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EXAMINING POTENTIAL TEACHER BIAS OF HISPANIC MALES WITH
EMOTIONAL DISTURBANCES IN VIRTUAL SETTINGS

by

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A dissertation submitted in partial fulfillment of the
requirements for the degree of Doctor of Philosophy
in the College of Education
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ABSTRACT

The importance of looking at student and teacher interactions holistically is essential and results in reflective teaching practices; consequently, the reflective practice of teaching needs to incorporate all facets of the teacher, known and unknown. This study looks at the potential influence of hidden biases towards adolescent Hispanic males and students with Emotional Behavior Disorders by observing preservice teacher (PT) interactions with students within a simulated classroom environment. Factorial MANOVAs and Discriminant analyses revealed statistically significant interactions and relationships between participant level of bias and the identified student avatars. These exchanges were more prevalent with one student avatar by both experimental and control PTs; indicating that student characteristics and their differences are important factors that need to be considered when addressing issues related to bias.

As their first grandchild to make it through this process, I
would like to dedicate this dissertation to my
paternal and maternal grandparents.

Dedico este trabajo a mis abuelos paternos Juana e Isaac López
y a mis abuelos maternos Bonifacia y Nestor Gonzalez.

ACKNOWLEDGMENTS

To thank all that have been a part of my journey would require a complete phenomenological qualitative study as there are many people who are a part of why I am here..."the beginning" once again. All I can say is thank you, to each and every one of you.

I would like to specifically thank my mother Carmen and father Angel Sr.; mom and dad you have always been in my corner and encouraged me to push forward; your example has made me the man I am today. I also need to thank my committee: Dr. Lisa Dieker, Dr. Wilfred Wienke, Dr. Eleazar Vazquez III, and Dr. Vivian Correa, your guidance through this endeavor has provided me with a lifelong framework that will guide me for many years.

When my dear friend Dr. Rebecca Hines spoke to me a number of years ago regarding this wonderful opportunity and connected me with her dear friend, now mine as well, Dr. Lisa Dieker I never imagined the voyage my family and I would experience. To my wife Amelia, my son Angel III, and my daughter Aimee, THANK YOU!! You are my inspiration and motivation that allowed me to start and complete this journey; without you by my side, my life would be incomplete. We made it!! Gelito and Aimee you are next.

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CHAPTER ONE:

INTRODUCTION

Background: Need for the Study

More than one in every three Americans is a minority or something other than Non-Hispanic single-race white. The current number of minorities in the U.S. now exceeds one hundred two million (U.S. Census Bureau, 2008). While the Hispanic population continues to climb steadily, the dropout rate among Hispanic youth is alarmingly high. A report from the U.S. Census Bureau (2008) indicated that of youth between ages sixteen and twenty-four, Hispanics accounted for forty-one percent of all current high school dropouts. Hispanics are listed as having the highest dropout rate of any cultural group and yet represent the highest minority population in the U.S.

As is well documented in the literature, the attainment of at least a high school education is an important determinant of social position and a main predictor of life successes (Achilles, McLaughlin, & Croninger, 2007; Foster, Algozzine, & Ysseldyke, 1980; McKown & Weinstein, 2008; Richardson, 2009; Stevens, Hamman, & Olivarez Jr., 2007; Tapia, 2004; Tenenbaum & Ruck, 2007; Thompson, 2004). Not to mention, the research

showing that educational attainment and a college education predict future accomplishments (Stamps & Bohon, 2006). Most Hispanic students who dropout of high school do not go on to college. The Condition of Education 2011, details that of those who do graduate and go to college only about twelve percent receive a two-year degree and a little over eight percent receive a four-year degree. Of those low percentages, sixty-three and sixty-one percent respectively are Hispanic females, not males (Aud et al., 2011). Overall, the educational attainment of Hispanics lags far behind any other group in the U.S. (Stamps & Bohon, 2006). These statistics do not account for data that are further impacted when a Hispanic student (typically male) is labeled with an emotional disturbance (ED). This paper frames the potential depth of the problem for the Hispanic male in school labeled ED.

Statement of the Problem

Rodriquez (2008) asserts that the reason Hispanic youth are dropping out of high school is because the system is discriminatorily pitted against them and a scarcity of social policies to remedy this problem are not in place. This discrimination is the foundation for this paper related to potential bias against Hispanic males by both placing the label of emotional disturbance upon this population and then lowering

expectations and outcomes due to this label. According to Wagner, Kutash, Duchnowski, Epstein, and Sumi (2005), approximately four hundred fifty thousand students are labeled emotionally disturbed (ED) in the U.S. Wagner and colleagues (2005) also assert that students labeled ED will most likely have less success in school than any other group of students with or without disabilities. While Landrum, Tankersley, and Kauffman (2003) apprehend students labeled ED have increased rates of academic failure, get lower grades and have higher rates of not progressing academically than students in other disability categories. Nelson (2000) reported that fifty to sixty percent of students labeled ED dropout of high school. Data retrieved from ideadata.org reported that from 2002-2007 the Hispanic population in the U.S. saw a two percentage point increase in the number of students labeled ED. The identification of Caucasian students fell by almost three percentage points while the increase in all other demographic groups was negligible moving anywhere from a hundredth to a tenth of a percentage point. These trends in dropout rates for students who are ED and students who are Hispanic combined with an increase in number of students who are Hispanic being labeled ED, allows for the hypothesis that there is an increase in Hispanic males with ED dropping out of school.

With this preponderance of evidence pointing to an increase in dropouts for this population of students, many variables could be researched and mined investigating as to the "why". However, the one key variable that has the greatest and most direct impact on learners each day is the teacher (Bouck, 2005; McKinney, Haberman, Stafford-Johnson, & Robinson, 2008). The cultural bridge as stated by McKown and Weinstein (2008) that exists between the learner and the teacher is a critical topic to consider. McKown and Weinstein see the relationship between student and teacher as one of contention. These authors state that the divide perseverates within the educational institutions that produce teachers. Looking at the demographic make-up of professional educators Picower (2009) reports the majority of teachers are female and ninety percent are Caucasian. Picower further shares that currently the professional educator pipeline is anywhere from eighty to over ninety percent White female, who are taught in teacher education institutions that are staffed by faculty who are mostly White. According to a report compiled for the National Center for Education Statistics (NCES) in 2009, about forty-two percent of all students in K-12 schools come from a minority background. The majority of these children attend schools that are made up of minority student populations exceeding seventy-five percent and are in high poverty areas.

Consequently, many educators who are primarily Caucasian, female and come from middle-class backgrounds, have very little in common with those they teach. In urban areas, the percentage of minorities is even greater and for those educators teaching in urban or repressed areas of the country this lack of commonality is even greater. McKown and Weinstein (2008) share that as a result of this cultural divide and the propensity for dominance of both being white and female in the field of education the potential exists for racism, classism and unjust mistreatment of students classified within any minority rank.

A large amount of research and literature available points to and communicates that, some educators are more likely to view children from minority backgrounds as less capable of academic success. The direct result of these lowered expectations is negative on both academic achievement and behavioral outcomes of the minority students they teach (Clark & Artiles, 2000; Day-Vines & Terriquez, 2008; Foster, Algozzine, & Ysseldyke, 1980; Hyland, 2005; Minor, Onwuegbuzie, Witcher, & James, 2002; Stevens, Hamman & Olivarez, 2007; Tenenbaum & Ruck, 2007; Walker-Dalhouse & Dalhouse, 2006). Many of these biases are implicit and are seemingly outside of the conscious control of the educators (Marx, 2008). This level of consciousness about

the potential bias of teachers against Hispanic males with a label of ED forms the conceptual framework for this study.

Purpose of the Study

The purpose of this study was to determine the potential for educator bias of preservice teachers (PTs) who were predominantly white and female on their interactions with virtual secondary male Hispanic student avatars identified with ED compared to those without an identified label of ED. In this true-experimental mixed methods design with a weightless control study, data were collected on two non-equivalent groups of PTs for a total of twelve participants. All voluntary participants were undergraduate students pursuing degrees in secondary education with only field or student teaching experience. Additionally, all participants were enrolled in an exceptional student education college course; each was randomly assigned to either a control or experimental group.

Each participant completed an online form that allowed the researcher to collect basic demographic data and allowed them to convey their familiarity with both students from culturally linguistic diverse (CLD) backgrounds and those identified with emotional disturbances, and self-disclose their individual biases. In addition, participants took a baseline survey via

the Understanding Prejudice webpage. After these initial tasks had been completed, participants were scheduled to interact with virtual student avatars in the TLE TeachLive™ Laboratory, four times, following a specific scripted Action Review Cycle/After Action Review (ARC/AAR) cycle protocols, which ensured fidelity of treatment. Prior to each virtual rehearsal experience, which consisted of an eight-minute live interaction, controlled for variation by having specific behaviors occur at specified time intervals, participants rated how they expected individual student avatars to perform within that simulated classroom experience, based only on a brief description of that student. After each session, participants completed a brief reflection on their experience, called the AAR. Upon the completion of the second and final virtual rehearsal experiences within the TLE TeachLive™ Lab, the experimental and control groups respectively viewed and discussed together with the researcher online modules. One module was on how to manage classroom behaviors that may occur with students having ED and the other was on cultural competence; both modules were produced by Vanderbilt University's IRIS Center and housed online on the Department of Education's IDEA Partnerships webpage called the Learning Port. Each participant also took two online implicit association tests

via Harvard University's Project Implicit[®], one on race and the other on disability.

During the final week of the study, the original study AAR questions were given again in a written format to both the control and experimental groups and participants also completed the baseline survey given prior to their live sessions. Upon conclusion of the study, all AAR questionnaires were collected and analyzed to find emergent and relevant themes across participants.

Research Questions

The participant's experiences in the lab were analyzed related to the following research questions.

1. Within a simulated classroom environment do the identification and exchanging of the label emotionally disturbed between two virtual adolescent Hispanic male students increase, decrease or maintain the PT's frequency of:

- a. Positive comments, b. Negative comments,
- c. Proximity, d. Cultural statements,
- e. or the content of AAR comments

2. Does providing and completing an instructional module on Cultural Linguistic Diversity and a module on Emotional Disturbances and classroom management influence a PT's frequency of:

a. Positive comments, b. Negative comments,

c. Proximity, d. Cultural statements,

e. or the content of AAR comments

when interacting with adolescent Hispanic male students identified with and without emotional disturbances within a simulated classroom environment.

3. How does a PT's rating on bias measures relate towards performance on data in research questions 1 and 2 for:

Cultural

Disability

Independent Variables

- a. Student's disability label

Dependent Variable

Frequency of:

- a. Positive comments,
- b. Negative comments,
- c. Proximity,
- d. Cultural statements,
- e. and content of AAR comments

Reliability

All qualitative and quantitative data were coded. Analyses to identify both the qualitative themes and quantitative data points were scrutinized for fidelity by an outside observer who viewed the video footage of the interactions. This trained interrater had no connection to the research and coded a minimum of twenty-five percent of the data with point-by-point reliability at ninety percent agreement (Johnson & LaMontagne, 1993; Kazdin, 1982).

Validity

Validated instruments were utilized for all aspects of this study. To ensure validity of data collected, member checking was used with all participants in 100% agreement with the summary of their experiences as written. All online modules and tools used in this study were considered valid instruments as they were designed and reviewed by experts, on cultural and linguistic differences and behavior management systems (Haynes, Richard, & Kubany, 1995; Kazdin, 1982).

Treatment Fidelity

Fidelity in treatment was ensured by the use of a protocol handbook. Detailed in this handbook were the specific classroom behaviors each avatar exhibited for each interaction. The researcher trained the interactors to ensure exact replication of all behaviors for each participant at specific time intervals, a beep tape created by the researcher controlled the cadence of each interaction. Only the researcher knew which group was experimental and which group was the control, thereby controlling for any exposure bias. All AAR questions had been previously piloted for relevance and all participants were asked the three study AAR questions at the beginning of the study ARC cycle and again at the end. In addition, upon entering the lab

each participant was asked to rate how they believed each student would behave using a three point Likert scale, based on a one-sentence description of that student (Jacoby & Matell, 1971; Kazdin, 1982).

Generalization

Due to the limited research conducted within the TLE TeachLivE™ Laboratory, this research can only be generalized to the participants involved in this study. Future research is required prior to large-scale generalization.

Limitations

This study had various limitations and those will be discussed in detail in Chapter 5. This researcher anticipated a few notable limitations at the onset of the study. The first being participant background and experience. Although using preservice educators, each individual had differing backgrounds, work and life experiences that could not be controlled for in this study. A second possible limitation related to human subject research is attrition. Finally, because of the lack of research of using simulated mixed-reality environments within teacher preparation use TLE TeachLivE™ Lab is not validated to transfer practice in live classrooms may not have the same

outcome within the TLE TeachLive™ Laboratory with simulated student avatars.

Definition of Terms

Teacher Bias

For the purposes of this research study, teacher bias was defined as a personal preference or an inclination that inhibit impartial judgment (Babad, Inbar, & Rosenthal, 1982; Wayman, 2002).

Teacher/Student Interactions

For the purposes of this research study, teacher/student interactions was defined as any interaction observed as described in the protocol handbook and documented as either positive, negative or neutral.

Proximity

For the purposes of this research study proximity was defined by the actual walking to or having face to face contact with the student avatar, proximity did not include any haphazard walking to a student without actual student engagement

Comments

For the purposes of this research study, Positive comments (such as praise) and negative comments (such as put downs or identifying student deficits) were measured by both tone and actual words, each was tagged using the TeachAARs video coding software and used an interrater agreement at 90% or greater.

TLE TeachLivE™ Laboratory

For the purposes of this research study, the TLE TeachLivE™ Lab was defined as a real classroom context in a virtual environment where prospective and practicing teachers interact with virtual students represented by an avatar.

Virtual Rehearsal

For the purposes of this research study, a virtual rehearsal was a live session that occurred within the TLE TeachLivE™ Lab.

Interactor

For the purposes of this study an interactor was a trained actor who played all five student avatars in the TLE TeachLivE™ Lab.

Avatar

For the purposes of this research study, an avatar was defined as a virtual representation of a student in a simulated mixed reality classroom.

Archetype

For the purposes of this study an archetype was defined as a pattern of adolescent behavior that with both either aggressive or passive traits with aggressive or passive tendencies (Driekurs, 1958, 1968; Long, 1985, 1989).

Action Review Cycle (ARC)

For the purposes of this study, the Action Review Cycle (ARC) was defined as any interaction by participants with the simulated classroom that goes through a cycle of a Before Action Review (BAR), an action and culminates with a reflective discourse called an After Action Review (Parry, Pires, & Sparkes-Guber, 2007).

After Action Review (AAR)

For the purposes of this study, the After Action Review (AAR) was defined as a reflective discourse the participants share regarding their interactive experience within the TLE TeachLivE™ Lab (Darling, Parry, & Moore, 2005; Parry et al., 2007).

TeachAARs

For the purposes of this research study TeachAARs was the video coding software used to tag events on recorded video for export into statistical analysis software.

Hispanic Male

For the purposes of this research study Hispanic Male (Female) was defined as it is by the U.S. Census (2011) as a person of Mexican, Puerto Rican, Cuban, South or Central American, or other Spanish culture or origin, regardless of race and was used interchangeably with the term(s) Latino(a).

CHAPTER TWO:
LITERATURE REVIEW

Hispanics in the U.S.

The growth of minority populations in the U.S. has exploded according to the decennial census. Today Hispanics are the largest minority group totaling over sixteen percent of the total population (U.S. Census, 2011). The impact of the growth of this population and the paucity of research literature on students of Hispanic culture labeled ED and the potential bias of the teachers is a theme beginning to emerge in the literature. Therefore, this chapter is a thorough review of the current literature on potential bias of teachers related to Hispanic males labeled ED.

The chapter begins with a definition of Hispanic according to the U.S. Census, and the current status of this population both nationally and within the state of Florida. This section is followed by a summary of the history behind the term Hispanic concluding with a discussion on the use of the terms Hispanic and Latino. The next section provides insight into some of the challenges faced by Hispanics with a narrowing focus on Hispanic males in secondary settings labeled ED. This discourse is

followed by a discussion of relevant studies related to teacher bias of Hispanic males labeled ED. The chapter concludes with potential innovation through technological simulations to both reveal and perhaps counteract bias during teacher preparation before entering a real classroom.

According to the U.S. Census, a Hispanic is defined as a person who classifies themselves in one of the specific Spanish, Hispanic, or Latino categories listed on the Census questionnaire -"Mexican, Mexican American, Chicano," "Puerto Rican," or "Cuban"-as well as those who indicate that they are "other Spanish/Hispanic/Latino". Persons who indicated that they are "other Spanish/Hispanic/Latino" include those whose origins are from Spain, the Spanish-speaking countries of Central or South America, the Dominican Republic or people identifying themselves generally as Spanish, Spanish-American, Hispanic, Hispano, and Latino.

People who identify their origin as Spanish, Hispanic, or Latino may be of any race. In a report for the Pew Hispanic Center in 2009 entitled "Between two worlds: How young Latinos come of age in America" researchers identify that most older Hispanics identify with their country of origin, but the majority of young Hispanics are comfortable with being called

either Hispanic or Latino. This same report further details that as generations pass with more members of a family being native born, many Hispanic children begin to identify themselves as American. As a result of the immense diversity among Hispanics, with many coming from many different countries and over two-thirds of those age sixteen to twenty-five years old being native-born Americans; many see more discontinuity than similarities between themselves and other groups identified as Hispanics (Pew, 2009). These differences, varied life experiences, birth generation, and nativity still do not cause a rift within Hispanics, and when asked, most share that they get along with other Hispanics living in the same geographical location. In a report entitled "Hispanics in the U.S.", the U.S. Census reported in 2006 that the Hispanic population is projected to continue to grow and reach nearly sixty million by 2020. The NCES predicts that during that same time the Hispanic population enrolled in schools will increase by thirty-six percent (Hussar & Bailey, 2011) with the total population increasing by eighteen percent.

The 2010 U.S. Census released its final findings regarding the current number of Hispanics in the U.S. in April 2011. The number of Hispanics in the U.S. is now well over fifty million, increasing by an astounding forty-three percent, since the last

census. Hispanics now account for over sixteen percent of the total U.S. population and were responsible for over half of the total population growth from 2000 to 2010. Over fifty percent of all Hispanics reside in three states, twenty-eight percent live in California, nineteen percent reside in Texas and eight percent make their homes in Florida. Notable however, is that during the past decade even in states with smaller Hispanic population concentrations, Hispanics still accounted for a larger share of the population growth. When looking at the number of children under the age of eighteen, Hispanics accounted for nearly seventy-four percent of the growth in this population (U.S. Census, 2011). A report from the National Center for Educational Statistics (NCES), *The Condition of Education 2010*, shares that in the ten years between 1998 and 2008 the percentage of Hispanic students doubled from eleven to twenty-two percent; the same report details that in 2008, enrollment of Hispanic students exceeded ten million students (Aud, et al., 2010). The NCES further predicts that primary and secondary school enrollment will increase an additional six percent by 2019 (Hussar & Bailey, 2011). The U.S. Business Forecast Report (2011) suggests that Hispanic numbers will continue to rise and expand to near thirty percent of the total population by 2050. In the State of Florida Hispanics accounted

for fifty-seven percent of the population increase in the past decade (U.S. Census, 2011).

Hispanics in Florida

One of seven or fifteen percent of Florida's eligible voters and twenty-two percent of the state's total population are Hispanic (U.S. Census, 2011). According to the American Community Survey in 2009, Florida ranked third in the U.S. for both the total number of Hispanics and the number of Hispanic students enrolled in K-12 schools. Lopez and Taylor (2011) predict that the Hispanic student population will continue to rise; numbers from the U.S. Census (2009) report that nearly seven hundred thousand Hispanic students will be enrolled in Florida schools comprising approximately twenty-four percent of the total student population. With the largest, youngest, and fastest growing minority population in the U.S. and Florida, Hispanics lag behind other demographics in both high school completion and postsecondary enrollment (Alfaro, Umaña-Taylor, & Bámaca, 2006; Chapa & De La Rosa, 2004; U.S. Census, 2011).

Hispanic, Defined or Not?

