixed reality simulation participants.

Table 39

Recommend Continuation of Simulation in the Program (N = 141)

Rating	Frequency	Percent
Strongly Agree	101	71.6
Agree	29	20.6
Neither Agree or Disagree	8	5.7
Disagree	0	0.0
Strongly Disagree	2	2.8
No Response	1	0.7

Disaggregation of the five point Likert scale construct by the specific mixed reality simulation exit survey asking if the participation in a TeachLivE™ observation feedback conference simulation was helpful and should continue to be included in the Educational Leadership M.Ed. program, was highly rated with 67 of 70 parent conference participations (95.7%) indicating agreed or strongly agreed, and 63 of 71 teacher post conference participants (88.7%) indicating agreed or strongly agreed. Only two responses were rated low (2.8%) indicating strongly disagreed in the teacher post conference simulation. Table 40 displays the results for this construct for all mixed reality simulation participants.

Table 40

Simulation Exit Survey: Recommended Continuation by Simulation Experience

Response	Parent Conference Frequency (%)	Teacher Conference Frequency (%)
Strongly Agree	62 (88.6)	39 (54.9)
Agree	5 (7.1)	24 (33.8)
Neither Agree or Disagree	3 (4.3)	5 (7.0)
Disagree	0 (0.0)	0 (0.0)
Strongly Disagree	0 (0.0)	2 (2.8)
No Response	0 (0.0)	1 (1.4)
Total	70 (100)	71 (100)

Note. Simulation exit survey perception responses.

The four point Likert scale construct, a value of 4 representing strongly agree, from the program completion exit survey asking if the participation in a TeachLivE™ observation feedback conference simulation should continue as a part of the M.Ed. Educational Leadership program is highly rated with 60 of 61 participations (98.4%) indicating agreed or strongly agreed, with only one response rating low (1.6%) indicating disagreed. Table 41 displays the results for this construct for all mixed reality simulation participants.

Table 41

Program Exit Survey: Recommend Continuation of Simulation in the Program

	Frequency	Percent
Strongly Agree (4)	42	68.9
Agree (3)	18	29.5
Disagree (2)	1	1.6
Strongly Disagree (1)	0	0.0

Descriptive statistics for the participant perception of the simulation, shown in Table 42, indicated that the highest mean value of 3.67 was associated with participants' value of the continuance of the simulation with the program. The mean values for program continuation were similar with a mean of 4.62 (close to "strongly agree") on a five point scale immediately after the simulation experience and 3.67 (close to "strongly agree") on a four point scale after completion of the internship in practice as recorded on the program exit survey.

Table 42

Recommend Continuation of Simulation in the Program

	Simulation Exit Survey Scale of 1-5	Internship Exit Survey Scale of 1-4
Mean	4.62	3.67
Median	5.0	4.0
Mode	5.0	4.0
Standard Deviation	0.724	0.507

The open ended construct on the simulation exit survey asked participants for additional comments on the simulation experience resulted in comments which fell into the broad categories of (a) general praise, (b) general simulation comment, (c) general feedback comment, (d) general comment on personal performance during the simulation, (e) specific simulation comment, (f) specific feedback comment, and (g) specific comment related to personal performance during the simulation. The frequencies reported in Table 43 represent the comment category for simulation participants in which 40 of the 141 participants did not provide responses. Individual participant responses contained a combination of the above listed categories, each comment was counted

separately generating 158 unique comments. General comments are most frequent (85.4%) with a predominance addressing simulation experience and the coaching and feedback.

Table 43

Simulation Exit Survey Categories of Open Response Comments (n = 158)

Category of Comment	Frequency	Percent
General Comments		
Simulation	62	39.2
Feedback	33	20.9
Personal Performance	21	13.3
Praise of Experience	19	12.0
Specific Comments		
Simulation	9	5.7
Feedback	7	4.4
Personal Performance	7	4.4

Note. Each comment a participant provided was categorized individually and is represented in the frequency.

The Likert scale item, "As a result of this simulation, I feel more confident in speaking," was highly rated by participants with 127 of the 141 participants (90%) indicating they agreed or strongly agreed. Disaggregating response data by the two simulations, responses for confidence in speaking as a result of this simulation were highly rated with parent conference simulation participants with 92.9 percent indicating they agreed or strongly agreed. Further analysis of the construct with regards to the total years of experience and the current job title is presented in Table 44.

Table 44
Confidence in Speaking with Teachers and Parents Exit Survey Responses and Years of Experience in Education

Total Years of Experience and Job Classification	Strongly Disagree $n = 1$	Disagree $n = 2$	Neither Agree or Disagree $n = 7$	Agree $n = 60$	Strongly Agree $n = 44$
Less than one year					
Administrator	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Classroom Teacher	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Instructional Support	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
1-3 years					
Administrator	0 (0.0)	0 (0.0)	0 (0.0)	3 (2.6)	1 (0.8))
Classroom Teacher	0 (0.0)	0 (0.0)	1 (0.8)	16 (14.0)	19 (16.6)
Instructional Support	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.8)	1 (0.8)
4-6 years					
Administrator	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (1.7)
Classroom Teacher	0 (0.0)	0 (0.0)	2 (1.7)	14 (12.2)	11 (9.6)
Instructional Support	0 (0.0)	0 (0.0)	0 (0.0)	5 (4.3)	0 (0.0)
7-10 years					
Administrator	0 (0.0)	1 (0.8)	0 (0.0)	1 (0.8)	0 (0.0)
Classroom Teacher	1 (0.8)	1 (0.8)	1 (0.9)	5 (4.3)	3 (2.6)
Instructional Support	0 (0.0)	0 (0.0)	0 (0.0)	4 (3.5)	1 (0.8)
More than 10 years					
Administrator	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Classroom Teacher	0 (0.0)	0 (0.0)	2 (1.7)	7 (6.1)	4 (3.5)
Instructional Support	0 (0.0)	0 (0.0)	1 (0.8)	5 (4.3)	2 (1.7)

Note: Disaggregated by current job title $N = 114$

Summary

This chapter began with a description of the purpose for conducting the research study, as well as a brief description of the research population and how the study was conducted. Data were analyzed to respond to the four questions associated with the analysis of mixed reality simulations, coaching and feedback as they relate to preparation for administrative conferencing in the real work setting. Analysis of the demographic variable data provided by participants on open-ended items included on the simulation exit survey, which included years of experience in education, years of experience in current role, undergraduate degree and current job title.

