AN EXAMINATION OF THE IMPACT OF LEARNING DISABILITY STATUS AND CULTURAL AND LINGUISTIC BACKGROUND ON PRE-SERVICE TEACHERS’ ATTRIBUTIONS

A DISSERTATION SUBMITTED TO THE GRADUATE DIVISION OF THE UNIVERSITY OF HAWAI‘I AT MĀNOA IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN EDUCATION

By
Christina Tsien Keaulana

Dissertation Committee:
Bryan Cook, Chairperson
Ron Heck
Lysandra Cook
Leslie Novosel
Michael Salzman
ACKNOWLEDGMENTS

I would like to extend my most sincere gratitude to my dissertation chair, Dr. Bryan Cook. He embodies everything a scholar, researcher, and mentor should be and I was honored to have him guide me through every step of my journey in writing this dissertation. His attention to detail and expertise pushed me to analyze and interpret my work to meet a standard I never would have reached without him.

I also want to express my immense appreciation for the incomparably wise Dr. Ron Heck. His comforting demeanor and warm sense of humor quelled my inhibitions about statistic analyses. He devoted many hours assisting me with conceptualizing the sea of numbers that was my data and helped me not only develop, but understand the bedrock of my dissertation.

I would also like to acknowledge the members of my committee for sharing their precious time and positive insights: Dr. Leslie Novosel, Dr. Lysandra Cook, and Dr. Michael Salzman. As a burgeoning teacher educator, I am truly inspired by your genuine hearts and your unwavering commitment to your students.

I owe a tremendous outpouring of thanks to my family, Jayson, Nella, Carter, and Kennedy Kauwenaoele, for the meals, babysitting, counseling, and positive energy. In addition, I will always be indebted to my mother, Josephine Ho, the first and most important educator in my life. She let me play in the dirt, fall out of trees, and make lots of mistakes. Everything I am is because of her fortitude and selfless love. Thank you to my husband, Noland, and my two sons, Koanui and Makana, who serve as my inspiration every day to leave the world a better place than when I arrived. Above all, thanks to God who continues to grant me perseverance, character and hope in everything I do.
ABSTRACT

In social psychology, attributions are inferences about the causes of events or behaviors, and attribution theory is concerned with how individuals interpret events and how this relates to their thinking and behavior. Educators often attribute the underachievement of students with learning disabilities (LD) and students from culturally and linguistically diverse backgrounds to inherent deficiencies in their families, cultures, and communities. Teachers’ attributions can have a powerful impact on students’ self-perception of their competence as well as their motivation and performance because teachers’ cues influence students’ own attributions for their successes and failures. This study employed an experimental vignette design to investigate how student identification as LD/non-LD and Native Hawaiian/Caucasian affected pre-service teachers’ attributional responses for locus of control, stability, and controllability in hypothetical scenarios of student academic failure and behavioral challenges. The 85 pre-service teacher participants were drawn from two teacher education programs in Hawaii, The University of Hawaii at Manoa and Leeward Community College. Interaction effects showed relatively low levels of frustration and control over academic outcomes for Caucasian students with LD compared to those without LD, however LD status did not appear to significantly impact responses for Native Hawaiian students. Contrary to previous research studies, findings indicated that participants believe problematic behavior is more likely to recur from students without LD. Teacher education programs may consider providing more instruction for pre-service teachers related to deficit thinking, culturally responsive teaching, differentiation, attribution retraining, positive behavior interventions and supports, social emotional learning, and collaborative strength-based strategies facilitate positive attributions toward students with LD.
# TABLE OF CONTENTS

**ACKNOWLEDGMENTS** ........................................................................................................ ii

**ABSTRACT** .......................................................................................................................... iii

**CHAPTER 1. INTRODUCTION** .............................................................................................. 1

  - Background .......................................................................................................................... 1
  - School-Related Outcomes for Individuals with Learning Disabilities .................. 2
  - School-Related Outcomes for Culturally and Linguistically Diverse Students.... 4
  - Outcomes for Native Hawaiian and Other Pacific Islanders ............................... 8
  - The Role of Attribution on Student Outcomes ......................................................... 10

  - Statement of the Problem ............................................................................................... 12
  - Purpose Statement .......................................................................................................... 15
  - Research Questions ........................................................................................................ 15
  - Null Hypotheses .............................................................................................................. 16
  - Definitions ...................................................................................................................... 16

**CHAPTER 2. LITERATURE REVIEW** ..................................................................................... 18

  - Introduction ..................................................................................................................... 18
  - Attribution Theory Applied to Academic Achievement .......................................... 18
  - Attribution Theory Applied to Behavioral Challenges .............................................. 25
  - Teachers’ Attributions for Students with Learning Disabilities ............................ 28
  - Teachers’ Attributions Towards Culturally and Linguistically Diverse Students .... 32
  - Learned Helplessness ...................................................................................................... 33
  - Overrepresentation of Culturally and Linguistically Diverse Students with Learning Disabilities .................................................................................................................. 35
Analysis of Literature Base.................................................................39
Strengths of Attribution Research Base...........................................40
   Evaluation of Weaknesses ............................................................41
   Gaps in Teacher Attribution Research ...........................................43
CHAPTER 3. METHOD ........................................................................45
   Participants ..................................................................................45
   Setting .........................................................................................48
   Research Design ...........................................................................49
      Instrument .................................................................................49
      Procedures .................................................................................53
   Data Analysis ................................................................................54
CHAPTER 4. RESULTS .......................................................................56
   Academic Vignette Analyses .........................................................61
   Behavioral Vignette Analyses .........................................................68
   Qualitative Data on Statistically Significant Findings ......................70
CHAPTER 5. DISCUSSION .................................................................72
   Control Over Academic Failure ......................................................72
   Frustration with Academic Failure ................................................75
   Expectation of Future Behavioral Challenge ...................................77
   Academic Versus Behavioral Scenarios .........................................80
   Implications .................................................................................80
   Limitations ..................................................................................85
   Recommendations for Future Research .......................................87
Conclusion ................................................................................................................................. 89