This lag in outcomes for this population is further complicated by the confusion in the classification and nomenclature of this population. Zubaran (2009) discusses that

history informs us that human classification has no foundation in scientific dogma. Further sharing race is a social construct that itself must be overcome in order to eradicate racism. Zubaran (2009) also states that racism and discrimination have long-term and pervasive impact on the health of individuals and populaces. Williams (1996) adds that the negative impact of racism affects education, employment, and socio-economic mobility. So what is the impact for people who claim to be "Hispanic"? Being that twenty-one countries in the world have Spanish as the primary language spoken; and three additional countries have large numbers of Spanish speaking citizens, the importance of this term is critical to understand. The people of these twenty-four countries share commonalities in culture and a connecting lineage that traces back to Spain or Portugal. Vasquez (1997) shares these commonalities are evident in celebrations, practiced religion, and other cultural characteristics with the people and the countries sharing a common Hispanic or Latin heritage and cultural patterns. Spanish academicians in the late 1800's identified these similarities to a term called Hispanidad (Vasquez, 1997). According to Webster's Dictionary Hispanidad is derived from Hispanism a word, phrase, feature, or anything associated with Spain or Latin America. Vasquez (1997) discusses how the term

Hispanidad allowed academicians of the time to classify smaller individual groups that shared a common heritage to ancient Latin civilizations into a larger universal group. In addition, other terms such as Latinismo and Hispanismo were used before Hispanidad to accomplish the same goal (Kim & White, 2010; Vazquez, 1997).

Hayes-Bautista and Chapa (1987) assert the term Latino should be used to identify any person whose ancestry originates from a Latin American country. Treviño (1987) agrees with Hayes-Bautista and Chapa in that standardized terminology for Hispanic populations needs to be in place and that term should remain consistent with the federal government and national statistical data systems. Treviño (1987) shares that the term Hispanic is used by the federal government and when the term was first used by the U. S. Census in 1980, near fifteen million persons chose to identify themselves as Hispanics. The U. S. Census (2011) now has that number at over fifty million with Hispanics currently being the largest minority group in the U.S.

Challenges Hispanics Face

General Challenges

So what is the impact of this term on education today? The major obstacle related to understanding the education of

Hispanics in the U.S. is that until the 1970's, this population was mostly absent in educational statistics and research. The data needed to identify, understand, and address any issues related to a particular demographic simply did not exist (Orfield, 1986). The first major national report to place an emphasis on high school issues related to Hispanics was conducted by the National Commission on Secondary Education for Hispanics. This report "Make something happen: Hispanics and urban high school" detailed that in 1984 forty-five percent of Hispanic students were dropping out of school. Prior to that report, Brown, Rosen, Hill, and Olivas (1980) put together a report for the NCES called "The condition of education for Hispanic Americans". Both of these reports made a call for action to increase the access, equity, and educational attainment of Hispanic students.

The outcome of a lack of clear data and understanding, some say (Artiles et al., 2010; Artiles, Rueda, Salazar, & Higareda, 2005; DiMaggio, & Garip, 2011; Harry, Hart, Klingner, & Cramer, 2009; Klingner & Artiles, 2003) has led to a level of inequity in society. This imbalance is evident in the fact that many Hispanic students live in poverty and high crime areas, and are subjected to overcrowded schools and inadequately prepared teachers (Haberman, 2010; Orfield, Frankenberg, & Siegel-Hawley,

2010). The inequality and lack of academic opportunities occurs at all levels of education. Gandara (2010) shares that Latinos are the fastest growing but most poorly educated of all ethnic groups. This educational disparity ties directly to social mobility, as educational attainment is a major predictor for future life successes including job opportunities (Stamps & Bohan, 2006).

The lack of uniformity in the U.S. is evident in that Hispanic students are lagging behind their peers in primary, secondary, and post-secondary academic achievement (Garcia, 2010; Gilroy, 2010; Hemphill & Vanneman, 2011). Arias (2007) shares that contributing to the achievement gap is a systemic breakdown in the educational institutions entrusted to educate the youth of America; she also asserts that most minority students are living in economically strapped school districts and are exposed to conditions that do not foster academic success. Rodriguez (2008) asserts that the reason Hispanic youth are dropping out is because the system is discriminatorily pitted against them and a scarcity of social policies to remedy this issue, are simply not in place. Thompson (2004) shares that "...Our Children are being educated in schools that deliver the girls to public assistance and the boys to underemployment and incarceration (p.111)" and further declares that many

minority students are prepared for futures as drop-outs. The Condition of Education 2010, a report issued for the U.S. Department of Education, shares that seventeen percent of all public schools are classified as high-poverty schools. This classification is assigned to school where seventy-six to one hundred percent of the students qualify for the National School Lunch Program, this same report shares that seventy percent of all Hispanic students qualify. Hispanics represent the largest number of students attending high-poverty schools. Of those students attending high-poverty schools, fifteen percent received special education services and sixteen percent were classified as English language learners (ELL), (Aud et al., 2010; Hemphill & Vanneman, 2011; Kalogrides, 2009). Gandara (2010) reports seventy-eight percent of Hispanic students attend predominately minority schools; consequently, these students potentially have fewer educational opportunities with many dropping out of high school. The lack of opportunity, coupled with social, economic, and linguistic isolation perseverates though life often resulting in cataclysmic educational outcomes (Cavazos & Cavazos, 2010). Ford (2010) further shares that minority males more than any other group are grossly underrepresented in gifted education. Additionally, Hispanic students that do go on to college find that they are so far

behind their peers they often leave college (Garcia, 2010; Gilroy, 2010). Stamps and Bohon (2006) discuss the importance of educational attainment as a determinant of social position and a main predictor of life successes. These same authors also share that the educational attainment of Hispanics lags far behind any other group in the U.S. According to a report called Status and Trends in the Education of Racial and Ethnic Minorities the education of Hispanics in the U.S. has long been characterized by high drop-out and low college completion rates (KewalRamani, Gilbertson, Fox, & Provasnik, 2007). Cameron and Heckman (2001) share that the most alarming and concerning educational gap that needs additional focus are the abysmal numbers of Hispanic college enrollments.

Dismal educational outcomes and an increasing population

While the Hispanic population continues to climb steadily, the dropout rate among Hispanic youth is alarmingly high. A report from the Department of Education highlights that the low levels of educational achievement and the high number of drop-outs within the Hispanic demographic are concerning. Hispanics are the largest and fastest growing minority group and of students in grade four, the number of Hispanics went from six to twenty percent. In grade eight, the numbers increase even

further going from seven to twenty-one percent. Currently Hispanics now comprise twenty-two percent of all school aged children (Aud et al., 2010; Hemphill & Vanneman, 2011). The U.S. Census Bureau documented that Hispanics accounted for forty-one percent of youth between ages of sixteen and twenty-four who had dropped out of high school. The same report indicated that the Hispanic population only comprised seventeen percent of the total youth population. This information is further substantiated by numerous reports entitled, "*Dropout Rates in the U.S.*", written for the U.S. Department of Education. These numbers have improved some for native-born Hispanics, but Hispanics are still the most likely ethnic minority group to both drop-out of high school and not get a college education (U. S. Census, 2011).

DeGarmo and Martinez Jr., (2006) note that academic disparity is well documented among Hispanic students and this disparity contributes to the high number of dropouts within this demographic. Artiles and Bal (2008) state that the disproportionate representation of minorities in special education has been a topic of discussion within the U.S. for many years. Ferri and Conner (2005) discuss that one of the factors that contributes to the overrepresentation of minorities in special education is the racial disparity that exists between

the new teacher pool and the diverse student populations, which they teach. Unfortunately, this occurrence is not new. In fact, The U.S. Office of Civil Rights described the phenomenon of overrepresentation of minority children in certain disability categories as a problem since the late 1960's (Artiles, Harry, Reschly, & Chinn, 2002). Achilles, McLaughlin, and Croninger (2007) discuss that overrepresentation may lead to school exclusion, which in turn leads to an academic and social disconnect, which spirals into more exclusion and subsequently increases the odds of academic failure and school dropout.

Disproportionate Representation and Potential Teacher Bias

Artiles et al., (2010), argue that disproportionate representation of culturally linguistically diverse learners in special education is exacerbated by the continued support of dogmatic dominant culture explanations. Skiba et al., (2008) assert that racial disparity in special education is an issue of contention. Ferri and Conner (2005) discuss that one of the factors that contributes to the overrepresentation of minorities in special education is the racial disparity that exists between the new teacher pool and the diverse student populations, which they teach.

The cultural divide that exists between the learner and the teacher has been a topic of contention for many years (McKown & Weinstein, 2008). This divide perseverates within the educational institutions that produce teachers. The Condition of Education (2009) indicated about forty-two percent of all students in schools come from minority backgrounds. The majority of these children attend schools that have high minority student populations and are in high poverty areas (Kalogrides, 2009). In urban areas, the percentage of minorities is even greater. Consequently, many of the Caucasian, female, middle-class educators who teach in these schools have very little in common with those they teach and for those educators teaching in urban or repressed areas of the country this lack of commonality is even greater (Haberman, 2010; Milner, 2011). According to Stevens, Hamman and Olivarez Jr., (2007) very few teachers come from underrepresented groups. Moreover, Picower (2009) shares that the pool of potential educators and their faculty are mostly white. Teachers are entering the classroom inadequately prepared to work with socioeconomically disadvantaged students most of which are either Hispanic or African American (Kellam, Ling, Merisca, Brown, & Ialongo, 1998).

Researchers discuss that educational bias emerges when educators have a lack of background or low expectations regarding the academic performance of minority students that impacts or inhibits their judgment. These authors further assert that these biases denigrate the academic experience of minority students and potentially drive them away from both educational attainment and opportunity (Forster, Algozzine, & Ysseldyke, 1980; McKown & Weinstein, 2008; Richardson, 2009; Stevens, Hamman, & Olivarez Jr., 2007; Tapia, 2004; Tenenbaum & Ruck, 2007; Thompson, 2004). Other researchers speak to the fact that many educators are likely to view children from minority backgrounds as less capable of academic successes and share that lowered expectations have negative consequences on both academic achievement and behavioral outcomes of the minority students, which they teach (Clark & Artiles, 2000; Day-Vines & Terriquez, 2008; Foster, Algozzine, & Ysseldyke, 1980; Hyland, 2005; Minor, Onwuegbuzie, Witcher, & James, 2002; Stevens, Hamman & Olivarez, 2007; Tenenbaum & Ruck, 2007; Walker-Dalhouse & Dalhouse, 2006). Day-Vines and Terriquez (2008) further indicate that school failure and poor behavior are the accepted norm for many minority students with the focus being on student deficits rather than their strengths.

Sleeter (2001) shares that non-minority students and their non-minority professors many times state they do not see color or race; using dismissiveness within the racial context to deflect issues of culture. Many times marginalizing minority PTs in their programs and trivializing their voices. Within their work Trent, Kea, and Oh (2008) discuss how universal invisibility of the issues around race and culture proliferate the failure to act to address those issues within both general and special teacher education preparation programs.

Students with Emotional Disturbances

One specific population that teachers often view from a deficit model are students labeled ED. According to Kauffman (2005) local and state education agencies and school districts use various terms such as behavior disordered, emotionally handicapped and socially maladjusted to classify students who manifest or exhibit challenging behaviors, however, federal legislation uses the term "emotional disturbances" (ED). According to Wehby, Lane, and Falk (2003), students with ED need specialized instruction because their specific social and behavioral challenges many times disrupt the classroom environment.

Wagner and Davis (2006) state that students with ED have social difficulties and are prone to patterns of being disconnected from school, failing academically, having poor social adjustment, and being involved with the criminal justice system. Reschly and Christenson (2006) share one of the most susceptible populations for dropping out of school are students with disabilities and for students labeled ED that level of vulnerability are greater than for any other disability category with over sixty-five percent of those labeled ED failing to graduate. Yet, many teachers entering the classroom are inadequately prepared for classroom management and to work with socioeconomically disadvantaged students, most of which are either Hispanic or African American (Kellam, Ling, Merisca, Brown, & Ialongo, 1998). Though all teacher preparation programs invariably teach classroom organization and behavior management skills, perhaps these skills should be taught more thoroughly, with adequate supervision in a real classroom context with a diverse population of students, including Hispanic males (Siebert, 2005).

Bias exacerbated for Hispanic Males who are ED.

A lack of experience in management or in working with diverse populations can lead teachers to focus on a deficit model approach. Landrum, Tankersley and Kauffman (2003) share

that Hispanic Males who are ED have higher levels of retention and exclusionary discipline than their peers. Yet the role of the teacher in counteracting these issues for students with ED is clearly evident. While researching secondary special educators, Bouck (2005) shared that a caring, well-qualified, well-prepared teacher is "the most important influence" (p. 125) in the classroom. McKinney, Haberman, Stafford-Johnson, and Robinson (2008) affirm, "that teacher quality is the single most accurate indicator of students' academic success" (p.69). Minor, Onwuegbuzie, Witcher, and James (2002) take things a step further by disclosing that student academic achievement is contingent upon the interplay in the relationships between the teacher and the student. Blanton, Sindelar and Correa (2006) identify that little research has been conducted on the efficacy of special education teacher education programs and one specific area of research that needs further inquiry is the impact teacher bias has on the delivery and outcome of instruction. Simply but clearly stated is this critical point by Oswald, Best, Coutinho, and Nagle (2003), whose research has shown that teacher bias leads to the overrepresentation of males labeled ED; with McKown and Weinstein (2008) reporting that an individual may hold unknown implicit biases and prejudicial beliefs, outside of their control. Reyes (2003) shares that

educators must be aware of their own personal baggage before being able to understand the school experiences of the students they teach. Therefore, tools and experience need to be created to challenge teacher bias with specific research related to Hispanic males and the paucity of literature on Hispanic Males and ED.

**Research on Bias and Hispanic males with ED
in secondary settings to date**

To build a case for research on teacher bias of Hispanic Males with ED, the following research studies were selected for inclusion in this chapter. The articles included in this review are those that included the terms bias, Hispanic males, ED and secondary settings. Using multiple databases and research resources, one hundred thirty-five peer-reviewed articles contained at least two of the search criteria mentioned. The identified articles were reviewed extensively for relevance, content, and to ensure they were in fact empirical research studies. After multiple reviews, eight research studies were identified. Demonstrating a dearth of research exists related to bias and Hispanic males with emotional disturbances in secondary settings.

Table 1 lists the studies and details the methods, subjects, settings, and key findings (Achilles, McLaughlin, & Croninger, 2007; Coutinho, & Oswald, 2005; Crawford, 2007; Hosp, & Reschly, 2003; Nesman, 2007; Reschly, & Christenson, 2006; Skiba, et al., 2006; Tobias, Cole, Zibrin, & Bodlakova, 1982). A summary of the studies and the researcher's findings are also provided in the text to determine implications for future research. These key studies are summarized in chronological order to show the progression as well as the lack of research in this area.

In 1982 Tobias et al. investigated whether the ethnicity of teachers and/or students influenced special education service referrals for a secondary male student with behavior problems. One hundred ninety-nine teachers from different ethnic backgrounds participated in the study, although the majority of teachers were white. Participants were all from a New York metropolitan area and many taught in schools that had large minority populations. Data were gathered by presenting case studies to the participants of a high school student in 10th grade with varying ethnic backgrounds who was also labeled as verbally and physically abusive towards others. The teachers were asked to review the case studies then answer a series of questions, two of which were the dependent variables, which were

to indicate whether the student was suitable for a normal classroom environment or should be recommended for special services.

The results of this study showed that teachers did not respond to the case studies by referring the student to specialized services. Instead, it showed that teachers were more accepting of the behavior of students in their own ethnic groups than those of others. The researchers did find significant differences in the race of the teacher and referral for special education services, with white teachers referring at higher rates than Black or Hispanic teachers. The study also found that students were recommended for specialize educational services at higher rates when they belonged to an ethnic group dissimilar to the teachers' ethnicity. The authors share that a hidden assumption when researching ethnic differences is that bias against a certain group could be the cause for referral of the minority students. The researchers also shared that no specific bias could be ascertained from the review of case studies within this investigation and suggest that alternative factors and variables must be considered with further research being warranted.

Hosp and Reschly (2003) conducted a meta-analysis of ten empirical studies on the rate of referral for three racial groups, Caucasian, African American and Hispanic. In looking at the various studies, the researchers discuss the meta-analysis revealed variations that were significant between different racial groups with minorities having a greater rate of referral than their non-minority peers in multiple disability categories including ED. The selection criteria included studies having a secondary focus. The results of the meta-analysis revealed higher rates of referral for both Hispanic and African American students. A notable finding was that although eligibility rates for Hispanics were less than their Caucasian peers they were still referred for special education at higher rates. The authors shared implications for future research that included further national disaggregation of the data related to special education referral and eligibility and the development of a national database that includes frequency data for special education referral by racial group classification.

Coutinho and Oswald (2005), researched gender disproportionality in special education. Data were collected from students in three disability categories (MR, SED, and LD). These categories are found in nearly 15,000 schools in over 88,000 school districts according to the Office of Civil Rights'

(OCR) Elementary and Secondary School Survey (E & S Survey). The results revealed nationally disproportionate gender ratios of male to female students in special education. The results also revealed that boys were 3.5 times more likely than girls to be identified with a label of SED; when the variable of Hispanic were added the disproportionality increased to 3.65. Disproportionality across disability categories analyses were repeated for all states and gender was found to be a significant predictor with the greatest range of gender disproportionality existing for students labeled SED being as low as 2.17 to 1 in Hawaii to as high as 5.95 to 1 in West Virginia. The researchers further shared that the data do not show a significant relationship between gender disproportionality. However, the data highlights the disproportionate number of boys labeled SED, and the researcher shares that overrepresentation and identification of boys with SED was the most poignant category that emerged.

Reschly and Christenson (2006) study revealed a relatively diminutive variance in engagement between students with/without mild disabilities, however small, the results still showed significance especially in regards to engagement variables as predictors of dropping out of school. Although not explicitly discussed, bias can emerge from within the engagement category.

The researchers indicated that the identified sample population was purposely oversampled to recruit Hispanic high school students and further share that males are identified at higher rates. However, these data on student race and gender were not further disaggregated in the study.

In the second set of analyses, the variables used as covariates were achievement test scores, grade retention, and SES. The engagement variables were again significant predictors of drop-out, even more so for those at the highest risk of poor academic outcomes, such as students with EBD and LD. Finally being held back or being retained was discussed as a powerful predictor of drop-out for all students.

In their study Skiba et al., (2006) explored teacher perceptions as causal factors in the minority disproportionality paradigm within school districts that show evidence of considerable disproportionality. This qualitative study did not specifically identify a secondary focus, but it did utilize district level administrators and special education directors as participants who were both Hispanic and male. Participants discuss disproportionality within their district with ED being a considered category. The researchers present a main and superseding theme that emerged from the dialogues. The outcomes

of the study show that practices that may cause and subsequently replicate disproportionality are multifaceted and may even be self-contradictory. Researchers also noted that an interesting finding of the study was the belief that accountability testing creates pressures that increase referrals to special education.

In the article by Achilles, McLaughlin, and Croninger (2007), the authors studied students with disabilities and the disciplinary actions of teachers. Data were collected by phone questionnaires, and face-to-face interviews. Data were analyzed by logistic regression to identify factors of exclusion among students in three high-exclusion disability groups, EBD, OHI with a diagnosis of ADHD, and LD. The 1,824 participants of the study were between the ages 7 to 14 years and were selected from the SEELS database.

The results indicated that students labeled EBD and ADHD were more likely to be excluded from school than students labeled that were labeled LD. The authors also shared that bias may be a factor in school exclusion in middle and high school. Ethnicity, age, being male, low SES, multiple school changes, urban schooling, and low parent satisfaction with school were also significant factors leading to school exclusion. The study had results that changed among the groups when paired with other

factors. The researchers attributed this change to the complexities of ethnicity and additional related factors citing anomalies and indicating that future inquiry is needed.

The study by Crawford (2007) was a qualitative ethnographic study with four veteran special education teachers who taught in high school and were studied over a seven week period. These teachers had classrooms with a majority of Black and Latino students who the authors share were more likely to be identified in subjective high incidence categories. Although the author did not overtly discuss bias, they do discuss relevant experts such as Brophy and Good, Rosenthal and Jacobson, and Weinstein and McKown as to how biased statements shared by the four teachers being studied, contribute to the negative academic consequences for their students.