The next section of the chapter included a discussion of the research questions and the data analysis results. The results were followed with a discussion of participant's perceptions of the simulation experience and coaching feedback to address research question one. The frequency distributions and descriptive statistics revealed participant positive perceptions of the usefulness of the mixed reality simulation experience in preparation for administrative communication and conferencing with parents and teachers through the constructs addressing realistic nature of the simulation experience, and confidence in speaking with parents and teachers, including goal setting with teachers.

These results were followed by an analysis of data from constructs addressing the perception of the benefit of the coaching feedback provided to improve communication skills in concerning with parents and teachers. Frequency distributions and descriptive statistic were analyzed for two constructs on the simulation exit survey to address

research question two revealed a positive perception of the benefit of the coaching feedback provided.

Research question three utilized qualitative data from exit survey and reflection assignments to determine the extent student reflections of the TeachLivE™ experience perceive a benefit from the experience in increasing skill in communicating with parents and teachers immediately following the mixed reality simulation. The categorization of responses and identification of common themes indicate the simulation is beneficial and provides opportunities to improve personal performance in administrative communication and conferencing skills.

Research question four used data collected from constructs embedded in the final program survey given to Educational Leadership M.Ed. students after completing all coursework and the internship in practice. The data were used to determine the extent to which students perceived the TeachLivE™ experience to be beneficial in influencing leadership behaviors related to communicating with parents and teachers at the end of the second semester administrative internship. Two constructs were analyzed using frequency and descriptive statistics related to the experience helping to increase effective communication with parents and teachers as well as increase effectiveness of providing feedback to teachers. Table 44 presents an overall summary of the study, which includes the research questions, sources of data, methods of data analysis and results.

Chapter 5 contains an elaboration of the data analysis presented in this chapter as well as implications for practice, and recommendations for future research in this area. Recommendations for future research are also proposed.

Table 45

Research Questions and Results

Research Questions	Results
1. To what extent do Educational Leadership M.Ed. students believe the TeachLivE™ parent conference and teacher post observation conference simulation experiences to be helpful in developing their communications skills with parents and teachers?	Simulation was Realistic Parent *M* = 4.63 Teacher *M* = 4.46 Confidence in Speaking as Administrator Parent *M* = 4.41 Teacher *M* = 4.14 Confidence Setting Goals with Teachers Teacher *M* = 4.51
2. To what extent do Educational Leadership M.Ed. students believe the TeachLivE™ coaching feedback was helpful in developing their communications skills with parents and teachers?	Coaching Feedback was Helpful Parent *M* = 4.86 Teacher *M* = 4.76 Simulation was Beneficial Parent *M* = 4.71 Teacher *M* = 4.59
3. To what extent do student reflections of the TeachLivE™ experience indicate that it is beneficial in increasing skill in communicating with parents and teachers immediately following the mixed reality simulation?	Major Themes Communication Skills (44) Confidence in Conferencing (26) Planning (23) Beneficial (7) Realistic (6)
4. To what extent do M.Ed. in Educational Leadership students perceive the TeachLivE™ 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?	Coaching Feedback was Helpful *M* = 3.56 *Mdn* = 4.0 Confidence in Speaking as Administrator *M* = 3.57 *Mdn* = 4.0 Simulation Should Continue in Program *M* = 3.67 *Mdn* = 4.0

CHAPTER FIVE: NEXT STEPS

Chapter 5 contains a summary of the research findings presented in Chapter 4 in relation to each of the four research questions, and a discussion of implications of practice, and recommendations for further research. The summary of the study serves as a restatement of the problem, the purpose, and a review of the research questions, conceptual framework and research design. The subsections following discuss findings for each research question, implications for practice, and recommendations for future research. The chapter concludes with a summative statement about the research study. The intent of Chapter 5 was is to make connections between the data collected and the educational practices of universities in relation to preparation for administrative conferencing in Educational Leadership M.Ed. programs.

Summary of the Study

New school leaders are expected to make sound instructional leadership decisions and interact professionally with stakeholders immediately upon assuming a leadership position. In order to be prepared, Educational Leadership M.Ed. students need opportunities to role-play situations to support their movement from theoretical knowledge to real world practice. To facilitate skill development prior to entering the administrative internship, realistic practice models with coaching and feedback, simulating administrative conferencing are needed. Without intentional, guided practice with coaching and feedback, Educational Leadership M.Ed. students may enter the internship with limited or no experience in conferencing with teachers or with parents in

a school leadership capacity, which could negatively impact real student and community stakeholder relationships.

The study was conducted in a large university in the state of Florida. The problem to be studied was how does the use of mixed reality virtual practice with immediate feedback and coaching create more realistic practice experiences in communication and conferencing to increase the skill of the future school leaders. Reliance on only the use of peer modeling and role-playing among peers is not consistently effective; success is contingent on the skill set and comfort of students to role-play. (Rees Dawson & Lignugaris-Kraft, 2013).

The purpose of the study was to ascertain the perception of students in the Educational Leadership M.Ed. program of mixed reality experiences using TeachLivE™ in preparation for the challenges of school leadership conferencing. The second purpose was to determine the perceived value of the coaching feedback received immediately following the mixed reality experiences. Student perception surveys were completed at the conclusion of the mixed reality simulation practice and feedback sessions. Course instructors provided reflection assignment comments to the researcher. Participants completing the final semester of the M.Ed. program administrative internship by the spring 2015 semester provided their perceived value of the mixed reality experience and coaching feedback through a program exit survey. Results of the study were intended to provide feedback to the university for the development of realistic practice models to incorporate into the Educational Leadership M.Ed. program.

It is important to note that under the authority of Section 1012.986 F.S., the Florida administrative code (6A-5.081) outlines the required components for universities to obtain approval for Level I educational leadership programs, initial certification in educational leadership, which provides the career path to become a school administrator. Level I certification programs must include field experiences as part of the program of study in collaboration with public schools, in which the candidate must demonstrate application of the required Florida Principal Leadership Standards (FPLS) competencies (State of Florida, 2014).

The university's use of virtual rehearsal creates a safe environment in which the learner can experiment with the content without risk and shape personal professional practice. The use of virtual rehearsal environments with side-by-side coaching and feedback augments the learning opportunity for students to improve future performance. The simulation lab was designed to practice conferencing and identify areas for growth in communication skills. Through feedback and coaching, participants are able to recognize error patterns, and intentionally plan for behavior adaptation (Hattie, 2009).

The study encapsulated the perceptions of the Educational Leadership M.Ed. students through the following research questions.

1. To what extent, if any, do Educational Leadership M.Ed. students believe the TeachLivE™ parent conference and teacher post observation conference simulation experiences to be helpful in developing their communications skills with parents and teachers?