An example of bias noted by the researcher was the teachers exposed their students to low-level curricula; sharing that they did not feel it was necessary to create lesson plans. In fact, the teachers based their curricula on their beliefs of the inferior intellectual capacity of their students; furthermore blaming the students for this belief. Consequently, the veteran teachers justified their lowered expectations and the use of elementary level curricula at the high school level. The study

showed that teachers of special education with a majority of Blacks and Latinos often exposed their students not only to low-level curricula, but also to material that was full of racist images.

The focus of Nesman's (2007) study was on the high drop out rates of Latino students and the influences of a label such as ED had on a students' decision to drop out of school. Both male and female high school students participated in the study. The main themes emerging from this research were a lack of support for progress in school, which emerged as the central theme for dropping out; lack of caring by school personnel which included low expectations, discriminatory discipline, failing to engage and motivate, and lack of cultural linguistic adaptations

Additional themes discussed by students in this study consisted of getting into trouble and taking on adult roles contributed to dropping-out. Student also noted social attitudes towards immigrants and neighborhood influences made an impact. The researchers conclude the article with implications for further research on how to effectively engage Latinos and raise graduation rates.

Table 1 Reseach Studies on Bias

RESEARCHER	METHODS	SUBJECTS/ SETTING	KEY FINDINGS
<p>Tobias, S., Cole, C., Zibrin, M., & Bodlakova, V. (1982). Teacher-student ethnicity and recommendations for special education referrals. <i>Journal of Educational Psychology</i>, 74(1), 72-76.</p>	<p>Case history of 16 y.o. male that was consistent except in that the ethnic background was varied</p> <p>AS EITHER</p> <p>Black, Hispanic, White, or No Ethnicity</p> <p>ANOVA 3X4 analysis completed</p>	<p>199 Teachers from different ethnic backgrounds</p> <p>50 schools with over 40,000 students in Southwestern U.S.</p>	<p>Results indicated no differences in the referral of students to special educational services simply based on ethnicity.</p> <p>Although the results derived from the case histories showed no difference, those results were inconsistent with field investigations which reported minority students being referred to special education at higher rates.</p> <p>A noteworthy finding in this study was that the teachers who referred students from ethnic groups differed from theirs at higher rates.</p>
<p>Hosp, J. L., & Reschly, D. J. (2003). Referral rates for intervention or assessment: A meta-analysis of racial differences. <i>Journal of Special Education</i>, 37(2), 67-80.</p>	<p>Meta-Analysis</p> <p>Study is a synthesis looking at the results of individual studies to</p>	<p>44 Empirical Studies</p> <p>Studies were selected on the basis of criteria intended to provide a comprehensive</p>	<p>This meta-analysis allowed the researchers to share that a Quantitative synthesis of the research may allow for a better understanding of overall referral rates and the processes involved.</p> <p>The meta-analysis also revealed significant variation in the referral rates of different racial groups with</p>

	<p>compare referral rates and Population rates of Students from different racial backgrounds</p> <p>Frequency counts were across 2 factors so the rate ratio was used as the effect size statistic was used to compare results to eligibility rates</p>	<p>view of the samples used in research on Overrepresentation</p> <p>Eligibility criteria were as follows: Distinguishing features, Research respondent, Research methods, Cultural and linguistic range, Time frame, And Publication type</p>	<p>minorities having a greater rate of referral than their non-minority peers.</p>
<p>Coutinho, M. J., & Oswald, D. P. (2005). State variation in gender disproportionality in special education. <i>Remedial & Special Education</i>, 26(1), 7-15.</p>	<p>2000-2001 OCR E&S Survey</p>	<p>Students in the U.S. 14,645 School Districts 88,650 Schools ONLY Information related to Enrollment AND</p>	<p>The results revealed nationally disproportionate gender odds ratios of male to female students in special education.</p> <p>Boys are nearly 3.5 times more likely than girls to be identified with a label of SED.</p>

		<p>3 Disability categories MR, SED and LD</p>	<p>This disproportionality is repeated in all state gender odd ratios calculated with the widest range of gender disproportionality existing for students label SED 2.17 in Hawaii to 5.95 in West Virginia.</p> <p>The authors share that the data do not show a significant relationship between gender disproportionality - Yet they highlight the disproportionate number of boys labeled SED and also share that overrepresentation and identification of boys with SED was the most noticeable category.</p>
<p>Reschly, A. L., & Christenson, S. L. (2006). Prediction of dropout among students with mild disabilities: A case for the inclusion of student engagement variables. <i>Remedial & Special Education, 27</i>(5), 276-292.</p>	<p>Student survey using NELS and SES MANOVA AND Logistic Regression Analyses were conducted</p>	<p>Parent-identified students with LD or SED 1,064 students were identified as having LD, 338 as having EBD/SED, and 96 as having both LD and EBD/SED</p>	<p>This study revealed a relatively minuscule variance in engagement between students with/without mild Disabilities.</p> <p>However small, they were the results showed significance especially in regards to engagement variables as predictors of dropping out of school.</p> <p>In the second set of analyses, the variables used as covariates (achievement test scores, grade retention, and SES) - The engagement variables were a significant predictor of dropout - even more so for those at the highest risk of poor academic outcomes - students with EBD and LD.</p> <p>Being held back or being retained was</p>

			discussed as a powerful predictor of dropout for all students.
Skiba, R., Simmons, A., Ritter, S., Kohler, K., Henderson, M., & Wu, T. (2006). The context of minority disproportionality: Practitioner perspectives on special education referral. <i>Teachers College Record, 108</i> (7), 1424-1459.	Qualitative Study Face to Face Interviews Analyzed for themes by using data reduction, data display, AND conclusion drawing and verification Methods	64 Educators Seven school districts 14 Elementary Schools in and a large Midwestern city	This study looked to explore perceptions as possible causal factors to minority disproportionality in school districts that show evidence of substantial disproportionality. The following main and ultimately superseding theme emerged from the dialogues - the practices that may cause and subsequently replicate disproportionality are multifaceted and may even be self-contradictory. Researchers also noted that an interesting findings of the study was the belief that accountability testing creates pressures that increase referrals to special education.
Achilles, G. M., McLaughlin, M. J., & Croninger, R. G. (2007). Sociocultural correlates of disciplinary exclusion among students with emotional, behavioral, and learning disabilities in the SEELS national dataset. <i>Journal of Emotional and Behavioral Disorders, 15</i> (1), 33-43.	Phone Questionnaire Interview Analyzed using logistic regression to identify Factors of exclusion	1,824 students Age 7 to 14 From the SEELS database EBD = 526 ADHD = 582 LD = 716	The results indicated that students labeled EBD and ADHD were more likely to be excluded from school than students labeled LD. Ethnicity, age, being male, low SES, multiple school changes, urban schooling, and low parent satisfaction with school were also significant factors leading to school exclusion.

	<p>among students in three high-exclusion disability groups:</p> <p>EBD, OHI with a diagnosis of ADHD, And LD</p>		<p>This study had results that changed among the groups when paired with other factors...the researchers attributed this to the complexities of ethnicity and additional related factors citing anomalies and indicating that future inquiry is needed.</p>
<p>Crawford, F. A. (2007). Why bother? they are not capable of this level of work: Manifestations of teacher attitudes in an urban high school self-contained special education classroom with majority Blacks and Latinos. <i>Urban Learning, Teaching, and Research Special Interest Group, America Educational Research Association (eYearbook)</i>, 12-24.</p>	<p>Qualitative, Ethnographic study</p>	<p>4 Veteran Special ED teachers who teach in high school</p>	<p>Two themes emerge in this study when investigating and reviewing the veteran teachers curricula.</p> <p>First that they had unexamined assumptions that maintained the status quo AND Second they did not provide their students with ample opportunity to develop higher order thinking.</p> <p>The veteran teachers in this study voiced that their students were responsible for the teachers' beliefs thereby expecting less academically and the resulting use of elementary level curricula at the high school level were justified.</p>

<p>Nesman, T. (2007). A participatory study of school dropout and behavioral health of Latino adolescents. <i>The Journal of Behavioral Health Services and Research</i>, 34(4), 414-430.</p>	<p>Qualitative Focus Group interviews using questionnaire</p>	<p>14 groups Group interviews - consisting of 47 at-risk and 54 high-achieving Students in Hillsborough County FL school district</p>	<p>The following themes emerged from this study</p> <p>A lack of support for progress in school emerged a central theme for dropping out.</p> <p>Lack of caring by school personnel includes low expectations, discriminatory discipline, failing to engage and motivate, and lacking cultural linguistic adaptations.</p> <p>Additional themes of getting into trouble and taking on adult roles were also discussed as contributing to drop-out.</p>
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Negative Impact of Bias on Academic Achievement

The studies summarized show a definite pattern by teachers of low expectations and tendencies towards bias against Hispanic Males labeled ED at the secondary level. According to Oswald, Best, Coutinho, and Nagle (2003), a significant factor, which research has shown to lead to the overrepresentation of males labeled ED, is teacher bias. Sadly, many of these biases are implicit and are seemingly outside of the conscious control of the educators (Marx, 2008). Researchers provide evidence that educational bias emerges when educators have low expectations regarding the academic performance of minority students. This bias inherently rescinds opportunity, experience, and likelihood that minority students will realize their educational potential; also sharing that bias vitiates the academic experience of minority students and pushes them away from both educational achievement and opportunity (Forster, Algozzine, & Ysseldyke, 1980; McKown & Weinstein, 2008; Richardson, 2009; Stevens, Hamman, & Olivarez Jr., 2007; Tapia, 2004; Tenenbaum & Ruck, 2007; Thompson, 2004). Edl, Jones, and Estell (2008) also share that in predominantly European American schools, minorities are rated less socially competent than are their peers. Edl, Jones, and Estell (2008) also share that in predominantly European American schools, minorities are rated less socially competent

than their peers. Day-Vines and Terriquez (2008) indicate that school failure and poor behavior are the accepted norm for minority students with the focus being on student deficits rather than their strengths.

Use of TLE TeachLive™ in Teacher Preparation

Examining the biases of teachers is critical, but empirical research on this topic is difficult to create while ensuring protection of human subjects. Peters (1987) shares details from his 1971, book *A Class Divided* about a controversial prejudice simulation exercise conducted in a third grade Iowa classroom, known as the "Blue Eye, Brown Eye Experiment". Jane Elliot a third grade teacher in a small Iowa town shares that in 1968, the day after the assassination of Martin Luther King Jr. she decided to segregate her students based on their eye color, to teach them a lesson on discrimination. In this two-day exercise, although all students were Caucasian, and had been friends prior to the experiment once told they were either superior or inferior based solely on their eye color, troubling behaviors emerged, including, aggression, discrimination, and lower academic achievement. A couple of years later both Jane Elliot and one group of her students were filmed by ABC News, those experiences together with the interactions and their feelings were revisited for Peter's 1987 book. The reunion

footage together with original 1970 ABC News footage was combined for a documentary called *A Class Divided* that originally aired on the Public Broadcasting Network, March 26, 1985. In these interviews and discussions, Mrs. Elliot and her former students share how the experiment had impacted their lives. Jane Elliot's exercise has been replicated with adult subjects in academia and has had positive results; most notable was that although nearly all the subjects as well as the facilitator reported that the experience was stressful participants shared it was meaningful for them (Byrnes & Kiger, 1990; Stewart et al., 2003). Byrnes and Kiger (1992) further attest that researchers can ethically defend any potential harm to participants by pointing out the overall beneficence of the exercise. Whereas Williams and Giles (1992) argue that, the risks far outweigh any supposed benefit. Since this type of research is not possible due to the ethical implications for students today, the University of Central Florida (UCF) has created a virtual classroom for teachers to practice real time with a class of virtual student avatars, to gain simulated practical experience. According to Bailenson et al., (2008), real-time avatar interaction is a relatively new and emergent technology. The initial prototype at UCF was developed with an emphasis on behavior management, the primary area of concern for

most beginning teachers (Dieker, Hynes, Hughes, & Smith, 2008). This study will expand upon this work and take an empirical look at potential PT bias towards Hispanic males labeled ED in a simulated setting.

In order for learning to occur the environment must be meaningful and reflection must occur (Boe et al., 2007; Shulman, 2002). The ARC cycle together with AARs have been used by the military for years, to better prepare their troops. Parry et al., (2007) shared the ARC cycle originated at the U.S. Army Training Center. According to Holman, Devane, and Cady (2007) the ARC cycle originated in 1981 at the U.S. Army Training Center and has been refined through the years. The ARC cycle cultivates an environment of increased performance, heightened productivity, and reinforces success in changing environments all while embodying a culture of accountability (Darling et al., 2005; Parry et al., 2007).

ARC procedures are similar to the continuous improvement model (CIM) commonly used in educational settings. Within CIM the cycle is to plan, do, check, and review (Mercier Smith, Fien, Basaraba, and Travers, 2009). Shulman (2002) shares, "...we often talk about our work as attempts to provide mirrors and lenses that can assist others to pause, reflect, and see their

work differently as they move into a next stage of activity. Thus, action without reflection is unlikely to produce learning” (p. 41). Reflection is a powerful tool but it is of little value if it is not part of a complete action plan. The ARC provides that framework and promotes reflective discourse in the form of the AAR (Clark, 2009; Darling et al., 2005; Department of the Army, 1993; Parry et al., 2007; USAID, 2006). Clark (2009) shares AARs embolden all stakeholders to share and learn together, resulting in continuous improvement. The review and the causality of actions are important in enterprise and the appraisal cycle allows for an accurate indication of which actions will produce a desired result, providing team members with circumstance-contingent predictability (Carlile & Christensen, 2005). In an age of accountability, the use of an ARC to ensure vested learning and continuous improvement benefits all parties because it produces reflective, accountable practitioners (Clark, 2009; Darling et al., 2005; Department of the Army, 1993; Dilworth, 2009; Mezirow, 1990; Parry et al., 2007; USAID, 2006).

CHAPTER THREE: METHODOLOGY

Introduction

The purpose of this study was to examine how reconidite bias influence interactions with virtual adolescent male Hispanic students identified with Emotional Disturbances (ED). The study was conducted in the TLE TeachLivE™ (Teaching Learning Environment: Teaching & Learning in an Interactive Virtual Environment) Laboratory. The purpose of the Lab is to provide teachers an avenue to sharpen their skills with virtual children and make mistakes without affecting real students. The TLE TeachLivE™ Lab can provide a place where teachers can repeat their experiences without the virtual student avatars remembering the initial encounter. In a simulated experience, a teacher can "do what they wouldn't, couldn't, or shouldn't do in real life to obtain compelling, trial-and-error examples of why and how key methods work" (Dieker, Hynes, Stapleton, & Hughes, 2007, p. 11). This study expands upon the already established work within the TLE TeachLivE™ Lab by examining how potential PT bias influences participant interactions during virtual rehearsal experiences. The research questions that were addressed in the Lab are as follows:

Research Questions

1. Within a simulated classroom environment do the identification and exchanging of the label emotionally disturbed between two virtual adolescent Hispanic male students increase, decrease or maintain the PT's frequency of:

- a. Positive comments, b. Negative comments,
- c. Proximity, d. Cultural statements,
- e. or the content of AAR comments

2. Does providing and completing an instructional module on Cultural Linguistic Diversity and a module on Emotional Disturbances and classroom management influence a PT's frequency of:

- a. Positive comments, b. Negative comments,
- c. Proximity, d. Cultural statements,
- e. or the content of AAR comments

when interacting with adolescent Hispanic male students identified with and without emotional disturbances within a simulated classroom environment.

3. How does a PT's rating on bias measures relate towards performance on data in research questions 1 and 2 for:

Cultural

Disability

Null Hypothesis

There is no statistical significant difference on the frequency of PT/student avatar interactions in

- a. Positive comments
- b. Negative comments,
- c. Proximity,
- d. Cultural statements

resulting from PT bias or access to an online module.

Participants

A sample of convenience of twelve undergraduate students majoring in education and enrolled in an exceptional education class, were randomly assigned to either a control or experimental group for this study. All participants were enrolled fulltime at the University of Central Florida and voluntarily agreed to participate in this study. Data were

collected in a simulated teaching environment, having five virtual student avatars, virtual student participants. Each avatar has a distinct personality archetype (Long, 1985, 1989) and although the skin tones of the student avatars changed between UCF and Utah as indicated in Table 2 the personalities archetypes remained consistent throughout the study and did not change (see Figure 1).



Figure 1 Student Avatars

The five student avatars identified in Figure 1 and their personalities are as follows: Monique is seated in the front of the classroom and is profiled to be an aggressive dependent personality. Francis is seated next to Monique also in the front of the classroom he is profiled to be a passive dependent personality. Maria who is seated behind Francis is profiled to be a passive independent personality. Marcus is seated in the middle of the back row and is an aggressive independent personality. The final student seated behind Monique is Vince and he is an aggressive dependent personality. For this study although Marcus and Vince were profiled to be Hispanic adolescent males, the interactors, who are professional actors playing the roles of the adolescent student avatars, did not have any discernible cultural accent or cadence in their speech patterns that would have identified either student avatar as Hispanic.

Setting

. All research was conducted at the University of Central Florida's TLE TeachLive™ Lab (see Figures, 2, 3, and 4).



Figure 2 Lab set-up



Figure 3 Lab set-up with participant engaged in lesson

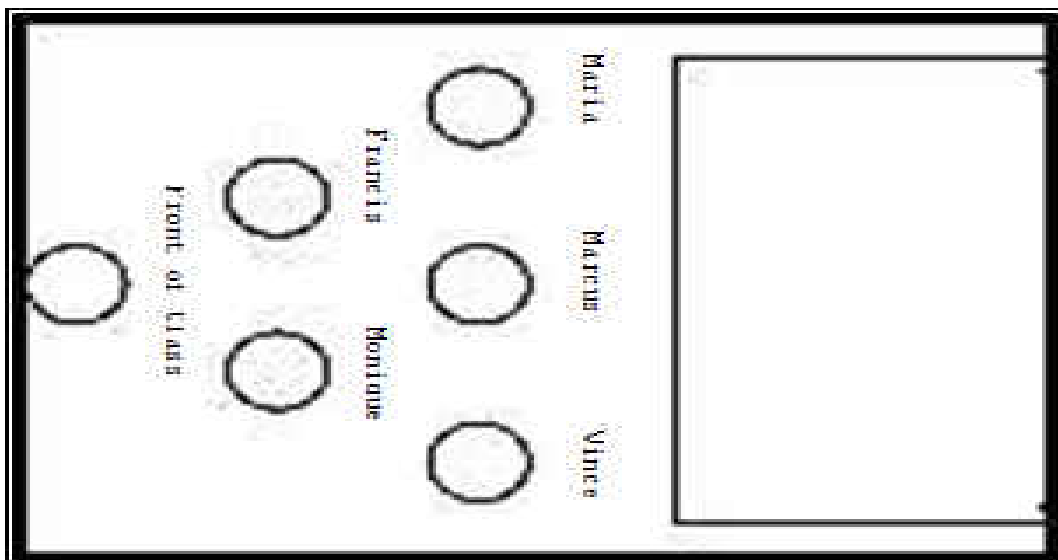


Figure 4 TLE TeachLive™ Lab set-up Diagram

The TLE TeachLivE™ Lab is a virtual rehearsal environment where participants can practice and hone their teaching skills, without putting “real” children at risk. This is accomplished by utilizing a mixed-reality environment that looks like a real classroom but is populated with student avatars. Each student avatar has a distinctive personality and each scheduled session can be tailored as requested to focus on specific training objectives, focusing on content, pedagogy, or both.. Student avatar personalities for this study are detailed in the previous section.

Research Design

This research study employed a true-experimental mixed methods design with a weightless control; quantitative and qualitative data were collected and analyzed. The purpose of this study was to determine how the frequency of interactions changed when a virtual male Hispanic secondary student was identified as emotionally disturbed. Multiple observable dependent measures of the interactions of pre-service teachers were collected. The timed video data were collected and coded using a video coding program called TeachAARs. Prior to going into the TLE TeachLivE™ Lab, each participant took a baseline survey via the Understanding Prejudice webpage and answered a brief questionnaire regarding their knowledge of working with

students with ED or from Cultural Linguistic Diverse (CLD) backgrounds. After these initial tasks were completed, participants then interacted with virtual student avatars within the TLE TeachLivE™ Laboratory four times. All participants rated how they expected individual student avatars to perform within each simulated classroom experience based solely on a brief description of that student. All experiences including the intervention portion of the study were video recorded to ensure fidelity of treatment. Prior to and after the initial and final experiences, participants answered questions on their level of familiarity with students from both CLD and ED populations. Additionally, after each live virtual rehearsal experience, participants were asked to report how they felt about their session in the TLE TeachLivE™ Lab; this report was henceforth referred to as an After Action Review (AAR). A non-equivalent group design was utilized because a sample of convenience of human subjects was used. All human subjects received the treatment which included the completion and scripted dialog with the researcher on modules about emotional disturbances and cultural competence produced by Vanderbilt University's IRIS Center and housed online on the Department of Education's IDEA Partnerships webpage called the Learning Port. Each participant also took two online implicit association tests

via Harvard University's Project Implicit[®], one on race and the other on disability, screen shots showing participant bias were collected, for analysis (see appendix C).

Procedures

All participants that went through the virtual rehearsal experience reflected on those experiences using an Action Review Cycle (ARC). The Action Review Cycle (ARC) is a process of reflective practice made up of three distinct phases; the Before Action Review (BAR), an action, and a culminating reflective discourse called an After Action Review (AAR) see figure 1 and figure 2.



Figure 5 Action Review Cycle
(change-management-toolbox.com)

Being that the TLE TeachLive[™] Laboratory is a mix-reality environment the ARC cycle was used in this study. Participants went through two distinct ARCs during their participation in the study. The ARC cycles included interactions by participants

either within the simulated classroom environment or in a separate room designated to work online and engage in a discussion regarding the intervention modules. Each ARC began with a Before Action Review (BAR), then proceeded to an action or the actual simulation or completion of online modules, and culminated with a reflective discourse called an After Action Review (AAR). The study ARC lasted the full three weeks participants were engaged in the study. Each completed a pre/post screener/bias survey; took two implicit bias tests on race and disability; and answered post study questions as part of the study ARC. Additionally, for each of the four sessions within the TLE TeachLive™ Lab, participants completed a session ARC cycle. The session ARC began with each participant meeting the student avatars and rating how they perceived each student would behave prior to the live session. Participants then interacted for eight minutes engaging the class in a brief lesson provided by the researcher on solving multiple integer addition problems. After each live session, participants answered one AAR question about the interaction. Each session ARC cycle differed based on the virtual student avatar's label and whether or not participants have completed the online modules (see Figure 6). Data were collected as detailed in Table 2.

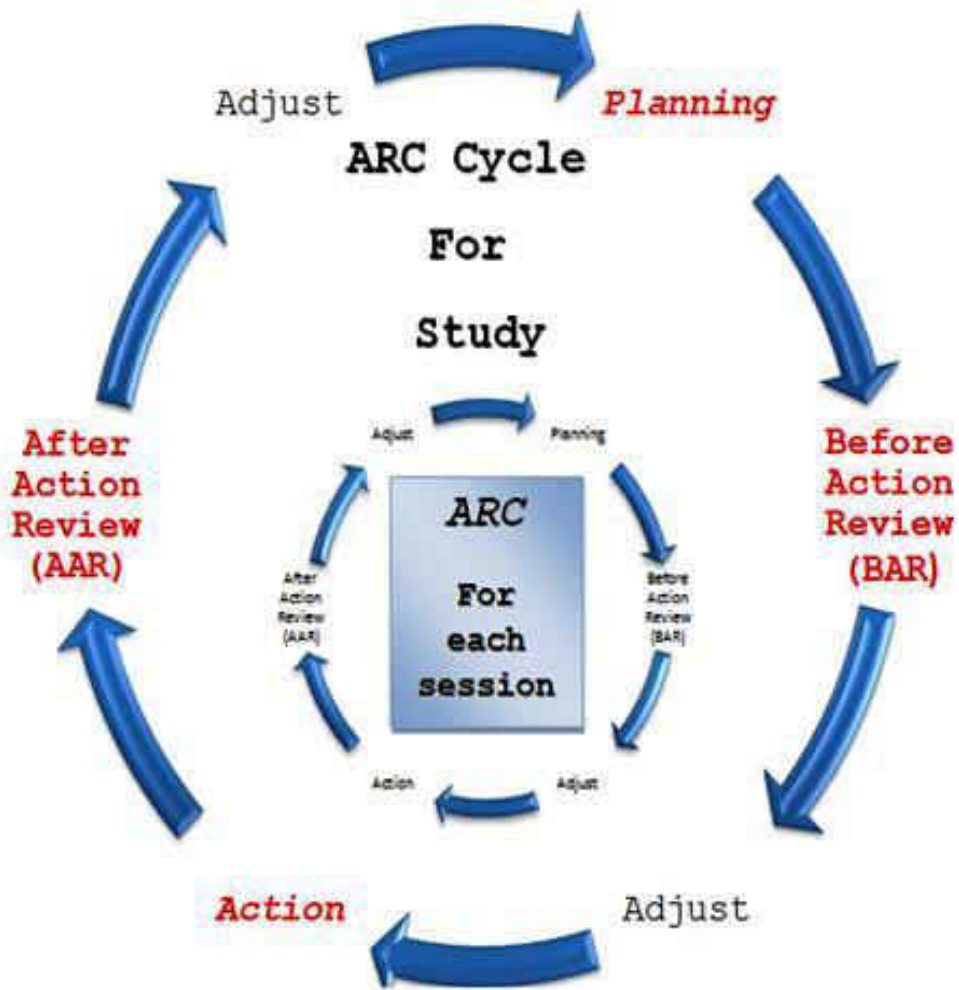


Figure 6 ARC within the ARC

Table 2 ARC Cycles for Study

Data Collection Procedures			
	<p>For the overall study each participant completed an ARC cycle of</p> <ul style="list-style-type: none"> a) Pre/Post-screener bias/attitude survey b) Five total sessions - Four within simulated classroom and One to discuss online modules c) Take implicit association tests on disability and race Complete IRIS modules and participate in discussion on bias and behavior at Midpoint for Experimental and after study for Control d) Three Pre/Post-study questions <p>Additionally each session consisted of the ARC cycle detailed below</p>		
	Control (n=7)	Experimental (n=5)	Data Collected
Week 1	UCF Marcus No Label	UCF Vince ED Label	<ul style="list-style-type: none"> a) Rating scale for the 5 students b) Data of performance c) 1 AAR question
Week 1	UTAH Marcus ED Label	UTAH Vince No Label	<ul style="list-style-type: none"> a) Rating scale for the 5 students b) Data of performance c) 1 AAR question
Week 1		Modules on ED and Hispanics males	Experimental Group Only
Week 2	UTAH Marcus No Label	UTAH Vince ED Label	<ul style="list-style-type: none"> a) Rating scale for the 5 students b) Data of performance c) 1 AAR question
Week 2	UCF Marcus ED Label	UCF Vince No Label	<ul style="list-style-type: none"> a) Rating scale for the 5 students b) Data of performance c) 1 AAR questions
Week 3		Modules on ED and Cultural Diversity	Control Group Only
Week 3	Post Study Questions and Modules on ED and Hispanics males		Collect written responses from post study questions

Instrumentation

Four instruments were used during the data collection phase of this study. As part of the Study ARC, each participant filled out a pre/post baseline survey related to bias. In addition, all participants took Implicit Association tests on race and disability. These two instruments showed how favorable each participant was to individuals from diverse backgrounds and individuals with disabilities. As part of the TLE TeachLive™ session ARC cycle, participants ranked students after being given a one-sentence description of the characteristics of that student, with a 3-point Likert scale. Timed videos were viewed using TeachAARs and defined behaviors were coded to answer the research questions. Frequency data were collected related to each dependent variable; positive comments (such as praise) and negative comments (such as put downs or identifying student deficits) were measured by both tone and actual words used with an interrater agreement at 90% or greater. Cultural statements were considered any statement related to ethnicity or race and directed at Marcus and Vince. Each session ended with participants answering one After Action Review (AAR) question. Upon completion of their final session, participants completed a post experience questionnaire as the culminating experience in the study ARC; and retook the baseline survey given the first

week. The answers collected were compiled and underwent qualitative content analysis to identify any emergent themes.

Data Collection Procedures

A sample of convenience of twelve randomly assigned PTs was utilized and voluntary participants completed a baseline survey and two implicit association tests related to disability and race online. All sessions were video recorded to ensure there was fidelity of treatment through each session with both the scripted exchanges with participants and the researcher and within the actual sessions, ensuring the student avatar behaviors remained consistent and occurred on the timed eight-minute schedule. The implicit association tests are validated tools that test for hidden biases (see appendix A). The baseline survey although created with strong expert validity was only used in the study to frame the conversation on bias and was not used to produce quantitative or qualitative data for analysis. Both the experimental and control groups received instruction with interactive scripted discussion on two Iris online modules. These modules were created by Vanderbilt University along with experts in the field and had construct validity but no pre/post assessment to measure effectiveness. The first module discussed cultural and linguistic differences and the second on managing behavior within their classrooms.

These modules were developed with strong expert validity and are housed virtually by Vanderbilt University. The experimental group viewed the modules and engaged in discussions after their second live session in the TLE TeachLivE™ Lab, while the control group benefited from the same discussion and modules at the end of the data collection period. Each participant had four experiences within the TLE TeachLivE™ Lab to determine if any statistically significant differences or relationships would result when the data were analyzed. The researcher looked at: a. the ED label and the frequency of PT/student avatar interactions; b. the exposure to online content; and c. the relationship participant bias measures had on student avatar rating scale scores and the frequency of PT/student avatar interaction. Cronbach's alpha coefficients of internal reliability were not calculated because only previously validated instruments were used in this study (Nunnally & Bernstein, 1994). Additionally, data collected through interviews, and AAR questionnaires were triangulated using multiple data points to reduce any negative effects resulting from flaws in the study design and researcher bias (Leech & Onwuegbuzie, 2007).

All participants experienced the same pre-determined behaviors during their virtual rehearsal experience with the

virtual students that had been identified as a Hispanic male with or without an Emotional Disturbance (ED) in the simulated environment as detailed in Table 2, no personality types were disclosed. The researcher trained the interactor assigned to the session to initiate specific behaviors at timed intervals to ensure the fidelity and consistency of each session. The researcher also instructed each participant using a scripted dialog as detailed in the protocol manual (See Appendix B) to ensure fidelity of treatment. Each participant interacted with the student avatars on four separate occasions. Avatars are digital representations of the virtual students (Bailenson et al., 2008) during each session one of the male Hispanic student avatars was identified with or without the ED label, see table 2. The only facet of information that changed during all live sessions was the information participants received related to the identity of student avatar with the label of ED. The researcher then analyzed interactions, based on the research questions.

Data Analysis

Following data collection, quantitative statistical analyses were completed to examine if any significant differences existed between the multiple dependent measures listed in the research questions. A multivariate analysis of

variance (MANOVA) was conducted to answer research questions one and two, and a discriminant analysis was completed to answer question three. Question 1 was analyzed to determine if any statistical difference existed in PT/student avatar interactions with the identified student avatar with or without the ED label. Question 2 was analyzed to determine if there was any statistical difference in PT/student avatar interactions after PT access to online modules on ED and cultural linguistic diversity. Finally, question 3 was analyzed to determine if any statistical relationship existed in participant bias measures and their interactions with the student avatars in the TLE TeachLive™ Lab. Participant observations were viewed and coded using the TeachAARs video coding software and data collected regarding the frequency of a. Positive comments, b. Negative comments, c. Proximity, and d. Cultural statements, underwent quantitative analysis. In addition, qualitative data collected were subjected to an in-depth qualitative analysis. Patterns and themes within the data were sorted and coded to address the research questions using content analysis. These themes were ranked based on the number of times they were observed from most to least (Johnson & LaMontagne, 1993).

Fidelity of Treatment

The researcher used multiple measures to ensure fidelity, (a) Training protocols were established that ensured all participants received the same experience in the TLE TeachLivE™; and (b) all video footage was observed 3 times by the researcher and two research assistants to ensure the researcher and interactors remained true to the script in both the live sessions and during the intervention phases.

Two additional trained observers also tagged the interactions to determine interrater reliability using the TeachAARs video coding software. The interrater was trained to follow the script when looking for fidelity and follow specific observation protocols to identify what positive, negative, and neutral behaviors look like within the simulated mixed-reality TLE TeachLivE™ Laboratory classroom. The recorded results were compared multiple times to each other in point-by-point analyses and a minimum of twenty-five percent of the recorded sessions had an eighty percent agreement or higher, thereby establishing interrater reliability.

Reliability

Reliability coefficients may range from 0 to 1. The higher the reliability coefficient for a set of scores, the more likely

individuals would be to obtain very similar scores if retested. Prior to initial data collection, all instruments and data collection processes were piloted to see where inter-rater reliability was greatest. Inter-rater reliability was used to decrease the amount of researcher bias and to control for inconsistencies within the research (Kazdin, 1982).

Validity

Previously validated instruments and questions were utilized for all aspects of this study. To determine how valid the participants saw the intervention as well as the use of the TLE TeachLivE™ system, member checking was used and all participants were asked to affirm or refute a summary statement derived from their AAR and recorded statements (Creswell, & Miller, 2000); all participants were in 100% agreement with the summary of their experiences as written. Additionally participants were invited to follow-up in a focus group session to discuss their experiences within the TLE TeachLivE™ Laboratory and the completion of the modules on cultural and linguistic difference and students labeled ED (Kazdin, 1982).

The overall purpose of the study was to record the interaction performance of PTs in a virtual environment when the PTs were told a student does or does not have a label of ED. In

addition, the influence of content modules on cultural aspects of teaching and that of potential recondite bias were examined to determine potential bias in PT practice. The tools used in this study were created and reviewed by experts; consequently construct validity for both the Iris Modules from Vanderbilt University and the Baseline Survey from the Understanding Prejudice webpage were established. The Implicit Association Tests administered also were created and reviewed by experts giving it construct validity, but also has, according to the Project Implicit webpage predictive validity and statistical conclusion validity. Overall, the intent of this study was to provide further information on the critical topic of secondary students with ED from CLD backgrounds, and to contribute to the validation of the potential benefits of using the TLE TeachLivE™ environment to enhance teacher practice.

CHAPTER FOUR: RESULTS

Introduction

This chapter provides findings related to the two primary research questions and a report of data on how bias scores correlate with participants' ratings of the virtual students and their interactions with the identified student. The findings first are presented from the quantitative data and then from the qualitative data in the AAR and post baseline survey. The overall purpose of this study was to examine the influence that educator bias has on interactions with virtual secondary male Hispanic students identified with and without Emotional Disturbances (ED). The research questions for the study were:

1. Within a simulated classroom environment do the identification and exchanging of the label emotionally disturbed between two virtual secondary Hispanic male students increase, decrease or maintain the PT's frequency of:

- a. Positive comments,
- b. Negative comments,
- c. Proximity,
- d. Cultural statements,
- e. or the content of AAR comments

2. Does providing and completing an instructional module on Cultural Linguistic Diversity and a module on Emotional Disturbances and classroom management influence a PT's frequency of:

a. Positive comments, b. Negative comments, c. Proximity, d. Cultural statements, e. or the content of AAR comments when interacting with adolescent Hispanic male students identified with and without emotional disturbances within a simulated classroom environment.

3. How does a PT's rating on bias measures relate towards performance on data in research questions 1 and 2 for culture and disability.

The researcher used multiple measures to evaluate the influence of bias on randomly assigned secondary PT interactions with two virtual adolescent male Hispanic students. Both quantitative and qualitative data were collected. The quantitative data gathered included a pre-test that allowed for participants to self-report bias, a Likert scale ranking of perceived virtual student performance, frequency counts of the dependent variables collected through video recordings and a post-test. Qualitative data were derived from AARs after each

session and a post workshop evaluation given to participants after exposure to the online module intervention.

This chapter has been organized into four distinct sections. The first section provides an analysis of the quantitative data on research questions one and two. Extrapolated quantitative data were also used to answer research question three, looking at the relationship between bias and the interactions of participants with virtual students in the TLE TeachLive™ Classroom. Secondly, the researcher speaks to the fidelity of treatment. Details delineating both reliability and validity follows. The chapter concludes with an analysis of the qualitative data from the participants' perceptions of their experience. The qualitative data were summarized and presented to participants for member checking.

Participant Demographics

A sample of convenience of twelve secondary pre-service education teachers enrolled in an exceptional education methods class at The University of Central Florida participated in this study, each participant was randomly assigned to either a control or experimental group. Figure 7 shows the breakdown of both race and gender.

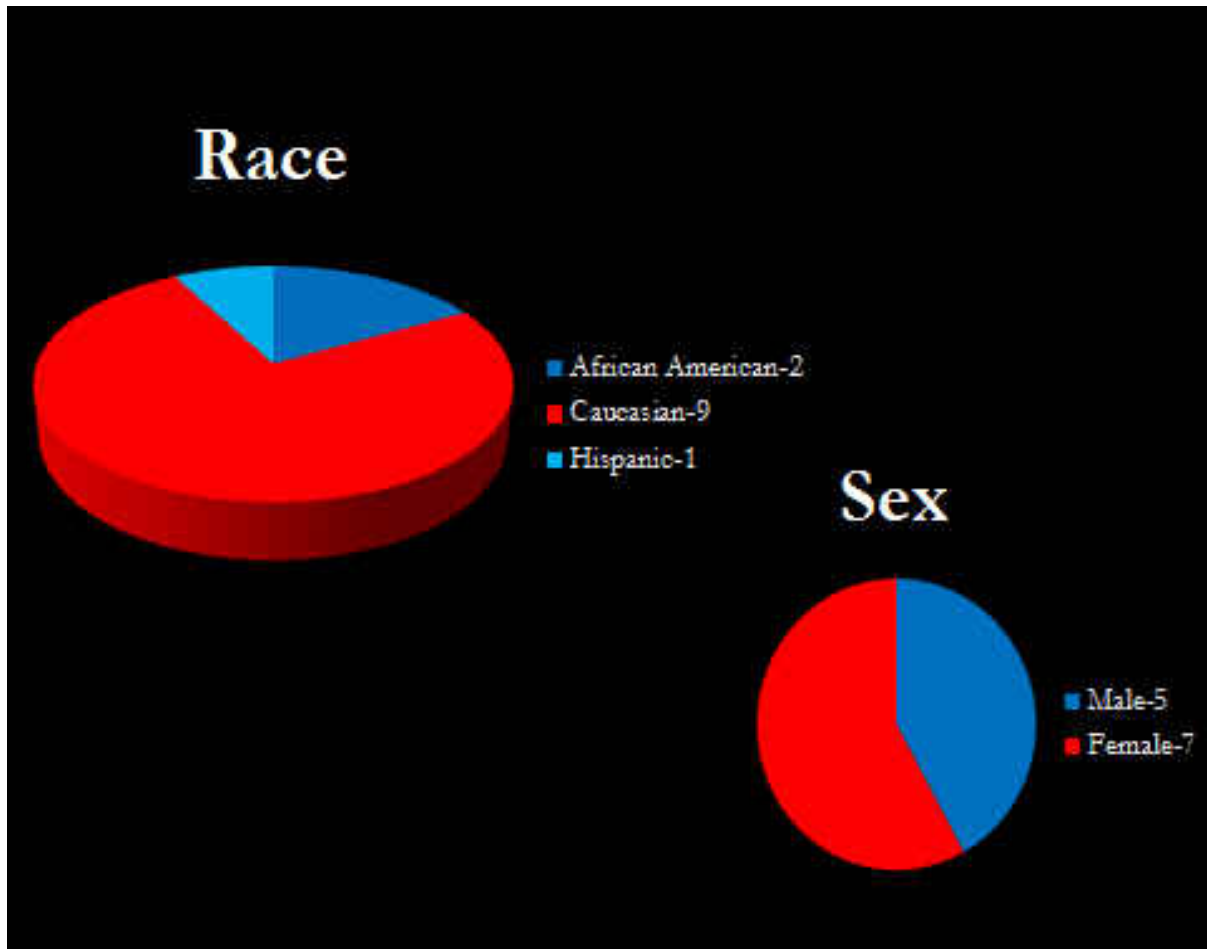


Figure 7 Participant Demographics

Quantitative Analysis

The researcher conducted a power analysis on the collected quantitative data that were extracted from the video recordings used to observe participant interactions with virtual student avatars within the TLE TeachLivE™ Lab. For each session, one alternating student, either Marcus or Vince was identified as having an emotional disturbance; however, behaviors for the alternating adolescent Hispanic male student avatar remained

consistent throughout all experiences. In research question two, each dependent variable was analyzed pre-post with the independent variable being time. Research question three, analyzes the correlation between the independent variables of bias and disability measures and the same four dependent variables.