2. To what extent, if at all, do Educational Leadership M.Ed. students believe the TeachLivE™ coaching feedback was helpful in developing their communications skills with parents and teachers?
3. To what extent do student reflections of the TeachLivE™ experience indicate it is beneficial in increasing skill in communicating with parents and teachers immediately following the mixed reality simulation?
4. To what extent do Educational Leadership M.Ed. students perceive the TeachLivE™ 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?

Research question one was answered with descriptive statistics to determine the perceived value of the simulation experience in developing communication skills. Three constructs captured the realistic nature of the simulation experience, the perceived confidence in speaking with teachers and parents, and goal setting with teachers.

Research question two was answered with descriptive statistics to determine the perceived value of the coaching and feedback. Two constructs captured the helpfulness of the feedback and the benefit of the simulation experience.

Research question three was answered using comments from participant reflection assignments provided by course instructors. The qualitative data were organized using frequency distributions of comment categories and themes found in the student reflection assignments.

Research question four was answered with descriptive statistics to determine the perceived value of the simulation experience after completion of the program internship. Three constructs provided data on the perceived value of the feedback and coaching, the simulation experience impacting confidence in speaking with parents, and participants' opinion in the continued use of the simulation in the program.

The study analyzed the perceptions of the Educational Leadership M.Ed. students through a mixed method study. An analysis of the research subjects' responses to two surveys was conducted: the exit survey completed immediately after the mixed reality experience and the exit survey completed at the end of the internship. Student reflections provided by the course instructors on the experience were analyzed qualitatively. Categories and themes were identified in the comments found in the open-ended survey items, as well as comments from the reflection assignments provided by the instructors. Data were included in the discussion of findings for each research question in the succeeding sections of this chapter.

Discussion of the Findings

The following sections will discuss the findings from each of the four research questions. The findings will connect to the conceptual framework and literature review provided in Chapter 1 and Chapter 2.

Research Question One

To what extent, if any, do Educational Leadership M.Ed. students believe the TeachLivE™ parent conference and teacher post observation conference simulation experiences to be helpful in developing their communications skills with parents and teachers?

The simulation exit survey constructs analyzed participant perceptions of the realistic nature of the experience, the use of the simulation experience to improve communication skills, and goal setting with teachers. The participant responses on the five point Likert scale items indicate high value in all three areas. These results indicate a need to continue use of the mixed reality simulation as a realistic and effective practice tool. The constructivist theory research of Dalgarno and Lee (2010), as well as the meta-analysis research of Mikrophoulos and Natsis (2010) agree that that the virtual environment does not create the learning; however, the ability to create realistic practice may result in increased engagement and learning.

Within the two common constructs, participants indicated through high mean scores, between "agree" and "strongly agree," that the mixed reality simulation was realistic. Specifically parent conference simulation participants ($M = 4.63$), and teacher conference participants ($M = 4.46$) on the five point Likert scale. The slight difference in means can be contributed to technical difficulties noted by the researcher in Chapter 3

impacting the immersion in the experience for two participants. This result was aligned with the research of Melo, Gratch, and Carnevale (2014) which found that people behaved differently when interacting with avatars than agents, conceding at a significantly higher rate (d = 1.162) when faced with a confrontation or anger in order to preserve social harmony.

Participants need to feel the ease of use of the virtual tool before they can perceive the usefulness and utilize the tools to simulate social interaction (Tsai, 2012). Participant comments at the end of the simulation experience, such as, "This was such a fun and realistic experience, especially not knowing what the parent responses were going to be." and reoccurrence in the reflection assignments such as, "This is an invaluable experience that I hope all graduate students have access to in the future", indicate the simulation experience was very realistic.

These results indicate that a need exists for authentic practice professional learning experiences. Successful instructional leadership programs include instruction on and practice with active learning and listening strategies (Perez et al., 2011). Students need a realistic practice environment to be immersed in the simulation to practice high-risk situations in a safe environment. According to Slater (2009), mixed reality practice experiences provide both the illusion of presence and plausibility of the interaction occurring. School leaders need opportunities to practice high-risk administrative conferencing situations in a safe learning environment.

As revealed in the data analysis of the second common constructs, there was a lower level of confidence in speaking with parents and teachers. Participants indicated

that the mixed reality simulation assisted them in feeling more confident speaking with parents and teachers also was rated lower through mean scores on the five point Likert scale; specifically, parent conference simulation participants ($M = 4.41$), between "agree" and "strongly agree," and teacher conference participants ($M = 4.14$), close to "agree." The lower mean scores are consistent with the known lack of experience of participants in the field of education; more than 65% of participants reported three years or less experience and more than 60% indicating they were currently classroom teachers. One teacher conference participant expressed the acknowledgement of lack of confidence by rating the construct "disagree" and included an open-ended response, "I realize confidence is something I need to work." This clearly indicated that the lack of experience, and the limited opportunity for classroom teachers to experience job embedded administrative duties contributed to the perceived confidence in administrative conferencing. According to Nolan and Hover (2011), the development of effective communication skills are necessary for school leaders so that they can effectively address non-routine events with school staff and community stakeholders. According to Melo et al. (2014), people behave differently when interacting with avatars vs. agents when faced with a confrontation or angry situation in order to preserve social harmony. Nolan and Hoover (2011) identify effective communication skills as essential to navigation through non-routine events with stakeholders, specifically in conferencing.

The results of the analysis of this portion of research question one provide data for consideration in decision making process of selection of mixed reality virtual practice models to support standards based instruction, with an emphasis on communication

within organizational leadership through effective two-way communication skills development. According to Darling-Hammond et al. (2007), quality aspiring school leaders' preparation programs provide opportunities for theoretical framework, practicums and field experience to develop administrative skills, impacts the development of instructional leadership and transformational leadership practices. Florida Principal Leadership Standards emphasize effective communication as an important method of building and maintaining relationships with students, faculty, parent and the community through engagement in constructive conversations about school issues, utilizing active listening; and learning from all stakeholders (FLDOE, 2015). Therefore, initial educational leadership programs may want to consider providing students opportunities to engage in high quality, realistic, mixed reality virtual practice in preparation for administrative communication such as conferencing with teachers and parents.

Research Question Two

To what extent, if at all, do Educational Leadership M.Ed. students believe the TeachLivE™ coaching feedback was helpful in developing their communications skills with parents and teachers?

The simulation exit survey constructs analyzed participant perceptions of the usefulness of the coaching and feedback, and the benefit of the experience. The participant responses represent high-perceived value through both constructs. Hattie (2009) through his research meta-analysis, determined that timely and specific feedback is necessary to improve performance when engaging in skills practice. Owen and

Valesky (2011) define coaching, the shaping of behavior and van Diggelen et al. (2012) define feedback as providing information about performance to confirm, enrich, and assist in the interpretation of a performance.