To ensure fidelity of treatment two trained research assistants viewed all video recordings for the live sessions and the intervention documenting separate from the researcher both frequency of interactions and deviations from the scripted protocols. Agreement levels were set at 80% or higher. The observed videos were viewed and frequency counts for each dependent variable and scripted protocols were compiled then compared with two research assistants. Agreement between coded video for all parties was at 100% on all live session recordings, for frequency counts on the number of positive comments, negative comments, and use of proximity. Discrepancies in agreement occurred for multiple videos, due to a hard drive crash and audio distortions causing the agreement to fall to less than the 80%. Raw footage from days and/or sessions where discrepancies occurred was given to the research assistants and a 100% agreement between the researcher and the research assistants was established. When video recordings

where observed for protocol adherence there was once again 100% interrater agreement in what the observations, however adherence to the protocol script by the researcher during live sessions was 95% and for the intervention portions 90%, interactor adherence to the scripted protocol was at 100%. These percentages were calculated based on time in the TLE TeachLive™ Lab divided by the time off script.

Overall fidelity of treatment was established at or above 80% and 100% of the videos were viewed. For research questions one and two segment d, which looked for cultural statements, was eliminated from analysis; as no such statements were observed. Segment e in both questions are addressed in the qualitative portion of the analysis. Frequency counts for each listed dependent variable were tallied and inputted into SPSS for statistical analysis as detailed below.

Research Question One

A multivariate analysis of variance (MANOVA) was used to compare differences in PTs' actions when working with student avatars that were labeled with and without ED and between the other individual characteristics of the identified students on positive comments, negative comments, and proximity. Hotelling's Trace statistic is reported because the independent

variable has two factor levels (Larrabee, 1982). Sphericity is assumed since only two groups are being considered in the analysis.

The analyses compared the means, standard deviations, and F ratios of the MANOVA statistic which was utilized to reduce the probability of the emergence of Type I errors within the results.

Hotelling's Trace was not statistically significant for interactions between the ED label and Student Avatar ($F(1, 11) = 2.322, p=0.144$) or the main effect of ED Label ($F(1, 11) = .688, p=0.582$). However there was a statistically significant effect for Student Avatar, ($F(1, 11) = 4.838, p=0.028$).

Although there was no effect for ED label; participants gave more positive comments, negative comments, and used proximity more often with Marcus (avatar with Ed label) than with Vince (avatar without ED label). See Table 3 for means, standard deviations, and F ratios.

Table 3 Means, Standard Deviations, and F Ratios

Descriptive Statistics			
Session/Student	Mean	Std. Deviation	F Ratios
Pos Comm-M	1.250	1.225	Student F (1, 11) = 6.765, p=0.025
Pos Comm-V	0.458	0.833	
Neg Comm-M	0.625	1.245	Student F (1, 11) = 5.303, p=0.042
Neg Comm-V	0.167	0.381	
Prox-M	1.875	1.941	Student F (1, 11) = 16.844, p=0.002
Prox-V	0.708	0.751	

Note: Pos Comm=Positive Comments Neg Comm=Negative Comments
 Prox=Proximity M=Student Marcus V=Student Vince

Research Question Two

A MANOVA was used to compare differences between a) avatar students with and without the ED label, b) other individual characteristics of the identified students, and c) pre and posttest measures on positive comments, negative comments, and proximity. Hotelling's Trace statistic is reported because the independent variable has two factor levels (Larrabee, 1982). Sphericity is assumed since only two groups are being considered in the analysis.

The analyses compared the means, standard deviations, and F ratios of the MANOVA statistic which was utilized to reduce the probability of the emergence of Type I errors within the results.

Hotelling's Trace was not statistically significant for interactions between the ED label, Student Avatar, and Time ($F(1, 11) = 1.098, p=0.399$); ED label and Student Avatar ($F(1, 11) = 1.952, p=0.192$); ED label and Time ($F(1, 11) = 0.263, p=0.850$); and Student Avatar and Time ($F(1, 11) = 1.577, p=0.262$). Nor were there significant differences for main effects of ED Label ($F(1, 11) = 1.966, p=0.190$) or Time ($F(1, 11) = 0.754, p=0.547$). However there was a statistically significant effect for Student Avatar ($F(1, 11) = 4.037, p=0.045$).

Although there was no effect for positive comments, participants gave more negative comments and used proximity more often with Marcus (regardless of label) than with Vince. See Table 4 for means, standard deviations, and F ratios.

Table 4 Means, Standard Deviations, and F Ratios

Descriptive Statistics			
All Sessions/Student	Mean	Std. Deviation	F Ratios
Neg Comm M	.69	1.095	Student $F(1, 11) = 5.432, p=0.040$
Neg Comm V	.29	.651	
Prox M	1.85	1.611	Student $F(1, 11) = 11.070, p=0.007$
Prox V	.88	.841	

Note: Neg Comm=Negative Comments Prox=Proximity
M=Student Marcus V=Student Vince

Research Question Three

Multiple direct discriminant analyses were performed to determine if any statistically significant relationships between participant levels of potential implicit cultural and disability biases could be ascertained through their ranking of virtual student performance, use of positive comments, negative comments, and proximity within the TLE TeachLivE™ Lab. Potential cultural bias was statistically related to both Proximity ($F(24) = 0.001, p=0.073$) and Student Ranking ($F(24) = 0.001, p=0.041$); however, no relationship was established with either positive or negative comments. Potential disability bias showed significant relationships with both negative comments ($F(21) = 0.003, p=0.070$) and proximity ($F(24) = 0.000, p=0.011$); however, no relationship was established with either positive comments or Student Ranking. Alpha for this study was set at < 0.05 however; an a priori decision was made to report significance for the alpha values which resulted from the discriminant analysis that were a little higher because each of these values trended toward significance. Figures 4, 5, and 6 provide participant percentages of implicit cultural and disability biases and pre/post acknowledgement of having individual biases.

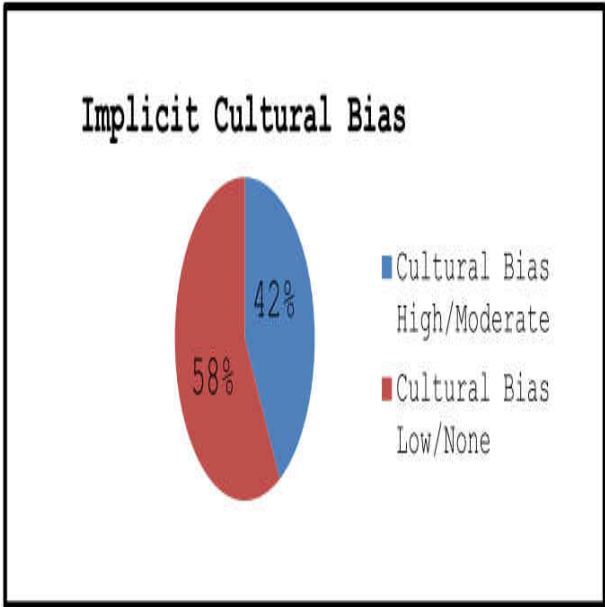


Figure 8 Implicit Cultural Bias

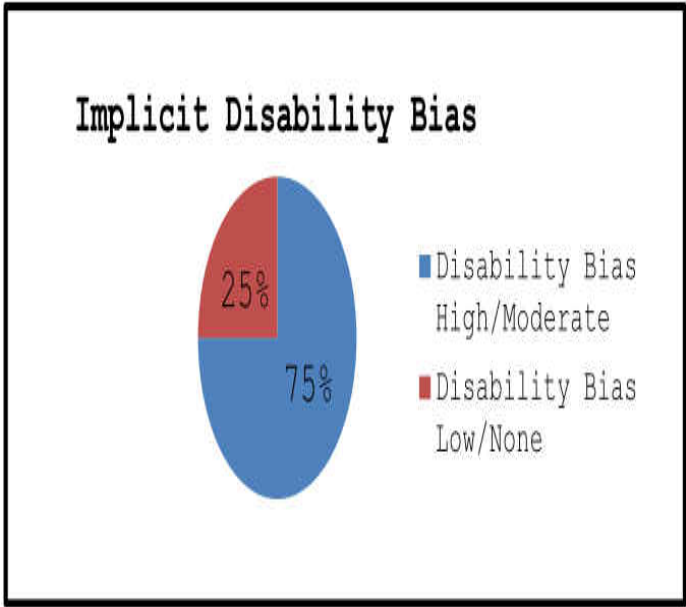


Figure 9 Implicit Disability Bias

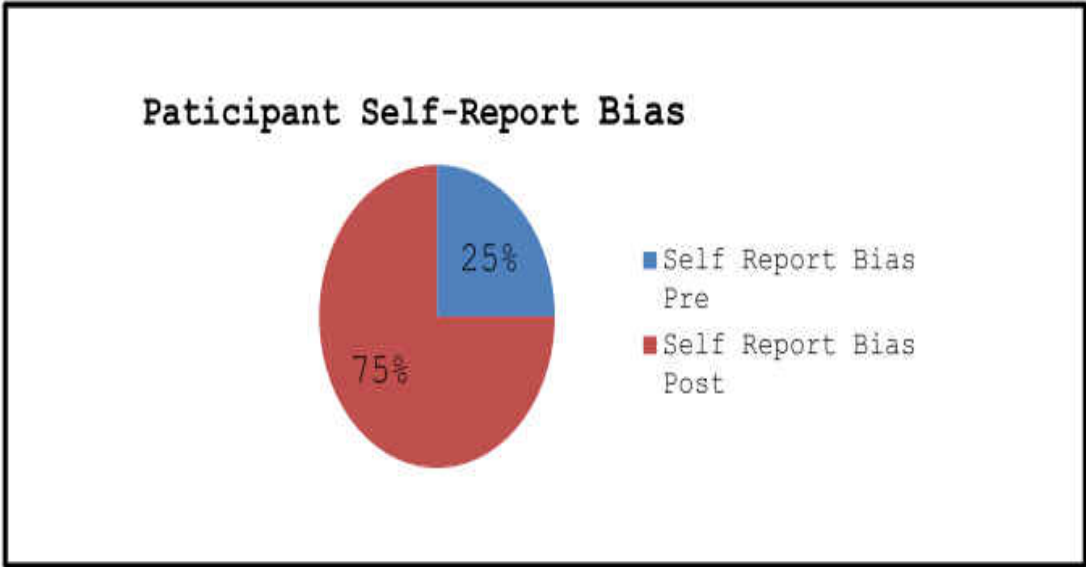


Figure 10 Participant Self-Reported Bias

Qualitative Analysis

Qualitative data were also collected by AAR during all sessions with participants in the TLE TeachLivE™ Lab. All sessions were video recorded, during both participant live lab experiences and during the intervention phase of this study. However, these data were not used for the qualitative analysis. Only written reflections from experimental participants AAR sessions were analyzed using grounded theory multiple iteration content analysis, (Corbin & Straus, 2008; Glaser, 1992; Strauss & Corbin, 1998) and the thematic analysis (Aronson, 1994) revealed the following five themes across participants: (a) increased exposure to the virtual students makes use in the lab easier, (b) behavior problems occur, (c) student engagement counteracts off task behaviors, (d) culture and behavior are important to learning, and (e) technology limits caused frustration. Within the multiple iteration process, the researcher and two research assistants first independently coded all AAR written statements. After the initial coding occurred, the researcher met with the research assistants and discussed the emerging themes. This process was repeated until no further themes could be identified. A final coding session was scheduled and the researcher and two assistants established 100% interrater reliability and consensus that the five themes that

resulted from the coding sessions could further be categorized into two distinct overarching themes: (1) use of the virtual environments; with themes a and e, condensing into the first and (2) learning in a virtual environment; with themes a, b, c, and d, combining to form the second. It should be noted for this research study a weightless control group was utilized, thereby those data were not a part of the qualitative analyses or triangulated data. It should also be noted however, both the control and experimental groups separately reported similar themes within their AAR comments and those themes fell within the same two main themes; of using the virtual environment and leaning in a virtual environment. Comments listed will clearly identify whether the participant quoted, was in the control (C) or experimental (E) group; with the control group not receiving the intervention until the end of the study.

Use of Virtual Environments

All 12 participants shared that with each interaction in the TLE TeachLivE™ Lab it was easier to engage with the virtual students than the previous visit, and that they felt more comfortable with each visit. Participant (C2) shared, "Each time I work in the lab it gets easier to talk to the kids, and I feel more confident about what I am doing." One participant (C3) with high levels of implicit biases shared, "It was easier

the second time around. I noticed that the profiles are very similar, even though it was a different class. The same two were the "problem" children." While participant (E1) shared, "The second class was harder than the first, and I felt like I ignored some of the students because I was paying too much attention to Marcus." Participant (E3) shared, "This second visit was much harder than the first"...while then stating on her third visit, "After participating in Teachlive two times this third visit is much better, I feel like the student are getting to know me and I them." It should be noted, as detailed in the methodology of this study, that only one virtual male Hispanic student was identified with ED, in each session and all behaviors and interactions occurred on a timed schedule and were both consistent throughout the four scheduled virtual rehearsal experiences. Participant (E2) told us that their, "...last lab experience was good. I feel the virtual kids are getting used to me, and I feel that I am getting a better understanding of the students individually. It has been a great learning experience..." All but three participants felt that their experience in the lab was beneficial. Participant (C2) shared, "I find it beneficial to move problem students up to the front of the classroom and have them be active in their learning. If Marcus was a student in my class I would have moved his seat up

front, in the lab I was unable to do this." While participant (C4) stated they, "...didn't like how I couldn't apply some classroom strategies like to move the students and such." Finally, participant (C1) shared, "It's hard to use some traditional methods of gaining and keeping student's attention such as standing next to them as this system does not register proximity to the teacher." All but this participant could see the benefit of the use of the lab to prepare teachers for the real classroom.

Participant Learning in a Virtual Environment

All participants found the virtual students to be "real", "interactive", and "engaging" with behaviors consistent with real secondary students. Participant (C5) indicated that they, "...liked the interaction to the virtual students. The entire classroom experience was incredibly realistic and actually compared with my internship experience." Participant (E5) also shared, "I like that the student responses are immediate and relative, creating a very life-like experience for the teacher"; and " Today behaviors escalated and I was able to get the class back on track, this experience is very helpful." All participants shared in their AARs that active student engagement resulted in a better-behaved class and that off-task behavior by students was inevitable in any classroom. Participant (C4)

shared, "I was a little frustrated with the students behavior more so this session, but as soon as I engaged Marcus and Vince in group work they calmed down a bit." While participant (C5) detailed through multiple sessions they "...had some behavioral issues that I tried to work around...order was restored and I didn't let it become too much of a distraction...I felt like there was some immediate progress made...I think I had a breakthrough with Marcus...". With participant (E3) sharing, "I like that you are put in real life scenarios of a classroom. The TeachLive lab is just as unpredictable as a real middle school classroom."

Additionally, all participants found the intervention and modules on cultural linguistic diversity and behavior management as important and valuable resources for beginning teachers. Participant (C2) communicated their take on the importance of culture saying, "It is important to care about your students and their culture for them to have success in your classroom." Participant (C6) and (C7) both indicate respectively that, "Linguistic Diversity and class structure are both important for student success"; and "Culture and classroom management both play big roles in student success." Participant (E2) sums it up by sharing, "It is important to know your students, their culture, their home lives, to better understand why they act the way they do. Once you better understand the student

individually, it is easier to help them do their best.” Overall participants were satisfied with their experience and learning in the TLE TeachLivE™ Lab.

A summary statement was developed from the AARs completed by each participant for member checking. Participants reported 100% agreement with the statements as written.

Fidelity of Treatment

. The researcher used multiple measures to ensure fidelity of treatment, training protocols were created for all facets of the study, all training materials and scripts can be found in appendix B. Interactors were trained two times and practiced with the researcher on specific behaviors and timing sequences they needed to follow. The researcher also followed a scripted protocol to ensure consistency in experience. All online interaction were done in the presence of the researcher and participants took multiple screens shots showing their results and progress on all activities.

The researcher deviated slightly from the script on a number of occasions during the intervention phases but remained on script 95% and 90% of the time. Protocol adherence during live sessions was at 100% for both interactors and researcher. Further fidelity of treatment was established by having multiple

research assistants who were not associated with the study view the recoded session with 100% agreement of the observed footage.

Reliability

Interrater reliability was used to decrease the amount of researcher bias and to control for inconsistencies within the research (Kazdin, 1982). Two additional trained observers also tagged the interactions to determine interrater reliability using the TeachAARs video coding software. The interraters were trained to follow the protocol script when looking for fidelity of treatment and also follow specific observation protocols to identify what positive, negative, and neutral behaviors look like within the simulated mixed-reality TLE TeachLivE™ Laboratory classroom. The recorded results were compared multiple times to each other in point-by-point analyses, all of the recorded sessions were viewed and had an 80% percent agreement or higher, thereby establishing interrater reliability (Slavin, 2007). Member checking also showed to have 100% consensus further showing the results reliable.

Validity

Previously validated instruments and questions were utilized for all aspects of this study. The Implicit Association Tests, IRIS modules, and the baseline survey were

developed in collaboration with nationally recognized experts, showing them to be validated tools, which go through an extensive review process and are field-tested by additional experts. This construct validity was strengthened through member checking. To determine how valid the participants saw the intervention as well as the use of the TLE TeachLive™ system, member checking was used. All participants were asked to affirm or refute a summary statement derived from their AAR and recorded statements (Creswell, & Miller, 2000); each participants agreed at 100% with the summary of their experiences as written, demonstrating internal validity of the study. Finally, participants were invited to follow-up in a focus group session to discuss their experiences within the TLE TeachLive™ Laboratory and the completion of the modules on cultural and linguistic difference and students labeled ED (Kazdin, 1982). However, no one showed up to the focus group session.

The overall purpose of the study was to determine the interaction performance of PTs in a virtual environment when the PTs were told a student did or did not have a label of ED. In addition, the influence of content modules on cultural and behavioral aspects of teaching and that of potential recodite bias were examined to determine potential in teacher practice.

Overall, the intent of this study was to provide further information on the critical topic of secondary students with ED from CLD backgrounds, and to contribute to the validation of the potential benefits of using the TLE TeachLivE™ environment to enhance teacher practice.

Summary of Analysis

The reported data in this chapter provides a non-generalizable view on how PT bias is significant in interactions with students in a virtual secondary setting. Factorial MANOVAs and Discriminant analyses revealed statistically significant interactions and relationships between participant level of bias and the identified virtual students. These exchanges were more prevalent with the virtual student Marcus as identified in Tables 3 and 4, and revealed by AAR statements made by both experimental and control participants. These increased variances in engagement with Marcus indicate that student characteristics and difference are an important dynamic of student/teacher interactions. Qualitative analyses revealed all participants agreed that the intervention and modules on cultural linguistic diversity and behavior management are important for beginning teachers. Additionally, all participants except one shared they felt that the TLE TeachLivE™ Lab is a useful tool in teacher preparation. These analyses

revealed that student avatar personality emerged as the catalyst to the increased interactions that occurred within the TLE TeachLivE™ Lab. The data did not reveal any significant interactions for either Hispanics or ED. Finally, if a true pre/post experimental control group study had been used instead of using a weightless control, bias which was the focus of this research may have emerged.

CHAPTER FIVE:

DISCUSSION

The review of literature showed a dearth of research looking at how implicit biases influence interactions with students in secondary classrooms. As detailed in Chapter Two the literature did reveal however, that educator bias does lead to academic and social isolation resulting from lower academic expectations, which directly cause decreased levels of achievement and advancement among many minority students. This chapter provides a direct link between the limited research on this topic to the current findings of this study. Also, part of the conversation in this chapter is framed by the researcher's personal experiences as a Hispanic male and minority student exposed to cultural and systemic biases. These personal reflections are interwoven into the implications for further research.