The first portion of the analysis focused on the participants' perception of the coaching and feedback. Through two common constructs, participants indicated that the feedback and coaching was helpful through high mean scores on the five point Likert scale. Specifically, participants rated feedback and coaching by parent conference simulation participants ($M = 4.86$), close to "strongly agree," and teacher conference participants ($M = 4.59$), between "agree" and "strongly agree". According to Hattie and Timperley (200), effective feedback should be linked directly related to the task, the task details, or the individual student for self-regulation, providing specific actionable reinforcement. One participant simulation exit survey open-ended response exemplifies the perceived value of the coaching and feedback. The participant shared, "The coaching, and ability to ask questions about the interaction and how to respond to a parent if they responded in a different way, was helpful". This comment is consistent with the findings of Kluger and DeNisi (1996) that behavior is goal directed; by providing feedback just above the performance level is most effective in providing to motivation to change behavior. These results support the continued use of authentic practice models that utilize immediate coaching and feedback as an integral part of learning. The responses about the usefulness of feedback indicate Educational Leadership M.Ed. students are willing to be vulnerable in a practice situation and are

willing to listen to feedback provided when it is focused on the task, and their ability to self regulate behavior in the future based on the practice experience.

The second portion of the analysis focused on the perceptions of participants' responses that the experience was beneficial. An analysis revealed through high mean scores on the five point Likert scale that the experience was beneficial through high mean scores specifically parent conference participants ($M = 4.71$), close to "strongly agree", and teacher conference participants ($M = 4.59$), between "agree" and "strongly agree". Given the relatively low mean number of years experience in the field of education of all participants ($M = 5.79$), the lack of professional experience contributes to the skill level of administrative conferencing prior to the mixed reality simulation experience. Research indicates when novice educators are given opportunities for authentic practice with elements of professional risk; they are able to develop professional interaction and communication skills (Dewey, 1932; Dotger, 2015). Providing coaching and feedback at the conclusion of the virtual rehearsal provide students timely and specific feedback with the intent to close the gap between performance and the desired goal (Hattie, 2009). One participant noted on the simulation exit survey the benefit of immediate coaching and feedback by sharing, "I was focused on what I was going to say but they (the coaches) were focusing on both of us and pointed out stuff I didn't get to notice". The responses about the benefits of the use of mixed reality practice, coupled with coaching and feedback indicate that Educational Leadership M.Ed. programs should provide authentic practice opportunities with immediate coaching and feedback to improve communication and conferencing skills of students.

A consistent verbal request made by participants immediately following the simulation and feedback session, which was not part of the data represented in this research study, was the desire to have a second simulation experience with the intent of improving performance related to the coaching and feedback provided. Some participants in the open-ended construct in the exit survey, indicating they would have preferred to repeat the experience, with one specific comment requesting, "I hope it can be expanded to more professionals," repeated these sentiments. This demonstrates participant awareness of the gap between their individual performance and the expected performance for school administrative conferencing. Participants have a desire to improve through repeated rehearsals and receive coaching and feedback directly related to their individual performance. Reflecting back on research question one, the inexperience of students enrolled in Educational Leadership M.Ed. supports the recommendation to provide more than one opportunity to practice high risk administrative tasks using realistic practice and provide immediate coaching and feedback to improve the skill level of students. By providing multiple opportunities within each course, novice educators will gain valuable experience and coaching to prepare for the demands of administrative communication, and relationship building with school stakeholders.

Research Question Three

To what extent do student reflections of the TeachLivE™ experience indicate it is beneficial in increasing skill in communicating with parents and teachers immediately following the mixed reality simulation?

To answer this research question, qualitative data were used from participant reflection assignments provided by course instructors. It should be noted that not all instructors assigned a structured reflective paper as follow up to the simulation experience. Variations in both format ant directions on the reflective assignment given by the instructors elicited vastly different types of responses on the reflections. Each participant reflection was evaluated for patterns and themes, and the data represents the number of times a specific response followed an identified pattern; therefore, each participant reflection contained multiple categories and themes. Of the responses provided, 10.6% of the reflective commentary contained a retelling of the simulation which contained comments supporting research by Loughran (2002) regarding rationalizations of practice as opposed to reflection on practice according to York-Barr et al. (2006) which requires creating a mental space to the experience and allowing meaning to emerge, with the intention of learning. The results indicate that when provided a structure in which to reflect in practice, as well as reflect on practice, educational leadership students are able to analyze personal performance and through a reflective stance, in projecting change in behaviors for future interactions. Valli (1997) states that deliberate reflection includes thought about personal behaviors within a context, making judgments about personal behaviors, shifting thinking and behaviors. Zimmerman et al.

(1992), suggested that final performance outcomes were related to the level of self-regulation of behaviors during practice.

The majority of the general reflection comments and the specific responses were centered on personal performance as well as feedback and coaching. Within these two categories, two predominant themes emerged: communication and confidence in speaking. Reflecting back on research question one and research question two results, the reflective comments are consistent with participant perception ratings on the value of the mixed reality simulation and coaching experience centered on administrative conferencing skills. The lack of experience in the field of education continued to surface as participants shared through self-awareness comments. Participants acknowledged the value of planning reflective questions when engaging in teacher conferencing to improve their conferencing skills. In addition, self-realization of learning gaps was expressed through the need to build their background knowledge in law and policy in communicating with stakeholders. One participant shared through reflection that the experience, "helped build more confidence in my ability to successfully handle issues as they arise, and successfully lead a parent conference with a parent I am not familiar with." Providing consistent models for reflective practice as part of the mixed reality simulation experience as it relates to specific course outcomes will strengthen educational leadership programs. The results further indicate the importance of explicit instruction becoming a reflective practitioner in developing professional practice. Professional practice develops as a result of understanding what is known, and reconsidering what is learned through practice (Loughran, 2002). As universities continue to develop initial

certification programs for educational leadership, they may wish to consider embedding opportunities for guided practice in the process of reflection as an important tool in developing aspiring school leaders.

Research Question Four

To what extent do Educational Leadership M.Ed. students perceive the TeachLivE™ 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?