The chapter opens with a brief summary of the purpose of the research study, followed by a summary of the outcomes. Associations and inferences to established research are then reconnoitered with a culminating discourse on how the findings contribute to the literature. The chapter closes with a

discussion on the limitations of the study and implications for future research.

Purpose of the Study

This study examined the influence of pre-service teacher (PT) biases, which were defined as a personal preference or an inclination that inhibit impartial judgment (Babad et al., 1982; Wayman, 2002); on the interactions of PT participants with virtual secondary Hispanic male students identified with ED. The research specifically looked at three primary research questions from a quantitative perspective and a final question focusing on PTs' perception of the student avatars' performance in the environment through a numerical rating. The quantitative analyses were used by the researcher to examine a) the relationship of PT's bias scores, b) how PT's rated the virtual student avatars behavior prior to each live virtual rehearsal experience and c) the PT's interactions with the identified student avatars within the simulated mixed-reality teaching environment. The research questions were:

1. Within a simulated classroom environment do the identification and exchanging of the label emotionally disturbed between two virtual secondary Hispanic male students increase, decrease or maintain the PT's frequency of: a. Positive

comments, b. Negative comments, c. Proximity, d. Cultural statements, e. or the content of AAR comments

2. Does providing and completing an instructional module on Cultural Linguistic Diversity and a module on Emotional Disturbances and classroom management influence a PT's frequency of: a. Positive comments, b. Negative comments, c. Proximity, d. Cultural statements, e. or the content of AAR comments; when interacting with adolescent Hispanic male students identified with and without emotional disturbances within a simulated classroom environment.

3. How does a PT's rating on bias measures relate towards performance on data in research questions 1 and 2 for culture and disability.

The researcher used multiple quantitative and qualitative statistical procedures to evaluate the potential influence of bias on twelve volunteer secondary PTs' interactions with two virtual male secondary Hispanic students. Each voluntary participant was randomly assigned into either a control or experimental group. The significant results derived from the quantitative MANOVA analysis were enhanced by the triangulated experimental group qualitative data analysis (Leech, & Onwuegbuzie, 2007), and through the qualitative statements

Qualitative analysis revealed two central themes: a. the use of virtual environments, and b. the learning that occurred for each participant within the virtual environment. These findings were further supported in that all 12 PTs shared that they were able to learn in the virtual environment and benefited from the intervention provided by the researcher, thereby demonstrating social validity within the study (Foster, & Mash, 1999; Kazdin, 1977).

Summary of Findings

Multivariate analyses of variances were used to compare differences between interactions of PTs and students with and without the ED label. Frequency data were collected by viewing recorded videos of each session; participant interactions with the student avatars were observed and tagged, using the TeachAARs software. Thus, each time the researcher witnessed a positive comment, negative comment, or proximity behavior from the PT in relation to each individual avatar the video footage was marked with an identified marker indicating which dependent variable had occurred. These data were time stamped and made available for export for statistical analysis. As previously shared in chapter 4, no cultural statements were observed consequently that item was removed from any further analysis. These data were then used to compare differences between, a)

student avatars with and without the ED label, and b) frequency counts on observed positive comments, negative comments, and proximity for each individual avatar.

Quantitative analysis of question one revealed no statistically significant interactions between the ED label and Student Avatar. However, a statistically significant effect for Student Avatar was noted, which means specific personality characteristics of that student avatar, caused an increased amount of engagement with that character (both positive and negative). Although there was no effect for ED label, participants were observed to give more positive comments, negative comments, and use proximity more often with Marcus than they did with Vince. Marcus was profiled as an aggressive independent personality archetype, while Vince was profiled as an aggressive dependent personality type (Driekurs, 1958, 1968; Long, 1985, 1989). These increased levels of engagement overtly demonstrate a stark difference in teachers' interactions between Marcus who has an aggressive independent archetype and, Vince who has a dependent archetype. The research resulted in increased interactions within the TLE TeachLivE™ Lab with the student who was aggressive independent (see Table 3). These increased interactions with the aggressive personality in school-aged children have been documented previously in a

longitudinal study by Ensminger and Slusarcick (1992), where they found higher drop-out rates and increased school isolation for minority male students who were identified as aggressive in the first grade. The findings within the current research study append to the findings of the authors identified in table 1, and added the additional variable of student characteristics not measured in this study, when considering the complex topic of recondite bias. Everyone carries biases, unknown and known. A clear understanding of a person's own biases, including biases towards specific personalities, allows for individuals to have true and open relationships with those around them. This acknowledgement of bias is absolutely paramount within teacher preparation whether it be preservice or inservice teachers. The academic aspirations and lives of children are too high a price when individual and systemic biases are not identified and curtailed within teacher preparation settings at all levels.

Analysis of question two showed no statistically significant interactions between the ED label, Student, and Time; ED label and Student; ED label and Time; or Student and Time. Nor were there significant differences for main effect of ED Label; or time. However, a statistically significant effect for Student Avatar was identified; and participants again gave more attention to Marcus, aggressive independent, in both the

number of negative comments and the use of proximity. This increased level of interactions is detailed in Tables 3 and 4, and these findings have implications beyond the virtual rehearsal environment, reaching into the core of academia and the academic verve of "real" students, in "real" classrooms. Learning, practicing, receiving coaching, and reflecting on the level of positive and negative interaction across all students, including students with various personality types is something that may be hard to do in a "real" classrooms. However, this level of debriefing and practice of skills is needed to be a successful teacher and can occur in a safe virtual environment, without putting children at risk. With further research and additional funding, perhaps practice in virtual environments and further understanding of how to help teachers acknowledge potential bias and the interaction dynamics related to the intersection of student versus teacher personality, will happen sooner rather than later.

After an extensive review of the research literature (see table 1 chapter 2) on articles containing the terms bias, Hispanic males, ED and secondary settings, two studies Reschly and Christenson (2006), and Nesman (2007) shared that when students feel uncared for, picked on, or have a negative/adversarial relationships with their teachers they

suffer academically and many times drop out. Thereby, the intensification in the frequency of negative interactions within the TLE TeachLivE™ Lab, which were observed more with Marcus rather than with Vince, again shows, that the greater number of interactions were tied to differences within the individual characteristics of the student avatars. These results exposed some PT behaviors that could have negative consequences in the brick and mortar classroom.

Quantitative data were analyzed using direct discriminant analyses to establish relationships between PT ordinal rank scores of identifying levels of implicit cultural and disability biases and their ranking of virtual student performance, use of positive comments, negative comments, and proximity within the TLE TeachLivE™ Lab. Results of the discriminant analyses revealed that PTs cultural bias showed significant relationships with both Proximity and Student Ranking, while PTs disability bias showed significant relationships with both negative comments and proximity, in the simulated classroom laboratory.

Within the TLE TeachLivE™ Lab, abstract concepts of teaching were focused into situational timed scenarios built on the premise that the lab is "real" enough to be contextually meaningful. Consequently, the outcomes of this research study

although derived through virtual rehearsal experiences, resonated as true and learned experiences for PTs and both the recital and skill enhancement exercises allowed participants to learn in the virtual environment. Although identified as a limitation these skills, because they were learned in a meaningful manner, should transfer into the actual classroom (Boe, Shin, & Cook, 2007). The PT A2 who was part of the control group shared she felt more at ease with the students with each additional experience. While PT B2 an experimental participant shared in her first session that student engagement and interaction was exactly like the "real" classroom; in her final session the same participant indicated that she was really comfortable with the virtual students and had gotten to know them individually. To further cement how contextually meaningful and "real" the virtual rehearsal experiences were; another control participant explained how she had a breakthrough experience with Marcus and had learned how to reengage students, even after committing an egregious mistake and disrespecting a student. Qualitative data both supported and strengthened the quantitatively significant results and relationships discussed.

Implications and Connections to Current Research

The outcomes of this study have a direct reflection on the changing nature of today's classroom and the continued

predicament in this country is that the teaching force continues to be female and white dominant (Picower, 2009). An important factor in America today is the "browning" of our country, this change in the demographic make-up of our country results specifically from the growth of the Hispanic population which now exceeds 52 million and is the largest minority group in the country (U.S. Census, 2012). A renowned demographer Dr. James Johnson shared in the summer of 2009 that the only demographic group that is reproducing itself, are Hispanics, yet the teaching force does not yet reflect this demographic change. The U.S. Census (2012) further reports that the current number of cultural linguistic diverse children age one and under has surpassed that of the once dominant majority; additionally sharing that the birth rates show that Hispanics account for the majority of all population growth. Although traditionally underserved in programs supporting students with ED, Hispanics are being identified with ED at higher rates than any other demographic group (IDEA data.org) and are being placed into these programs by a culture that does not reflect the same demographics.

Another disconcerting fact that formed the primus for this study is that Hispanics continue to have the lowest educational attainment than any other demographic group. Within educational

settings, the influx of minority students, coupled with the obvious demographic shift of the nation should be an awakening for a need to ensure teachers are aware of potential biases and on the relationship of student personality and characteristics with their own; especially when the majority of the teaching force is white and female, who have very little in common with the students they teach (McKown and Weinstein, 2008). Questions should be posed as a country, as to what is being done to change the status quo, both in teaching and in practice. Innovative vision is needed and the utilization of an environment requiring rigorous tools like the TLE TeachLivE™ Lab could allow teacher educators to prepare student teachers on pedagogically proven methods that can make participants aware of their potential biases and on how student characteristics interplay within all aspects of engagement, within the "real" classroom.

Consequently, PTs are allowed to hone their practice prior to mastering their craft on "real" students. Teacher education programs need to focus on the engagement, enrichment, and assurance that student learning and academic achievement of all students despite their race, culture, class, gender or any other potential area of bias, are the foundation for new teachers entering the field. This type of preparation on potential bias be it cultural or related to personality type of the student

must become the norm in colleges of education, not the exception. Making teachers aware of potential bias in virtual environments could produce an educational workforce in this nation that supports all students being educated to the fullest extent possible.

To move forward towards the strongest preparation possible, grounding the current in past literature is essential. Data consensuses within the empirical studies identified in table 1 of Chapter 2 were quite varied. However, findings from this study supported and at times extended the current research on teacher bias for students who are Hispanic and specifically male students with ED. A summary of this support and extension across key articles is provided.

For example, Tobias et al. (1982) revealed differences in the referral rates of minority students, most notably when the student being referred was of another race. Although the current study did not investigate special education referral rates, a significant finding was that biases clearly influenced interactions that occurred within the TLE TeachLive™ Lab. Furthermore, the current research appends to Tobias et al. study by demonstrating that student personality type produces significant interaction effects within the student and teacher

classroom dynamic. This finding is one that should be further explored related to potential implications for special education referrals (e.g., is a certain personality type of males being referred at higher rates for testing).

The potential biases in referral rates for special education is further exemplified in a meta-analysis conducted by Hosp and Reschly (2003). These authors found that minority students were identified at higher rates for special education than their non-minority peers; while Skiba et al., (2006) shared that this identification is multifaceted and complex. Foci of the current research study were not on referrals but biases and obvious interaction differences were clearly evident. Data were unable to confirm that ethnicity played a role in these interactions; however, it was quite clear that personality type and being a male produced an observable and noticeable interplay within the virtual lab. The PT in the study further shared their thoughts related to bias where many entered the lab believing they were free of bias and left the study realizing potential bias in their thinking. An experimental participant shared, "I know now that bias effects the way we see people...and sometimes we may not even realize we are biased." When challenging bias at its core these PTs realized that the interplay of bias leads the field to question the

multicollinearity between specific personality types, ethnicity, and being male. This study highlighted a possible first step in moving the conversation on bias forward. At the beginning of the study, only 25% of participants self-reported having or being aware of their biases, by the end that number had increased to 75%. This trend of PT reporting they are either color blind or do not see culture or race as a concern, has been reported on by various authors. Sleeter (2001) shares that non-minority student and their non-minority professors use colorblindness in the racial context to deflect issues of culture and many times marginalize minority PTs in their programs and silence their voices. Within their work Trent, Kea, and Oh (2008) discuss how systemic invisibility of issues revolving around race and culture perpetuate inaction within both general and special teacher education preparation programs. Within the current study, although 25% still reported they were unbiased, most participants reported within their AARs they were aware that they had individual biases and understood that if ignored those biases could impact their relationship with students in their classrooms.

As with Coutinho and Oswald (2005) who identified disproportionate male to female identification for SED; this study confirmed that the more aggressive male student avatar

received greater and more negative interactions than any of his peers. This notable difference occurred across all days and with all participants. These negative interactions could lead to classroom and school engagements that are highly adversarial and result in escalating disciplinary actions potentially leading to exclusion from the educational environment (Ensminger, & Slusarcick, 1992). Two control participants both stated they wished they could have done more with Marcus, possibly even having him removed from the classroom; as a result Marcus would have become an excluded student. Although Marcus was just an avatar in this case, these teachers' perceptions represent the potential for another statistic of a male being led down the path of being expelled or labeled ED. The exclusion of a student, like Marcus, is a critical factor to consider in teacher education for the preparation of new teachers. Both Reschly and Christenson (2006) support the need to address this issue with preservice teachers along with research by Achilles et al. (2007) that clearly show exclusion of students often times leads to students dropping out. Another control participant went as far as to say during her second virtual rehearsal experience; "those two trouble makers would be removed from my class, it is obvious they can not learn well with the others." That one statement supported both what

Achilles and colleagues (2007) reported in their study that students identified with ED are excluded from school more often than their peers; and what Crawford (2007) shared, that a teacher's underlying assumptions (biases) many times are used as a justification, to exclude students from learning.

Conversations on the correlation of TLE TeachLivE™ to practice within the actual classroom are important to consider. Within the TLE TeachLivE™ Lab no "real" child could be harmed, such is not the case in the brick and mortar classroom. One can question does this individual have the needed tools to be a great teacher and if not can the TLE TeachLivE™ Lab provide the necessary remediation? Of course, further inquiry is needed to specifically measure the influence of personality and student characteristics and PTs' interactions within the lab, as well as both its efficacy as a training tool and the actual transfer of skills learned, into the "real" classroom. Importance must be placed on helping and training teachers to develop a classroom environment that builds towards a bright and productive future for all students. If a preservice teacher would want to exclude a virtual student then is he or she ready for an environment of a "real" classroom where a "real" student not an avatar might be excluded or encouraged to possibly even drop out of school. These new teachers will potentially create a classroom as sated

by Nesman (2007) with what could be plagued as having low expectations, discriminatory discipline, lacking engagement and motivation, and lacking cultural linguistic adaptations that promote learning. Classrooms where teachers push students out, instead of giving them hope and something to strive for, is what has should be prevented before a teacher enters the teaching force. McHatton, Shaunessy, Hughes, Brice, and Ratliff, (2007) relay that Hispanic participants in their study shared that they were exposed to discrimination and biased treatment, and understood that Hispanic students were not supposed to do well in school. Although the experience in TLE TeachLivE™ did not show bias towards students with a label of ED or Hispanic, aggressive males from a different culture is an area in need of further research. With the underrepresentation of Latino's and the overrepresentation of Black Males being labeled ED (Zhang & Katsiyannis, 2002), the issue may lie in personality type and not just culture; an answer to be obtained from further research within virtual and real classrooms.

The virtual rehearsal experience offered by the TLE TeachLivE™ Lab potentially offers a tool in teacher preparation, and professional development opportunities that could enhance programs, decrease biased thinking about minority students and open up avenues for further cross-cultural training

opportunities across professions (Lopez, Hughes, Mapes, & Dieker, 2012). The cultural divide between teachers and students is clearly noted in the literature (Artiles et al., 2005, 2010; DiMaggio, & Garip, 2011; Harry et al., 2009; Klingner & Artiles, 2003) to lead to disparities in educational attainment. In this study, all but one participant discussed the benefits of using the virtual environment to enhance their preparation to work with "real" children. Any change in bias and practice before these teachers enter the "real" classroom is time well spent for teachers and critical for student success.

Limitations

Despite positive findings related to personality type, this research was not without limitations. The following paragraphs will discuss all the limitations in greater detail. The researcher experienced the following limitations; a small sample size, participant attrition, technical equipment problems, time/scheduling constraints, and personnel issues which may have affected participant perceptions of their live sessions and their overall satisfaction with all facets of the study. Participant dialogue, together with student avatar skin tones and the use of the same student avatar names throughout the entire study were also limitations. Lastly, interactor dialect, which was not authentic to the Hispanic adolescent males, along

with the use of self reporting within the instruments used within the study, could also have impacted the research findings.

It should also be noted that when conducting human subject research, the researcher can not control for participant background and experience. Although using PTs, and having an established selection protocol, each individual had differing backgrounds, work and life experiences that could not be controlled for within the research. Finally, because of the lack of research of using simulated mixed-reality environments within teacher preparation programs the training tools used in this study, that have been previously proven effective in live classrooms, may not have the same outcome within the TLE TeachLivE™ Laboratory with simulated student avatars and the learned skills in the virtual environment have not yet been proven to transfer into the "real" classroom. Generalizations from the analyses performed, cannot go any further than the immediate participants of the study.

The small sample size utilized for this study was further exacerbated by the attrition of four participants, this attrition occurred in two waves initially two participants dropped from the study dropping the sample size to 14

participants then on day one of the study two additional participants decided not to participate leaving only 12 participants. Prior to commencing the research study a power analysis was conducted with a statistical consultant, and it was determined that an N of 60 participants was needed in order to run a robust MANOVA analysis. After the collection of all data although the N was 12 the number of dependent to independent interactions allowed the researcher to run a MANOVA, but the small sample size limited the information that could be extracted for further analyses.

Another major limitation in the study was the use of older computer hardware. The computers used for the simulation crashed multiple times during the sessions and constraints on both participant availability coupled with the need to have a human in the loop to run the simulator could have caused undue stress to participants who many times were left waiting for extended periods of time and at times had to reschedule an appointment to go into the lab. These extended wait times where participants were waiting for their turn could have resulted in conversations about the research that was only supposed to occur during the focus group session, which was scheduled in early December and which no participants chose to attend. The skin tone of the student avatars may have also had limiting effects

on the results of the study. Even though the skin tones changed, the avatars and the ED label was exchanged during each visit, yet the names and the physical characteristics of the student avatars were not altered possibly causing an exposure bias for the individual avatar and the participants of this study.

The interactors for this study were non-Hispanic and did not have any skill/knowledge base to speak as a typical Hispanic adolescent. This lack of dialectal cadence and vernacular limited the reality of believing the conversations were actually occurring between a Hispanic student and their teacher, thereby reducing the "realness" of the timed session.

Finally the self-reporting aspect within the instruments and the AAR questions leads to the limitation suggested by Ensminger and Slusarcick, (1992) who indicate that PT learn to discount race and bias which, consequently limits their desire and comfort of self-reporting thereby decreasing the probability that in areas where PTs were asked to self-report that the researcher received a true measure based solely on those data. Data analyses however did provide a few areas where further inquiry would be beneficial.

Future Research and Conclusion

The use of the MANOVA analysis controlled for Type I error however, the statistical analysis and the small sample size did not allow the researcher to identify or tease out any specific data related to the statistically significant results. However the results were tied together with the qualitative comments and some clear themes emerged.

Further inquiry is needed to delve into all facets of statistically significant relationships and differences that resulted from this study. Additionally the two themes that emerged from the content analysis of the AAR statements; the use of and participant learning within the virtual environment require further inquiry as well.

Qualitative data analysis revealed that with increased exposure participants were more at ease with use of the virtual environment. In addition, all participants found the virtual students to be "interactive" and "engaging" with behaviors consistent with "real" secondary students. Participants also shared that active student engagement resulted in a better behaved class; and found the intervention and modules on cultural linguistic diversity and behavior management as important and valuable resources for all teachers.

Based on the results of this study further inquiry is also warranted looking at the unwrapping of the student avatars; sharing with participants details about the student avatars' family and background allowing for a richer and hopefully further engaging conversation by participants around the whole student. An additional layer that could be tied into the unwrapping of the student avatars is including specific information on the student's archetyped personality. Student avatar characteristics were significant within this study and further investigation into how those characteristics influences interactions between students and teachers is warranted. Attached to individual student characteristics are teacher characteristics; an investigation into the intersection of classroom interactions between both teachers and students, measuring what role personality plays within those interactions would further append to the literature. Finally, the use of the AAR within educational research and practice needs further inquiry. Without reflection or a guided purposeful discourse and evaluation of an activity we are unable to determine whether or not the course of action taken was correct. The AAR which is a tested tool used within military settings may prove to be just as useful within educational setting.

In closing, as a Hispanic male, and the first in my family to attend college; my experiences have been similar in many respects, to participants and subjects within several empirical studies that were discussed from the literature and tools used to address bias within this study. I have been exposed to numerous teachers and professors who have told me to just dropout and walk away from my education. Some went as far as forcing me to withdraw or receive a failing grade, but I refused to quit. These experiences are not unique to me and are perpetual and cyclic in nature. Disparate opportunity, disproportionate representation, attacks on civil liberties guised as immigration reform, and potential teacher bias as discussed by Crawford (2007) with teachers blaming their students for their own deep-rooted biases and bigotry; are challenges Hispanic students face daily. So, I end with one question; what can I do today so that every child has the same opportunity to learn, as did I, tomorrow?

APPENDIX A: INSTRUMENTATION

<http://www.understandingprejudice.org/>

Figure 11 Understanding Prejudice webpage

Project Implicit®
Featured Task

Try a Study
Take a Demo Test
Background
Tech Support
The Scientists
Project Implicit

IAT Home

It is well known that people don't always 'speak their minds', and it is suspected that people don't always 'know their minds'. Understanding such divergences is important to scientific psychology.

This web site presents a method that demonstrates the conscious-unconscious divergences much more convincingly than has been possible with previous methods. This new method is called the Implicit Association Test, or IAT for short.

In addition, this site contains various related information. The value of this information may be greatest if you try at least one test first...

[Go to the Demonstration Tests.](#)

Or, go directly to the featured task: [Featured Task.](#)

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Try a Study
Take a Demo Test
Background
Tech Support
The Scientists
Project Implicit

Preliminary Information

Whichever IAT you do, we will ask you (optionally) to report your attitudes toward or beliefs about these topics, and provide some general information about yourself. These demonstrations should be more valuable if you have also tried to describe your self-understanding of the characteristic that the IAT is designed to measure. Also, we would like to compare possible differences among groups in their IAT performance and opinions, at least among those who decide to participate.

Data exchanged with this site are protected by SSL encryption, and no personally identifying information is collected. IP addresses are routinely recorded, but are completely confidential.

Important disclaimer: In reporting to you results of any IAT test that you take, we will mention possible interpretations that have a basis in research done (at the University of Washington, University of Virginia, Harvard University, and Yale University) with these tests. However, these Universities, as well as the individual researchers who have contributed to this site, make no claim for the validity of these suggested interpretations. If you are unprepared to encounter interpretations that you might find objectionable, please do not proceed further. You may prefer to examine [general information about the IAT](#) before deciding whether or not to proceed.

I am aware of the possibility of encountering interpretations of my IAT test performance with which I may not agree. Knowing this, [I wish to proceed](#)

[Project Implicit Services](#)
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Figure 12 Implicit Association Test

You have opted to complete the Abled-Disabled IAT.

You will complete three tasks: two brief questionnaires and an IAT in which you will sort words and pictures into categories as quickly as possible. You should be able to complete the tasks in less than 10 minutes total. When you finish, you will receive your results as well as more information about the test and the performance of others.

In the next task, you will be presented with a set of words or images to classify into groups. This task requires that you classify items as quickly as you can while making as few mistakes as possible. Going too slow or making too many mistakes will result in an uninterpretable score. This part of the study will take about 5 minutes. The following is a list of category labels and the items that belong to each of those categories.

Category	Items
Good	Joy, Love, Peace, Wonderful, Pleasure, Excellent
Bad	Evil, Angry, Terrible, Rotten, Nasty, Bomb
Disabled Persons	Images and symbols associated with Disabled Persons
Abled Persons	Images and symbols associated with Abled Persons

Keep in mind

- Keep your index fingers on the 'e' and 'j' keys to enable rapid response.
- Two labels at the top will tell you which words or images go with each key.
- Each word or image has a correct classification. Most of these are easy.
- The test gives no results if you go slow -- Please try to go as fast as possible.
- Expect to make a few mistakes because of going fast. That's OK.
- For best results, avoid distractions and stay focused.

Figure 13 First screens of online IAT Disability

You have opted to complete the African American - European American IAT.

You will complete three tasks: two brief questionnaires and an IAT in which you will sort words and pictures into categories as quickly as possible. You should be able to complete the tasks in less than 10 minutes total. When you finish, you will receive your results as well as more information about the test and the performance of others.

In the next task, you will be presented with a set of words or images to classify into groups. This task requires that you classify items as quickly as you can while making as few mistakes as possible. Going too slow or making too many mistakes will result in an uninterpretable score. This part of the study will take about 5 minutes. The following is a list of category labels and the items that belong to each of those categories.

Category	Items
Good	Joy, Love, Peace, Wonderful, Pleasure, Glorious, Laughter, Happy
Bad	Agony, Terrible, Horrible, Nasty, Evil, Awful, Failure, Hurt
African American	faces of African American people
European American	faces of European American people

Keep in mind

- Keep your index fingers on the 'e' and 'l' keys to enable rapid response.
- Two labels at the top will tell you which words or images go with each key.
- Each word or image has a correct classification. Most of these are easy.
- The test gives no results if you go slow -- Please try to go as fast as possible.
- Expect to make a few mistakes because of going fast. That's OK.
- For best results, avoid distractions and stay focused.

Figure 14 First couple of screens of online IAT Race

<http://iris.peabody.vanderbilt.edu/resources.html>

Figure 15 Iris Modules Webpage

APPENDIX B: STUDY PROTOCOLS

Study Protocols

Examining Potential Teacher Bias of Hispanic Males with Emotional Disturbances in Virtual Settings

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Before the study

Prior to starting the study, all classes need to be researched to see which professors will have students on campus. Participants will be chosen from current exceptional education classes. Pre service teachers will be identified with minimal to no experience in the classroom. All participants will be actively enrolled. This research is looking at secondary students, so it is preferred that participants have a secondary focus.

For this research study, five classes were identified as having possible participants upon speaking with each of the professors, it was determined that the Monday night class was for secondary education teachers, thereby this class was utilized for the study. The researcher had multiple meetings for the professor of this course to determine the best possible compromise to recruit students while not interrupting student learning or class participation. The professor agreed to allow the researcher to recruit students from their class and a beneficial alternative was made available to the students for participation in this study.

Interactor Training

Interactor was given training regarding expected interactions and level of engagement prior to participants engaging in live sessions. The researcher met with the interactors and discussed section objectives, expectations, and gave interactors only information pertinent to their engagement to the participants. Interactors were instructed to engage in specific behaviors as both Marcus and Vince as prescribed by their archetypes and with specific misbehaviors as identified by the researcher; the interactors initiated the varying levels of engagement prescribed times. The times will be maintained consistent by using a beep tape that only the interactors could hear. At each beep, the interactors entered into a timed behavior loop that culminated as detailed in the steps below with both Marcus and Vince becoming compliant.

Interactors went through several detailed practice sessions with the researcher to ensure all aspects of the experiment were clearly understood and to ensure the interactors followed the established protocol. The interactors engaged all five students in the classroom at no more than a behavior level 2; consequently, all student avatar behaviors remained consistent throughout the virtual rehearsal, data however were only collected on the PT interactions with Marcus and Vince.

The beep tape was developed to have both Marcus and Vince begin to talk out at the 1:00 minute mark. At 1:30 mark, Marcus and Vince would begin to talk off topic and ignore the PT completely. After an approximate 45 seconds but no more than 1 minute, Marcus would engage the PT in an off topic conversation, attempting to escape the math lesson. Vince supported Marcus while looking for PT approval. After no more than four minutes of off task, behavior both Marcus and Vince would become engaged in the lesson and attempt to participate while remaining true to their archetypes. Each session began with no audio to allow participants to rate each student avatars' expected engagement level. Each Session ended with participants answering one question about their session.

Session Definitions

For each live session, participants will engage in reviewing a simple math lesson on solving a two-step algebra problem. This brief lesson plan will be provided for the participants by the researcher together with the manipulatives and materials needed for demonstration and engagement. A faculty member in the math education department provided the lesson plan to this researcher and indicated it would take at least two visits to the TLE TeachLive™ lab to complete. Data were collected on observed interactions with both Marcus and

Vince. Proximity was measured by whether or not a participant walks to the space on the identified for a particular student. See figure below, Figure 1 shows classroom and student {avatar} positions. Proximity will not include any seemingly haphazard walking to a student without actual student engagement.

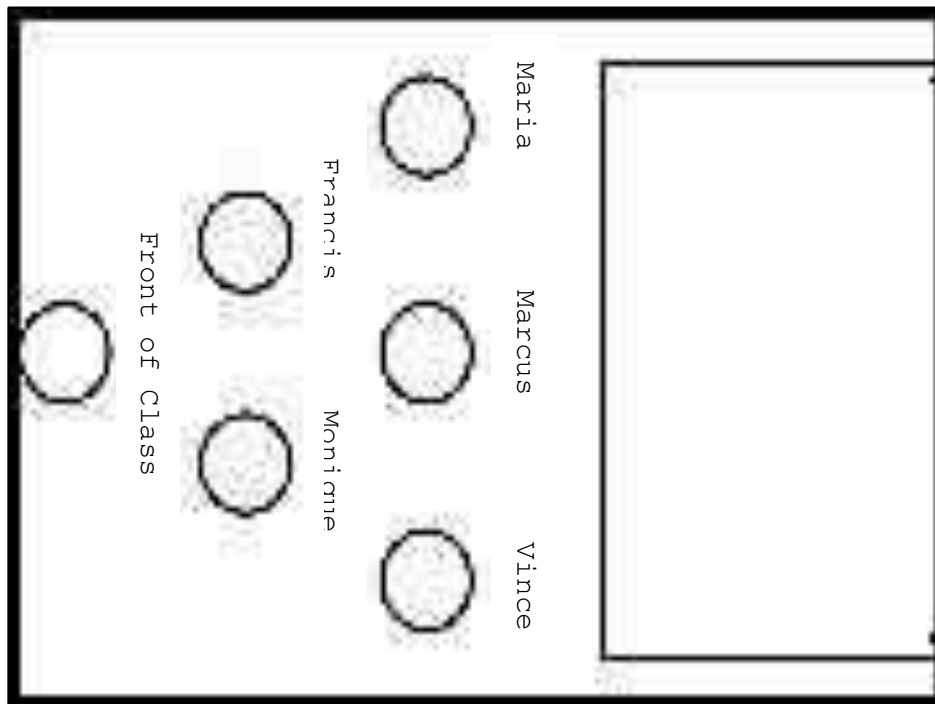


Figure 16 TLE TeachLive™ Lab

Positive comments (such as praise) and negative comments (such as put downs or identifying student deficits) were measured by both tone and actual words used with interrater agreement at 90% or greater. Cultural statements were considered if any statement related to ethnicity or race is directed at Marcus and Vince.

Study Protocols

After agreeing with the professor to meet their students, a time was arranged to recruit participants from the identified class. Participants were given a clear breakdown of time commitments for each phase of the study that occurred over several weeks. During phase one of the study, after participants have been recruited, they were divided into two groups, a control and an experimental group. During this phase all participants signed and receive a copy of the exempt research paperwork received from the UCF IRB office for research conducted in the TLE TeachLive™ Lab a copy of which is included at the end of this manual. Each script, together with the lesson plan and copies of all forms are included at the end of this manual. The time commitments and the daily protocol were as followed:

- I. Phase One-Introduction and first experience for control group (about two to three hours)
 - a. On day one control-group participants will sign and informed consent for exempt research, take the baseline survey from Understanding Prejudice webpage, and answer 3 Study AAR questions
 - a. What do you know about Bias?
 - b. What do you know about Emotional Disturbances?

- c. What do you know about Hispanics?
- b. After this initial survey each control participant will enter lab
 - a. Rank Avatars (See Figure 4)
 - b. Teach predetermined math lesson they are provided with
 - c. Answer one AAR question
 - 1. Describe your experience in the TLE TeachLive™ Lab today?

II. Phase One-Introduction and first experience for experimental group (about two to three hours)

- a. On day one Experimental-participants will sign and informed consent for exempt research, take the baseline survey from Understanding Prejudice webpage, and answer 3 Study AAR questions
 - a. What do you know about Bias?
 - b. What do you know about Emotional Disturbances?
 - c. What do you know about Hispanics?
- b. After this initial survey each control participant will enter lab
 - a. Rank Avatars (See Figure 2)
 - b. Teach predetermined math lesson they are provided with

c. Answer one AAR question

1. Describe your experience in the TLE

TeachLive™ Lab today?

III. Phase Two-Complete Second Experience (About one hour)

After experimental group completes their first session, they will be invited to return to do their second session based on their availability ensuring both control and experimental groups complete their second session on days two, three, or four

a. Based on their availability control participants will go through their third and fourth experiences in the TLE TeachLive Lab

b. Set up data collection space with recording equipment

c. Each control/experimental participant will enter lab

i. Rank Avatars

ii. Teach predetermined lesson on fractions they are all familiar with

iii. Answer one AAR question

1. Describe your experience in the TLE

TeachLive™ Lab today?

During Phase Three of the study, the experimental group were exposed to the treatment taking the implicit association

tests and completing the Iris modules. The IATs and the modules were given by the researcher to the experimental group with the weightless control group receiving the same intervention at the end of the study.

IV. Phase Three - Intervention (about three to four hours)

a. Experimental-participants will

- i. First take both IATs on Race and Disability results will be observed by researcher and recorded by participants
- ii. A conversation will then be started on CLD, Disability and ED. After a brief break, the IRIS modules will be completed and further conversation on Disability CLD and ED will continue.
- iii. Conversations will follow prescribed lesson formats shared by the Understanding Prejudice, Project Implicit, and IRIS sites.
- iv. Participants will complete a simple workshop evaluation

V. Phase Four - Complete Third and Forth Experience

(About one hour)

After experimental group completes their first session, they were invited to return to do their third

and fourth sessions based on their availability ensuring both control and experimental groups complete these sessions on days six to ten

- a. Based on their availability control participants will go through their third and fourth experiences in the TLE TeachLivE Lab
- b. Set up data collection space with recording equipment
- c. Each control/experimental participant will enter lab
 - i. Rank Avatars
 - ii. Teach predetermined lesson on fractions they are all familiar with
 - iii. Answer one AAR question
 1. Describe your experience in the TLE TeachLivE™ Lab today?

VI. Phase Six - Control Group Intervention (three to four hours) although this session was recorded and done identically to the experimental group. No data were disaggregated from this session.

- a. Control participants were
 - i. First take both IATs on Race and Disability results were observed by researcher and recorded by participants

- ii. A conversation was then started on CLD, Disability and ED. After a brief break, the IRIS modules were completed and further conversation on Disability CLD and ED will continue.
- iii. Conversations were followed prescribed lesson formats shared by the Understanding Prejudice, Project Implicit, and IRIS sites.
- iv. Participants completed a simple workshop evaluation

VII. At this time all participants were brought together for a recorded debriefing/focus group session. After completing the baseline survey and answering the three AAR questions from the beginning of the study, all participants were asked to voluntarily participate in a focus group.

- a. Set up Focus group protocols and rules with group
- b. Openly discuss issues related to Bias, ED, and Hispanics.

ASSOCIATED FORMS AND SCRIPTS
FOR
PROTOCOL MANUAL

Meeting the participants script

After a brief introduction by the professor to the class, I shared that I had an opportunity for individuals to participate in a research study. I shared with participants that there were no anticipated risks, compensation, or other direct benefits that would result from their participation in the study. I also shared that their participation was completely voluntary and they could discontinue their participation at any time without consequence. Participants were notified that they would be engaging the virtual students in the TLE TeachLive™ Lab on four separate occasions teaching a secondary lesson that I would provide them. Participants also received information that they would be completing a number of online activities together with this researcher. I also shared all these activities would be recorded for research purposes.

Interactor training script

The interactors were be given specific training regarding expected the outcomes and the levels of engagement prior to live sessions with participants. The researcher met with the interactors and discuss session objectives, expectations, and provide them with the needed information to engage participants. The researcher developed and provided the interactors with a beep tape. The beep tape provided the interactors with an audible cue to perform the same behaviors in a consistent manner. After discussing all aspects of the study with the interactors, a detailed practice session with the researcher was conducted to ensure these protocols are adhered too.

The following scenario was repeated with each participant:

Marcus and Vince began to talk out at the 1:00 minute mark. At 1:30 mark, Marcus and Vince began to talk off topic and ignore the PT completely. After an approximate 45 seconds but no more than 1 minute, Marcus then engaged the PT in an off topic conversation, attempting to escape the math lesson. Vince supported Marcus while looking for PT approval. After no more than four minutes of off task, behavior both Marcus and Vince become engaged in the lesson and attempt to participate while remaining true to their archetypes.

Introduction/initial lab experience script

This process was repeated for both control and experimental groups (about two hours)

Hello everyone, thank you for agreeing to participate in my research study in the TLE TeachLive™ Lab; as a shared when we met originally, your participation in this study will not expose you to any anticipated risks or provide you with compensation or any other direct benefit. Your participation is voluntary and you can withdrawal your consent without consequence at any time. All sessions will be recorded. Today we will spend anywhere from two to three hours together. Please open the folders in front of you. Inside you will find two identical forms with the title exempt research. I will ask each of you to sign this paper indicating that you agree to participate in my study. One copy will remain in the folder while the other is yours to keep. This form paper also provides you with contact numbers for both my dissertation chair Dr. Lisa Dieker and the Institutional Review Board (IRB), which oversees all research at the university. The lesson plan you will be using during all four of your visits is also in the folder, the teacher left the lesson plan for you a substitute covering in a beginning algebra class. Please do not take the lesson plan so all can share.

I am sure you noticed when you first entered the room that there are a number of laptops already setup in the room; these laptops will be used to access a brief survey and allow you to fill out some basic information about yourself then answer three questions related to the study. Only I or the research team that is listed on the paper signed earlier will have access to any of this information. The login ID for the survey is specific to the study we will enter it at the same time when we get to that point. Please answer all the questions to the best of your ability. We will all log in together and after you finish the survey, please click on the next tab on your screen and complete the form. For the purposes of this study you will be identified by a research ID and only I will know which ID belongs to each individual.

Participants were permitted to complete the baseline survey and answer all questions on the electronic form containing the three ARC questions. After completing these two online forms, participants were then transition to the TLE TeachLivE™ Lab or their initial experience. Once inside the lab, I will formally introduce each participant to the TLE TeachLivE™ Lab. By saying welcome to the TLE TeachLivE™ Lab, we are excited for you to meet our students. I wanted to again thank you for agreeing to participate in my research study. I also wanted to remind you

that your participation is completely voluntary and you can discontinue your participation at anytime without consequence. After you finish all your sessions in the lab, I will be sending you an invitation to participate in a focus group session where we can discuss your experiences in the lab as a group. As with all of our sessions, this session is being recorded. I will now ask that you state your name and affirm you are a voluntary participant so we can proceed. After the participant has stated their name and affirmed their participation we will continue.

I will briefly introduce each student to you prior to you beginning the lesson and ask you rate how you believe each student will perform the class today. When you teach the class is important to remember that the classroom is dynamic and the students see and respond to you in real time. The headset you are wearing allows for movement within the lab so you can get closer to students. The lesson you are teaching as a substitute covering in a beginning algebra class is on solving a two-step algebra problem and will be used for all your sessions.

Whatever your endpoint is you will pick up at that point in the lesson the next time you see the students. I have placed the cups and chips needed for your lesson on the table next to you. Each simulation will last about eight minutes. When you finish

you will return to the laptop used to rate each student and answer one question related to your experience.

Please have a seat on the computer screen you will see each student listed after I have read each description you, please rate how you believe that student will perform in class today. Let me introduce you to the students all are in the ninth grade. Sitting to your right is Monique she is biracial female who is cheerful, and enjoys school. To your left we have Francis an African American young man who is quiet and enjoys going to church. Behind Francis to your left is Maria, she is Latina and likes to draw. Immediately in front of you to the left of Maria is Marcus, he is Latino and enjoys himself at school. Behind Monique and to the left of Marcus is Vince, he is Latino, quiet and fun loving and has an emotional disturbance. After rating the students, participants will engage the class in the math lesson. Upon completing the simulation, participants will return to the laptop in the room and answer one question related to their experience in the lab.