In answering this research question, data collected from end of program Educational Leadership Exit Survey data provided to the researcher by university staff. Research participants were given the opportunity to self-identify by answering "yes" to the survey question asking if they had participated in the mixed reality simulation prior to the internship. The survey did not ask which simulation, parent conference, or teacher conference they experienced. The post internship responses represent participant perceptions of the value of TeachLivE™ experience in developing communication skills beyond the scenarios practiced. Three constructs provided an opportunity to determine the impact of the simulation experience in increasing personal skill level in providing feedback to teachers, increasing effectiveness in communicating with parents, and asking for recommendations for continuance of the experience. It should be noted that not all mixed reality simulation participants had completed the internship hours at the conclusion of the spring 2015 semester and are therefore were not given an opportunity to respond.

The participant responses indicate high value in all three areas; confidence in

speaking with parents, confidence in providing feedback to teachers and continuance of the mixed reality simulation for practice. These results support the continued use of the mixed reality simulation as an effective practice tool for engaging in professional conversations with parents and faculty. Specifically, data reflect participants perceived confidence in providing teachers with feedback with high mean scores between "agree" and "strongly agree" for feedback was useful, (M = 3.56), confidence in communication with parents (M = 3.57) and continuance of the program (M = 3.6) on a four point Likert scale.

Conclusions from these responses indicate a perceived need from educational leadership students to engage in authentic practice models with immediate coaching and feedback, followed by reflection on practice. Cognitive development during practice is dependent upon the amount of challenge and support (Vygotsky, 1978). Reflection according to York-Barr et al. (2006), involves metacognition, connecting to previous learning from multiple sources, then evaluating information, with the intent of extending learning to new situations.

Educational Leadership M.Ed. students need opportunities to practice school administrator situations to support their movement from theoretical knowledge to embedded practice. Access to the mixed reality simulation as authentic administrative conferencing practice in the Educational Leadership M.Ed. program provides practice coupled with coaching and feedback to develop communication skills. Participant survey responses immediately following the mixed reality experience indicated that 92.9% of participants agreed or strongly agreed that the experience was helpful and should

continue in the program. Participant support for the continuance of the experience at the end of the internship continued to be high (98.4%) in the belief that the experience was helpful in preparation for the internship experience. Learning through practice requires authentic experiences, a safe environment to learn from mistakes and appropriate professional challenges, in order to form mature professional identities (Dotger, 2015). Educational leadership students that enter the program with three or less years of experience in education, have not had time to develop mature professional identities in their current role; therefore, challenges exist for universities in preparation of students for the complexities of school administrator responsibilities. Initial educational leadership certification programs may wish to consider the continuance of the mixed reality model practice to develop administrative conferencing skills through the use of TeachLivE™ as an effective low risk authentic practice models for high risk tasks.

Implications for Practice

Successful educational leadership programs provide a strong base in theoretical framework as well as practicums and field experiences, to develop administrative skills and practices (Darling-Hammond et al., 2007). The research on effective school leadership, practice, coaching with feedback, and reflection are fundamental in school leadership initial certification programs. Realistic practice, coupled with coaching and feedback provide scaffolded instruction, enhancing the learning opportunity (Taylor, 2010).

It is recommended that educational leadership students utilize mixed reality simulation tools such as TeachLivE™, to develop administrative conferencing skills. The lack of practical experience in the education profession for the majority of students creates a gap in knowledge that needs to be specifically acknowledged and addressed. Implications for practice are made, understanding the difficult task of creating authentic practice to close the gap of experience in leadership skills, specifically communication and conferencing. In addition, it is recommended that educational leadership students are provided multiple opportunities to practice with mixed reality simulations. The ability for students to practice, receive feedback and coaching, then demonstrate understanding of the feedback by improving performance can build confidence in speaking with parents and teachers. For students needing practice beyond course provided simulation time, it is recommended that students have the ability to purchase additional simulation practice with coaching and feedback to develop communication skills.

In order to improve the administrative communication skills of aspiring administrators, universities providing initial certification in educational leadership may want to consider an alignment of curriculum and instructional practice models in coursework directly related to administrative communication and conferencing to include the use of the mixed reality simulation in all sections of the targeted coursework. Academic freedoms provided in instructional delivery models may impede this recommendation. However, providing equal access, through a standard expectation of students through a scheduled lab time associated with enrollment in the targeted courses,

would support instructor academic freedom and still allow all students the benefit of the learning.

In order to continue to close the gap of professional inexperience found in student entering initial educational leadership certification programs, universities may want to consider identifying additional critical leadership standards and skills that would benefit from guided and independent practice using mixed reality virtual practice. This would necessitate the development scenarios supportive of newly identified standards and skills to be rehearsed in the TeachLivE™ simulation lab, coupled with coaching and feedback to direct attention to the intended learning (Hattie & Timperley, 2007).

A synthesis of the implications of this study include the following:

1. Current targeted courses may want to consider the continuance of TeachLivE™ as a valuable tool in providing authentic practice in administrative conferencing.
2. Provide additional practice opportunities within the current identified target courses to allow participants to demonstrate behavior changes and receive additional coaching and feedback to develop administrative conferencing skills.
3. Provide equal access to the mixed reality simulation for all students enrolled in the target courses.
4. Provide opportunities for students to purchase additional practice time in the simulation lab to improve personal professional practice.
5. Investigate additional courses to include the mixed reality virtual practice to support development of content for educational leadership standards practice.

Recommendations for Further Research

Given that a large portion of a school leader's time is consumed responding to the social, emotional, and academic needs of students and families, research in administrative communication skills has been important to leadership development. In this study, the researcher identified areas where future research should assist in the improvement and development of educational leadership certification programs.

Initial educational leadership certification can be obtained through degree seeking and non-degree seeking pathways. Because this study was limited to Educational Leadership M.Ed. students at one university, it is recommended that research continue with all students seeking educational leadership certification through face-to-face and online course enrollment.

In the responses for research question three, participants shared, though verbal comments while in the simulation lab, as well as provided evidence through written comments, the desire to have an additional opportunity to improve performance utilizing the same course content. An area not researched, as part of the study, but worthy of consideration by educational leadership programs is the replication of the study using the same four research questions, and the same simulation lab scenarios with methodology changes. This researcher recommends multiple opportunities be provided to participate in the simulation with coaching and feedback within each targeted course. Zimmerman et al. (1992), found a correlation of perceived self-efficacy for self regulated learning and self-efficacy for academic achievement ($r = .51$, $p > .01$), which was independent of prior performance outcome to final performance outcome.

Participants in this study completed the mixed reality simulation of administrative conferencing, uninterrupted for up to 10 minutes, with an expectation of receiving coaching and feedback at the end of the simulation. As was evident in the feedback and coaching sessions, participants often could not recall important details of the simulation, hindering the ability to recognize mistakes or communication patterns that needed correction. This researcher recommends future search in allowing the coach to freeze the session when an error is made to provide immediate coaching and feedback, and then resume the simulation. This should provide participants identification of the errors through feedback, shape their behavior, and receive additional feedback and coaching.

A synthesis of the recommendations for future research in the use of mixed reality virtual practice in educational leadership initial certification for educational leadership programs includes:

1. Multiple pathways exist for university students to meet course requirements for initial educational leadership certification. Therefore, it is suggested that this study be replicated to include all educational leadership students.
2. The majority of participants in the research study had limited professional experience in education. The researcher suggests future correlational research in perceived participant confidence in administrative conferencing in relation to demographic information.
3. The majority of participants in the research study had limited professional experience in education. The researcher suggests future research in perceived

participant confidence in administrative conferencing through more opportunities for authentic practice within the same course.

4. It is recommended that a similar study should be considered that includes changing methodology of coaching model to provide ongoing coaching during the simulation experience.
5. Florida Principal Leadership Standards consist of communication requirements beyond the scope of the scenarios provided in this research study. It is recommended that this study be replicated with additional scenarios representing a broad range of situations related to specific Educational Leadership Standards.
6. Participants expressed a lack of speaking confidence through reflection assignments prior to the internship in practice. It is recommended that future research include open-ended responses in the end of program survey to collect data on the effect of the mixed reality experience in preparing for the internship in practice.
7. This study should be replicated across to include other public and non-public higher education institutions that provide coursework leading to initial certification in Educational Leadership.
8. Future research should investigate participant progress in course completion correlations to perceptions of mixed reality simulation practice in targeted courses.

9. Because perceptions of performance are not always consistent with actual performance, it is recommended that future research investigate participants' perceived effectiveness in conferencing as well as actual performance in the simulation practice as well as the internship.
10. Future research should investigate the internship performance as it relates to conferencing, coaching and reflection through deliberate practice after practice in the mixed reality simulation during coursework.
11. Longitudinal study investigating the leadership performance as it relates to conferencing, coaching and reflection through deliberate practice after placement in an administrative position.

Conclusions

Effective communication and conferencing skills are necessary for instructional leaders to navigate through non-routine events with stakeholders (Nolan & Hoover, 2011). The quality of school administration preparation programs impacts the development of instructional leaders and their leadership practices (Darling-Hammond et al., 2007). The importance of communication skills resonates in four of the six Interstate School Leaders Licensure Consortium (ISLLC) standards: (a) standard two-the development of a school culture conducive to student learning; (b) standard four-collaborations with faculty and community members responding to community needs; (c) standard five-acting with integrity, fairness and in an ethical manner; and (d) standard six-responsive to the political, social and legal aspects of school culture (Council for

Chief State School Officers, 2013, p. 6).

This research study was conducted to contribute to the body of knowledge related to authentic practice models for the development of communication skills in Educational Leadership M.Ed. programs. State approved initial certification programs are developed in conjunction with statutory and board rule requirements, however, interpretation of how to best deliver the content and practice models are unique to each institution. The findings and conclusions of this research can be useful to institutions in the development of authentic practice with the use of mixed reality simulations used in conjunction with coaching and feedback models as a means to prepare future school administrators.

APPENDIX A:
EDUCATIONAL LEADERSHIP PARENT CONFERENCE SIMULATION FEEDBACK SURVEY

TeachLivE™ Educational Leadership

Parent Conference Simulation Feedback

Please complete information below

Date:	
Professional role (instructional coach, dean, classroom teacher, school district level teacher, etc.):	
Years of experience in education:	
Years in current role:	
Undergraduate major:	
Name [Optional]:	

INSTRUCTIONS: Please circle one answer for each item below.		Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Not Applicable / No Answer
		SD	D	NA/D	A	SA	N/A
		↓	↓	↓	↓	↓	↓
1.	As a result of this simulation, I feel more confident in speaking with parents.	1	2	3	4	5	N/A
2.	This simulation was helpful and should continue to be included in the M. Ed. Program.	1	2	3	4	5	N/A
3.	This simulation was realistic.	1	2	3	4	5	N/A
4.	This simulation was beneficial.	1	2	3	4	5	N/A
5.	The coach's feedback was helpful.	1	2	3	4	5	N/A

Please share any additional comments that you may have in the box provided below.

**** Thank you for taking the time to complete this questionnaire. Please leave it with the coach in today's session. ****

APPENDIX B:
EDUCATIONAL LEADERSHIP TEACHER CONFERENCE SIMULATION FEEDBACK SURVEY

TeachLivE™

Teacher Post Conference Simulation Feedback

Please complete information below

Date:	
Professional role (instructional coach, dean, classroom teacher, school district level teacher, etc.):	
Years of experience in education:	
Years in current role:	
Undergraduate major:	
Name Optional:	

INSTRUCTIONS: Please circle one answer for each item below.		Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Not Applicable / No Answer
		SD	D	NA/D	A	SA	N/A
		↓	↓	↓	↓	↓	↓
1.	As a result of this simulation, I feel more confident in speaking with parents.	1	2	3	4	5	N/A
2.	After this simulation, I feel more comfortable setting improvement goals with a teacher.	1	2	3	4	5	N/A
3	This simulation was helpful and should continue to be included in the M.Ed. program.	1	2	3	4	5	N/A
4.	This simulation was realistic.	1	2	3	4	5	N/A
5.	This simulation was beneficial.	1	2	3	4	5	N/A
6.	The coach's feedback was helpful.	1	2	3	4	5	N/A

Please share any additional comments that you may have in the box provided below.

**** Thank you for taking the time to complete this questionnaire.**
Please leave it with the coach in today's session. **

APPENDIX C:
EDUCATIONAL LEADERSHIP PARENT CONFERENCE SIMULATION FEEDBACK SCENARIOS

Educational Leadership
EDA 6300: Community School Administration (3 semester hours)

TeachLivE™ Community/Parent Conference Scenario 1

Sean is an excellent student but recently there has been a marked change in his behavior which several teachers have commented on. For the first time ever, Sean was given a detention due to his rude behavior and attitude in his mathematics class. What was particularly worrying is that Sean did not seem concerned about his behavior.

His teacher called home to communicate her concerns to Sean's mother and was astounded by the response that she received. Sean's mother was abusive on the phone blaming the school for Sean's deteriorating behavior and attitude. In particular, Sean's mother focused on the teacher, who she said had humiliated Sean in class and seemed to hate her son. Sean no longer wanted to go to school in the mornings and this was causing a great deal of stress at home. Sean's mother, Jeanette McGowan, has agreed to come in for a conference with you, the administrator.