Additional TLE TeachLive™ Lab experience script

For their second and subsequent lab experiences, participants reported directly to the lab. Participants saw a new group of student avatars for the second visit. All student descriptions remained identical except for Marcus and Vince, who interchanged the label of ED. Each group of student avatars were seen twice by participants alternating between the lighter and darker versions of the class for four visits. For each visit, either Marcus or Vince was identified as a Latino male with an emotional disturbance. For the second visit, I again formally introduce each participant to the TLE TeachLive™ Lab. By saying welcome to the TLE TeachLive™ Lab, we are excited for you to meet our students. I wanted to again thank you for agreeing to participate in my research study. I also wanted to remind you that your participation is completely voluntary and you can discontinue your participation at anytime without consequence. After you finish your sessions in the lab, I will be sending you an invitation to participate in a focus group session where we can discuss your experiences in the lab as a group. As with all of our sessions, this session is being recorded. I will now ask that you state your name and affirm you are a voluntary participant so we can proceed. After the

participant has stated their name and affirmed their participation we will continue.

As you see there are five secondary students in our classroom, each from diverse backgrounds. I will briefly introduce each student to you prior to you beginning the lesson and ask you rate how you believe each student will perform the class today. When you teach the class is important to remember that the classroom is dynamic and the students see and respond to you in real time. The headset you are wearing allows for movement within the lab so you can get closer to students. The lesson you are teaching as a substitute teacher on solving two-step algebra problems, will be used for all your sessions. Whatever your endpoint is you will pick up at that point in the lesson the next time you see the students. The needed materials of cups and chips for your lesson are on the table next to the computer. Each simulation will last about eight minutes. When you finish you will return to the laptop used to rate each student and answer one question related to your experience.

Please have a seat on the computer screen you will see each student listed after I have read each description you, please rate how you believe that student will perform in class today. Let me introduce you to the students all are in the ninth grade.

Sitting to your right is Monique she is biracial female who is cheerful, and enjoys school. To your left we have Francis an African American young man who is quiet and enjoys going to church. Behind Francis to your left is Maria, she is Latina and likes to draw. Immediately in front of you to the left of Maria is Marcus, he is Latino, enjoys himself at school and has an emotional disturbance. Behind Monique and to the left of Marcus is Vince, he is Latino, quiet and fun loving. After rating the students, participants will engage the class in the math lesson. Upon completing the simulation, participants will return to the laptop in the room and answer one question related to their experience in the lab.

The computer in the lab will be set up, to allow the participants to rate how they believe each student will perform based on a one-sentence introduction of that student. After rating the students, participants will engage the class in the initial math lesson or the continued lesson. Upon completing the simulation, participants will return to the laptop in the room and answer one question related to their experience in the lab.

The protocol for visits three and four participants will once again begin by thanking participants who will be asked to

affirm orally their willingness to participate. I will say I wanted to again thank you for agreeing to participate in my research study. I also wanted to remind you that your participation is completely voluntary and you can discontinue your participation at anytime without consequence. After you finish your sessions in the lab, I will be sending you an invitation to participate in a focus group session where we can discuss your experiences in the lab as a group. As with all of our sessions, this session is being recorded. I will now ask that you state your name and affirm you are a voluntary participant so we can proceed. After the participant has stated their name and affirmed their participation we will continue. During visits three and four participants will only be given the student descriptions and be asked to rate the students expected performance prior to continuing with the math lesson. The ED label for Marcus and Vince will swap each session with only one being identified as having an emotional disturbance in any one session.

Intervention Script

The intervention portion of my study will be given after the second visit to the lab for the experimental group and after the fourth visit for the control group. All scripts will be closely adhered to with little to no deviance for both experimental and control groups. Since intervention will be video taped, an interrater will observe 25% of the videos to ensure reliability and fidelity of treatment.

On the day of the intervention, I will welcome the participants to a predetermined space in the Teaching Academy by saying welcome to the TLE TeachLive™ Lab workshop; today we will spend a few hours together going through some activities that will help us be better teachers in both the virtual and real classroom environments. I wanted to again thank you all for agreeing to participate in my research study. I also wanted to remind you that your participation is completely voluntary and you can discontinue your participation at any time without consequence. I know this group has already been in the lab a couple of times after we finish here you will finish your last two sessions in the lab. I will be sending you all an invitation to participate in a focus group session where we can discuss your experiences in the lab all together. As with your lab sessions, this session is being recorded. I will now ask

that you each state your name and affirm you are a voluntary participant so we can proceed. After each participant has stated their name and affirmed their participation we will continue.

Today we will begin with a couple of brief activities that will allow us to learn each other's names and get us ready to run through the computer modules and programs today. We should be able to complete these exercises in about three hours and all the sites we will use have been preloaded on the computers you will be using. At this point, I will ask participants to all sit around a table and share with them that the information we will be discussing and sharing can be both very personal and emotionally charged topics for some. As such, I want to get a little more comfortable with you and you with me and make sure we all know each other's names and begin to feel comfortable with one another.

I will then pull a ball from a bag, and explain:

I will give this ball to someone, who will give it to someone else; they will then give it to another person until the ball gets back to me. Our job is to give the ball to someone who has not gotten it yet, until each person touches it. The only rule is that you have to say the name of the person you are

giving the ball to, and if you do not know a persons name ask them. Please *remember* whom you gave the ball to, because we will repeat the pattern until we all know each other's names. Okay I will start.

After we go through one round, we will do activity again but I will add more balls ending the activity when things get chaotic sharing I think we now know each other's names.

We will now go back to our seats and go through another short activity. Sometimes it's difficult to talk about yourself to other people, so in this exercise I'm going to read one dozen statements that go like this: 'Stand if you have ever [BLANK].' Please do just that and stand if a particular statement describes you. If you don't want to participate, or you don't want to share something about yourself, you can just remain seated. What I'm hoping is that as you see people stand or sit, you'll start to learn about each other. Ok let us begin. I will then read the following 12 statements:

I will ask that you...

1. Stand if you have ever traveled outside of the U.S.
2. Stand if you are fluent in a language other than English.
3. Stand if you have ever ordered something to drink in a styrofoam or plastic cup.
4. Stand if you have ever been bothered by the unnecessary use of styrofoam or plastic.
5. Stand if you have ever thought about transferring from UCF to a different school.
6. Stand if you have ever thought about dropping out of college and just getting a job.
7. Stand if you have ever known someone with AIDS.
8. Stand if you have ever been the target of racial discrimination.
9. Stand if you have ever harbored prejudice against people based on their skin color.
10. Stand if you think you are less prejudiced than the average student is at UCF.
11. Stand if you believe that college students can make the world less prejudiced.
12. Stand if you believe that you can make the world less prejudiced.

These icebreakers were retrieved from the Understanding Prejudice webpage.

After completing the icebreakers, participants will be instructed to go to their individual computers. Prior to participants beginning the Implicit Association Tests (IAT) I will explain that according to the project Implicit webpage the IAT is a computer-based test that measures how quickly people are able to categorize various words and images. It takes advantage of the fact that most of us identify words and images quickly when they come from linked groupings than when they come from unlike groups.

For example, if you connect librarians with intelligence and boxers with violence, you can almost certainly tell in an instant that synonyms for intelligence like smart and brainy relate to the matching category of "librarians or intelligence," and synonyms for violence like aggression and hostility relate to the matching category of "boxers or violence." However, if the components are switched around, and you are asked whether smart and brainy relate to the matching category of "librarians or violence" or to the matching category of "boxers or intelligence", it will probably take you longer to match the categories because the categories contain components that are not usually related to each other. Consequently, by comparing

the speed with which people categorize words or images, the IAT indirectly assesses how closely people associate certain elements with each other.

Participants will now be asked to click on the Project Implicit webpage and follow the on-screen instructions I will also share that each test should only take about five minutes to complete. Participant will then take the IATs on race and disability. I will ask participants to take a screen shot of the results of each test for further discussions; each screen shot will be saved only with a participant research identifier.

I will ask participants to take a break but not discuss their results with others until everyone has finished both IAT tests. After a five minute break participants will return to the room and we will continue. I will use the project implicit webpage to answer some frequently asked questions before moving on to the IRIS modules.

I will direct participants to click on the tab for the first Iris Module on Culture. We will follow the modules and work through them together. The modules are designed to elicit conversation and I can not control for participant discussions or statements. However, I will remain consistent on the main questions poised by the modules. The module on diversity entitled, Cultural and Linguistic Differences: What Teachers

Should Know had three salient questions for participants to reflect upon: 1) What influence does culture have on a student's school success? 2) How does linguistic diversity influence classroom performance? And 3) What impact do culture and language have on a family's involvement in school and on their child's education? The module on behavior management entitled, You're in Charge! Developing your own comprehensive behavior management plan had two salient questions: 1) What do you think you should keep in mind as you anticipate a crowded classroom with kids of all types-including some who might have so-called "behavior issues"? And 2) Which elements of a behavior plan do you think would be important to have in place on the first day of school?

Each module has audio and video from experts in the field. These files will be viewed together and participants will be guided to keep their statements contained within the context of the overarching questions within the modules.

Focus group Script

All participants will be invited to attend a focus group session to discuss their experience in the TLE TeachLivE™ Lab. My invitation will be emailed to their individual school email addresses. I will state, my name is Angel Lopez I am a doctoral candidate at the University of Central Florida. I would like to speak with you regarding your recent experiences in the lab and workshops on diversity and behavior management. My supervising professor is Dr. Lisa Dieker her contact information was on the consent form you signed at the beginning of the study. If you no longer have that paper and need to contact her number is [REDACTED]. I have printed additional copies of the consent form should you wish to take a copy with you today.

The focus group session should take no more than one hour and you do not have to answer any question you are not comfortable answering. I wanted to again thank you all for agreeing to participate and finishing my research study. This focus group is where we can discuss your experiences in the lab and workshop. The goal of the research is to provide educators and other researchers a starting point to identify implicit biases that may influence student academic achievement and teacher transience. As with your lab sessions, this session is being recorded as in all other sessions although this session as

others will be video recorded your name will not be associated with your answers which will only be identified by your personal research identification number. Remember there are no right or wrong answers please feel free to express your opinions and share how you truly feel. I will now ask that you each state your name and affirm you are a voluntary participant so we can proceed. After each participant has stated their name and affirmed their participation we will continue. For purposes of this focus group session, I will ask that we each allow others to finish speaking before we begin. I have a ball here only the person holding that ball may speak. I will now ask the first question and as we did in our warm-up exercises, we will give the ball to the next person until it gets back to me.

1) Overall how satisfied were you with your TLE TeachLivE™ Lab experience? After each person has answered, I will ask a second question. 2) If given the opportunity would you use the TLE TeachLivE™ Lab in the future and recommend it for colleagues? I will end the focus group session by asking if anyone has any additional information or comments they would like to share. Each participant will be allowed to hold the ball and answer all questions.

Exempt Research

August 1, 2010

Title of Project: *Teacher Training in the TeachME Virtual Classroom Laboratory*,

Principal Investigator: Lisa Dieker

Other Investigators: Michael Hynes, Janet Andreasen, Charles Hughes, Eileen Smith, Peña Bedesem, Angel Lopez, and Jackie Rodriguez.

You are being invited to take part in a research study. Whether you take part is up to you.

We are conducting a study entitled *Teacher Training in the TeachME Virtual Classroom Laboratory*, the purpose of which is to examine how the virtual classroom laboratory can be used effectively for teacher training. We are part of a research team for this study. The members of the research team include Lisa Dieker, Janet Andreasen, Charles Hughes, Eileen Smith, Angel Lopez, and Jackie Rodriguez.

There are no anticipated risks, compensation or other direct benefits to you as a participant in this study. You are free to withdraw your consent to participate and may discontinue your participation in the study at any time without consequence. Your participation or non-participation in this study will not impact your grade in any course. As a participant you will be asked to complete an interview prior to teaching in the virtual classroom laboratory. The interview will last no longer than 30 minutes and follows the questions typically asked by a district on a job interview. With your permission, we would like to audio and video tape the pre-interview. You will not have to answer any question you do not wish to answer. Additionally, you will be video-taped while teaching in the virtual classroom laboratory. After completing the teaching in the virtual classroom, you will be asked to complete a post-interview. Again, with your permission, we would like to audio and video tape the post-interview. You will not have to answer any questions you do not wish to answer. Only the research team will have access to the audio and video tapes, which may be professionally transcribed, removing any identifiers during transcription unless you give permission to use them in professional publications and presentations. The tapes will be kept in a locked filing cabinet and will be kept indefinitely to allow for continued analysis of this emerging technology and teacher performance. Your identity will be kept confidential and will not be revealed in any manuscript, project report or data analysis.

You must be 18 years of age or older to take part in this research study.

[REDACTED]

Study contact for questions about the study or to report a problem: If you have questions, concerns, or complaints If you have any questions about this research project, please contact me at (407) 823-3885 or by email at ldieker@mail.ucf.edu.

IRB contact about your rights in the study or to report a complaint: Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board (UCF IRB). This research has been reviewed and approved by the IRB. For information about the rights of people who take part in research, please contact: Institutional Review Board, University of Central Florida, Office of Research & Commercialization, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 or by telephone at (407) 823-2901.

Initial Visit and Three ARC Questions



Figure 17 Three-ARC Questions and Demographics

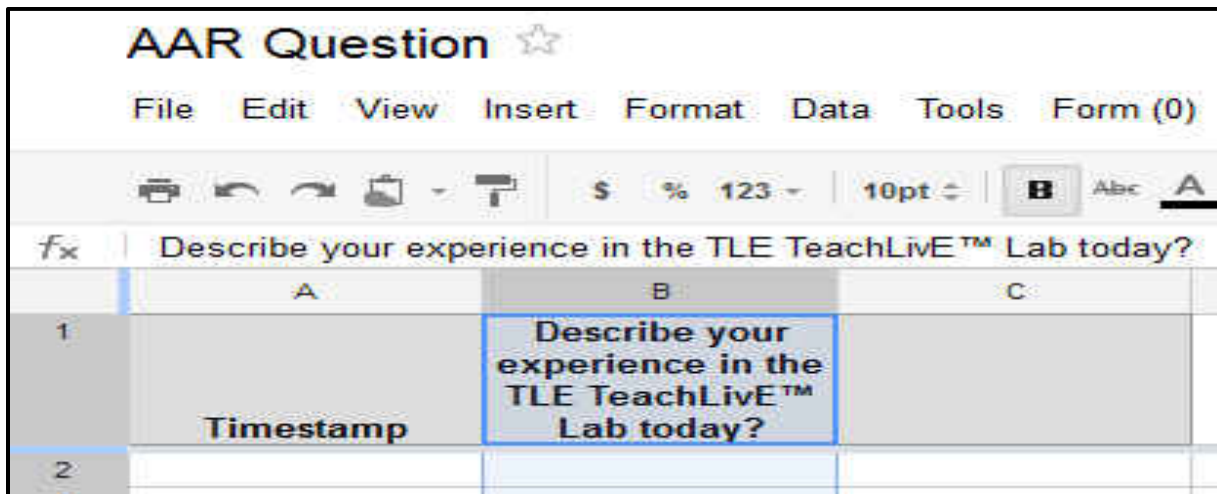


Figure 18 AAR Question

Ranking of Avatars Form

Rate how you believe each student listed below will perform in class today.

Week 1*

	Will be off task and Misbehave	Neutral	Will be on task and Behave
Monique a biracial 9th grader is a cheerful student and enjoys school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Francis an African American 9th grader is a quiet student and enjoys going to church	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maria a Latina 9th grader is a quiet student and I likes drawing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Marcus a Latino 9th grader enjoys himself at school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vince a Latino 9th grader is quiet and fun loving student with an emotional disturbance.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page 1 of 1

Figure 19 Avatar rating form

Generated Reports



FORMSCENTRAL TeachLIVE Student Rating Form File

Design Options Test Distribute View Responses **1** Summary Report Upgrade

Myriad Pro 12 B I U A

3 responses (50 Maximum) >>Upgrade Now to view up to 5000 responses

All Responses +

	A	B	C	D	E	F
Time Submitted	Week 1	Monique a biracial 9th grader is a cheerful student and enjoys school.	Francis an African American 9th grader is a quiet student and enjoys going to church	Maria a Latina 9th grader is a quiet student and I likes drawing.	Marcus a Latino 9th grader enjoys himself at school.	Vince a Latino 9th grader is quiet and fun loving student with an emotional disturbance.
1	October 25, 2011 11:29 AM	Will be off task and Misbehave	Will be on task and Behave	Will be on task and Behave	Neutral	Will be off task and Misbehave
3	October 25, 2011 11:16 AM	Will be on task and Behave	Neutral	Will be off task and Misbehave	Will be off task and Misbehave	Will be on task and Behave
1	October 25, 2011 6:20 AM	Neutral	Neutral	Neutral	Neutral	Neutral

+ Add a Row

Figure 20 Student rating results

Addition Lesson Plan

LESSON PLAN

CONTENT AREA: Solving Multiple Integer Addition Problems

GRADE LEVEL: 9th grade

NEXT GENERATION SUNSHINE STATE STANDARDS:

MA.912.A.1. Expand and deepen understanding of real and complex numbers by comparing expressions and performing arithmetic computations.

UNIT: Real and Complex Number Systems

GOAL:

Students will understand how to solve multiple step addition problems

OBJECTIVE:

Students will solve multiple integer addition problems that are linear in nature.
Students will be able to solve a multiple step addition problem accurately.

MATERIALS:

Counting Pieces

PROCEDURES:

Have students work through the following problem individually or in small groups:

Given the addition problem $732 + 539$, ask class how would you set up this addition problem?

Give students time to work through the problem and come up with an answer.
Ask questions as you are circulating the classroom including “why can you do that?” and “how did you approach the problem?”

Ask students to give you their solution strategies in a whole group discussion.

Potential strategies include solving numerically, guess and check, and setting up an equation. Guide students to the appropriate equation of set up of 732 plus 539.

In order to solve this, use counting pieces to represent the parts of the addition problem. Break down each integer by location ones tens and hundreds. Show students how to work through each level using your counting pieces to show that you need to carry if resulting answer is greater than 9. For example $9 + 2$ is 11 so you would bring down the 1 and carry 1. Walk students through each step. The goal is to know how many pieces to carry and progress through the problem getting the correct answer of 1271.

Connect the steps to the context of the problem. Providing relevant examples related to student interests. If students complete this problem you will then write an additional problem increasing the integers to 4.

$1271 + 8779$. This time you will help students identify the integer to the thousands spot. Work from the beginning with $9+1$ which equals 10 showing you bringing down the 0 and carrying the 1. Work through this problem with the answer of 10050. If students complete this problem you will then increase the integers to 5.

$10050 + 90050$. Again, work with students to identify each number spot helping students identify the integer to the ten thousands spot. Work through the problem with the resulting answer being 100100.

EVALUATION:

Students are asked to explain the steps of solving the math problem worked. Ask questions throughout and conduct observational assessment throughout lesson.

Workshop Evaluation



Workshop Evaluation

	Very satisfied	Satisfied	Unsatisfied	Very unsatisfied
Overall, how satisfied were you with your experience in the the TLE TeachLive™ Lab ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Definitely	Probably	Probably not	Definitely not
Would you recommend the TLE TeachLive™ Lab to colleagues or contacts you know?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Would you use the TLE TeachLive™ Lab in the future?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Next

Page 1 of 2

0% Complete



Workshop Evaluation

What do you like about the TLE TeachLive™ Lab?*

What do you dislike about the TLE TeachLive™ Lab?*

Prev

Submit

Page 2 of 2

60% Complete

APPENDIX C: PROJECT IMPLICIT PERMISSION

From: [REDACTED]

Sent: Monday, August 29, 2011 1:17 PM

To: Angel Lopez

Subject: Re: Use of 2 of your IAT on race and disability

Hi Angel,

Just to confirm -- your plan is to use the materials on the demonstration site to administer the IATs? You are welcome to do this (and your screen shot proposal is fine, too) -- I just want to mention that with the demonstration site, your IAT data will be limited to the simple results statement we provide at the end of the test (i.e. a slight association with Good/Black). This may be fine if you simply need the IATs to incite discussion, but the data available to you through the demonstration site will not be extensive [REDACTED]

I hope this helps -- let me know if you have any additional questions.

Best,

Emily

Figure 21 Project Implicit Permission

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