TeachLivE™ Community/Parent Conference Scenario 2

Brian, an above-average student, presents himself to the principal's secretary demanding to see the principal as it is an emergency. As Brian is creating a fuss in the office, you as the designated administrator, step out to speak to him. He tells you that he was threatened last evening by Sean, the ex-boyfriend of his elder sister Angie. You call Angie out of class and she is visibly stunned when told about the conversation you have just had with Brian. She says that she only went out with Sean twice, after a great deal of pestering, and that she told him only the other day that she did not wish to see him anymore. Sean had gotten mad and said that she would soon change her mind, but he did not threaten her. You send both Brian and Angie back to class.

You contact Sean's teacher and learn that he has not attended class during that morning. You call Sean's parents and ask them to come to meet with you. Jeanette McGowan, Sean's mother, says she will come to the school immediately.

Sean's mother, Jeanette McGowan has arrived at your office.

TeachLivE™ Community/Parent Conference Scenario 3

The annual football game, between two rival schools always brings in a huge crowd. During the game last night, a brawl broke out in the bleachers midway through the second quarter, causing the game to be stopped. A group of students from each of the two schools involved in the football game appeared to engage in a fistfight, and then turmoil spread indiscriminately through the crowd. Your school has adopted a zero-tolerance policy with regard to violence at school. You have already identified nine students whom were part of the group who initiated the fight based on video from the security cameras. The rumor running around school is that the fight was gang related.

Jeanette McGowan, mother of Sean, and who was one of the students involved in the fight is the first of the parents to meet with you.

TeachLivE™ Community/Parent Conference Scenario 4

After several years of working with parents and the community your school now has an active PTA, and its president, Jeanette McGowan, mother of Sean, is an ardent supporter of the school. Together, you actively ask for and encourage volunteers to come onto campus to help teachers. But perhaps in your enthusiasm to further develop strong school/home partnership, things have gotten a little out of hand.

A teacher delegation approaches you and outlines problems the teachers are having with the volunteers. While the teachers are appreciative of the work you have done to gain support for the school there are now so many volunteers on the school premises on a daily basis that children are listening to their mothers rather than the teachers, which is affecting classroom management. You never thought that a school could have too much community involvement, but the routines that you and your faculty have worked hard to instill are being threatened by well-intentioned parents.

You realize that there is an immediate need to have a conversation with Jeanette McGowan, who has just arrived to see you.

APPENDIX D:
EDUCATIONAL LEADERSHIP TEACHER CONFERENCE SIMULATION FEEDBACK SCENARIOS

Mixed Reality Post Observation Teacher Conference Scenario 1©

Educational Leadership

Mrs. Mc Gowan, a first year teacher has arrived for her post observation conference.

You arrived at her class prior to it beginning so you could observe the critical first few minutes of class. Students entered the class while she was doing something on her computer and organizing materials at her desk. They proceeded to converse with one another, engage with their Netbooks, Ipads, and phones.

Four minutes after the bell rang to indicate the start of class, Mrs. Mc Gowan welcomed the students and asked them to take out their books and begin reading silently on page 23, after which they were to copy down the questions she had on the Smartboard and respond to them. After giving these directions, Mrs. Mc Gowan returned to her desk and once again engaged with the computer.

Mixed Reality Post Observation Teacher Conference Scenario 2©

Educational Leadership

It is now the 6th week of the school year and the teacher you have observed in on annual contract. Although an experienced teacher, she arrived from another state and thus has no continuing contract.

You observed this teacher during the middle of the reading time for about 15 minutes. While you were in the class you noticed that students appeared to be reading out of their core reading text. They were well behaved and interacted with each other minimally indicating that the teacher had established clear expectations for them. During the first 10 minutes of the observation the teacher sat at her desk and called individuals to her and had a discussion with them, but you are not sure what it was about. It did not appear to be individual instruction, but seemed that she was providing them with information or grades.

Before the observation ended the teacher began whole class direct instruction. She asked the students questions from the end of the passage related to literary elements: characters, setting, and even if they could identify the plot. Only three out of the 18 students in class responded to the questions asked and according to the teacher, their answers were correct.

Educational Leadership

Mixed Post Observation Teacher Conference Scenario 3©

The teacher you have observed was instructing students in algebraic reasoning, which is a benchmark to be addressed from Kindergarten through 9th grade. She began by reading aloud a word problem. As she read it, she wrote an equation on the interactive board. As she read she carefully interpreted is to mean =, and mean +, etc.

Next, she asked the students to individually read the next word problem and compose an equation from it just as she had. Only three out of the 23 students in the class seemed to be able to do this learning task independently and correctly.

Mixed Reality Post Observation Teacher Conference Scenario 4©

Educational Leadership

As a middle grades administrator you find that teachers focus on controlling the students. The concept of smooth routines and organization are important in the observation protocol and the teacher's final evaluation. You have completed a brief observation of the teacher. You noticed rules posted and the common board configuration which included the day's goals and learning tasks/agenda.

As the observation proceeded the teacher focused on whole class instruction on the important concept of main idea and supporting details in reading non-fiction text. However, you did not see anything related to this concept on the common board configuration, did not see benchmarks posted, nor any other indication that this was the day's focus. The passage read seemed easy for the students and those who were called on gave correct responses.

Providing feedback is a high effect strategy and you did notice a generic learning scale posted and she asked the students to give her a thumbs up or thumbs down on their perception of their own understanding of main idea.

APPENDIX E:
EDUCATIONAL LEADERSHIP EXIT SURVEY

Block 1

The following survey is a short survey of your perceptions of the Educational Leadership program that you are completing. You will need to scroll down each page until you will see both forward and backward arrows at the bottom of the page. Use these to navigate through the survey. Once you have finished the survey, your responses will automatically be saved. When you get to the end of the survey and see the acknowledgement for taking it, print the screen for your records and to show to your intern supervisor.

Your Name

Program Completing

- ○ M. Ed.
- ○ Ed. S.
- ○ Modified Core
- ○ Ed. D

Month Survey Completed

Year Survey Completed

Block 1

Using the following scale, please rate your level of agreement with each of the statements regarding the Educational Leadership M. Ed., Ed. S., or Modified Core Program at the University of Central Florida. All items refer to Educational Leadership faculty and programs, not to other courses or courses taught by non-educational leadership faculty.

1 Strongly Disagree
2 Disagree
3 Agree
4 Strongly Agree

5 Not Applicable

Please note that the highest rating is a "4." A "5" means it is not applicable to you!

	1	2	3	4	5
1. Course content assisted me in being more effective as an educator.	○	○	○	○	○
2. Course content was drawn from research and contemporary literature.	○	○	○	○	○
3. I received frequent feedback from my instructors on my progress in class.	○	○	○	○	○
4. Educational Leadership faculty were available outside of class time.	○	○	○	○	○
5. Educational Leadership faculty set high expectations for student performance.	○	○	○	○	○
6. The information provided to me by Educational Leadership faculty was accurate and up to date.	○	○	○	○	○
7. Courses in the Educational Leadership Program were academically challenging.	○	○	○	○	○
8. The administrative internship prepared me to apply for entry level leadership positions.	○	○	○	○	○
9. The number of students in the classes I took was appropriate for graduate level courses.	○	○	○	○	○
10. Student discussion and interactions were encouraged by instructors during class.	○	○	○	○	○

Block 2

Using the following scale, please rate your level of agreement with each of the statements regarding the Educational Leadership M. Ed., Ed. S., or Modified Core Program at the University of Central Florida. All items refer to Educational Leadership faculty and programs, not to other courses or courses taught by non-educational leadership faculty.

1 Strongly Disagree
2 Disagree
3 Agree
4 Strongly Agree
5 Not Applicable

Please note that the highest rating is a "4." A "5" means it is not applicable to you!

	1	2	3	4	5
11. The administrative internship was a valuable learning experience.	○	○	○	○	○
12. Instructors expected students to be prepared for class presentations and discussions.	○	○	○	○	○
13. The intellectual climate in the program was stimulating.	○	○	○	○	○
14. The Educational Leadership faculty were supportive.	○	○	○	○	○
15. The Educational Leadership Program adequately prepared me for the Florida Educational Leadership Examination.	○	○	○	○	○
16. The program prepared me for my professional career goals.	○	○	○	○	○
17. Courses were offered frequently enough for timely completion of the program.	○	○	○	○	○
18. Textbooks required for the courses were used on a regular basis.	○	○	○	○	○

19. Student interactions and discussions added to the quality of the courses.	○	○	○	○	○
20. Electronic databases were useful in completing the program requirements.	○	○	○	○	○

Block 3

21. I participated in an experience in Teachlive while in the educational leadership program.

- ○ Yes
- ○ No

Participation in a Teachlive observation feedback conference simulation increased my effectiveness in giving feedback.

- ○ Strongly Disagree
- ○ Disagree
- ○ Agree
- ○ Strongly Agree

Participation in a Teachlive parent conference increased my effectiveness in communicating with parents.

- ○ Strongly Disagree
- ○ Disagree
- ○ Agree
- ○ Strongly Agree

I recommend that the faculty continue the use of Teachlive before students participate in experiences in real time.

- ○ Strongly Disagree
- ○ Disagree
- ○ Agree
- ○ Strongly Agree

Block 5

22. Please list awards, recognitions, and promotions you have received while in the educational leadership program.

23. Please select the best representation for the rating of the last performance evaluation you received.

- Below Expectation
- At Expectation
- Above Expectation

24. Please select the best representation of your current professional role.

25. Please select the salary range that best represents your current contract salary.

- Less than $40,000
- $40,000 - $55,000
- $55,001 - $70,000
- $70,001 - $85,000
- $85,001 - 100,000
- Greater than $100,000

26. Please provide us with your preferred contact information so we can follow your career progress and stay in touch with you as a graduate.
Name:

E-mail Address:

Mailing Address:

Block 5

Thank you for taking the time to complete this exit survey. Best wishes and good luck in your career! We hope you stay in touch.

APPENDIX F:
OUTLINE FOR TEACHLIVE™ ORIENTATION

TeachLivE™ Simulation Orientation Outline

The orientation is timed at 10 minutes to model the simulation time, with an additional five minutes allotted for questions. Start timer with an 8-minute warning sound prior to beginning the orientation.

I. Simulation Process
   a. Duration
      i. Simulation –
         1. 10 minutes; warning at 8 minutes, hard stop at 10
         2. Participants do not have to use all 10 minutes if the conference ends naturally
      ii. Coaching – 5 minutes then switch with partner
   b. Environment
      i. Enter in pairs
      ii. Watch partner- participate in coaching session
      iii. Complete survey at the end of the simulation
   c. Expectations
      i. Prepare
      ii. Professional dress
      iii. Arrive 30 minutes prior to appointment time

II. Content
   a. Four scenarios specific to course objectives of conferencing (teachers or parents)
   b. Quick read silently
   c. Reminders related to content
      i. Do homework on district/state policies and laws that might be needed
      ii. Avatar will see you as the administrator at all times
      iii. Verbalize when the 8-minute warning bell rings- providing a framework for how much communication can happen in 8-10 minutes.

III. Answer Questions

APPENDIX G:
IRB APPROVAL

University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Approval of Human Research

From: **UCF Institutional Review Board #1**
FWA00000351, IRB00001138

To: **Hilary J. Buckridge**

Date: **March 10, 2015**

Dear Researcher:

On3/10/2015, the IRB approved the following human participant research until 03/09/2016 inclusive:

Type of Review:	UCF Initial Review Submission Form
Project Title:	MIXED REALITY EXPERIENCES IN THE M. Ed. EDUCATIONAL LEADERSHIP PROGRAM: STUDENT PERCEPTIONS
Investigator:	Hilary J Buckridge, Ed.D
IRB Number:	SBE-15-10988
Funding Agency:	
Grant Title:	
Research ID:	N/A

The scientific merit of the research was considered during the IRB review. The Continuing Review Application must be submitted 30days prior to the expiration date for studies that were previously expedited, and 60 days prior to the expiration date for research that was previously reviewed at a convened meeting. Do not make changes to the study (i.e., protocol, methodology, consent form, personnel, site, etc.) before obtaining IRB approval. A Modification Form **cannot** be used to extend the approval period of a study. All forms may be completed and submitted online at https://iris.research.ucf.edu .

If continuing review approval is not granted before the expiration date of 03/09/2016, approval of this research expires on that date. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

Use of the approved, stamped consent document(s) is required. The new form supersedes all previous versions, which are now invalid for further use. Only approved investigators (or other approved key study personnel) may solicit consent for research participation. Participants or their representatives must receive a copy of the consent form(s).

All data, including signed consent forms if applicable, must be retained and secured per protocol for a minimum of five years (six if HIPAA applies) past the completion of this research. Any links to the identification of participants should be maintained and secured per protocol. Additional requirements may be imposed by your funding agency, your department, or other entities. Access to data is limited to authorized individuals listed as key study personnel.

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

On behalf of Sophia Dziegielewski, Ph.D., L.C.S.W., UCF IRB Chair, this letter is signed by:

Signature applied by Joanne Muratori on 03/10/2015 09:48:47 AM EDT

IRB Coordinator

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