LIST OF APPENDICES........................................................................................................... vii

LIST OF TABLES..................................................................................................................... viii

LIST OF FIGURES .................................................................................................................. x

REFERENCES .......................................................................................................................... 102
LIST OF APPENDICES

Appendix A. Recruitment Announcement and Consent to Participate Form ..........................90
Appendix B. Vignettes ........................................................................................................93
Appendix C. Pre-service Teacher Attribution Survey ......................................................97
Appendix D. Institutional Review Board Approval Letter .................................................101
LIST OF TABLES

Table 3.1  Pre-service Teacher Demographics ................................................................. 46
Table 4.1  Academic Multivariate Tests .................................................................................. 57
Table 4.2  Academic Tests of Between-Subjects Effects ......................................................... 58
Table 4.3  Behavioral Multivariate Tests ................................................................................ 59
Table 4.4  Behavioral Tests of Between-Subjects Effects ......................................................... 60
Table 4.5  Descriptive Statistics: Control Over Student Outcomes ...................................... 61
Table 4.6  Tests of Between Subjects Effects: Control Over Student Outcomes ................. 62
Table 4.7  Descriptive Statistics: Dependent Variable: Frustration ....................................... 64
Table 4.8  Tests of Between Subjects Effects: Dependent Variable: Frustration .................. 64
Table 4.9  Descriptive Statistics: Dependent Variable: Empathy ......................................... 66
Table 4.10 Tests of Between Subjects Effects: Dependent Variable: Empathy ................. 66
Table 4.11 Descriptive Statistics: Dependent Variable: Expectation for Future Failure .......... 67
Table 4.12 Tests of Between Subjects Effects: Dependent Variable: Expectation for Future Failure .......................... 68
Table 4.13 Descriptive Statistics: Dependent Variable: Expectation of Future Behavioral Problems ........................................... 68
Table 4.14 Tests of Between Subjects Effects: Dependent Variable: Expectation of Future Behavioral Problems .............................. 69
LIST OF FIGURES

Figure 1.  Plot of Two-way Interaction: Control over Student Academic Outcomes........63
Figure 2.  Plot of Two-way Interaction: Frustration with Student Academic Failure........65
Figure 3.  Plot of Two-way Interaction: Expectation of Future Behavioral Challenges....70
CHAPTER 1. INTRODUCTION

Background

A learning disability (LD) is defined by federal law in the Individuals with Disabilities Education Act (IDEA) as “an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculation” (20 U.S.C. § 1401 (30)). About 40% of all students ages 6 through 21 served under IDEA are identified as having a specific LD (37th Annual Report to Congress on the Implementation of IDEA, 2015). The Diagnostic and Statistical Manual of Mental Disorders (DSM) published by the American Psychiatric Association redefined the criteria for diagnosis of LD in its most current version (DSM-V, 2013) to reflect the latest socio-cultural understanding of the condition. The DSM-V stated that LD is not caused by visual, hearing, or motor disabilities; intellectual disabilities; emotional disturbance; cultural factors; limited English proficiency; environmental or economic disadvantages; or inadequate instruction. In addition, current academic skills must be well below the average range of scores in culturally and linguistically appropriate tests of reading, writing, or mathematics.

As described in the following sections, the National Center for Learning Disabilities (NCLD, 2014) reported that individuals with LD tend to experience a variety of problematic outcomes such as low self-esteem, set low expectations for themselves, struggle with underachievement and underemployment, have fewer friends than their non-LD peers, and encounter trouble with the law. Moreover, certain groups of culturally and linguistically diverse (CLD) students are overrepresented among students with LD and experience much higher rates of negative school and post-school outcomes than non-LD and non-CLD peers. Such outcomes may be related to teachers’ attributions.
School-Related Outcomes for Individuals with Learning Disabilities

According to the National Assessment of Educational Progress (2015), 33% of 4th graders with LD scored at or above a basic reading level, compared with 74% of students without disabilities. For 8th graders, 37% of students with LD scored at or above the basic reading level, compared with 81% of students without disabilities. In math, 54% of 4th-grade students with LD scored at or above the basic level, compared with 85% of students without disabilities. For 8th graders, 32% scored at or above the basic math level, compared with 76% of students without disabilities. Based on the U.S. Department of Education IDEA State Data Displays (2011) one-third of students with LD have been held back (retained) in a grade at least once. A 2011 IDEA report found that 68% of students with LD leave high school with a regular diploma while 19% drop out and 12% receive a certificate of completion (U.S. Department of Education, 2011).

In addition to lower educational outcomes, researchers have consistently found a higher-than-normal rate of behavioral problems in the classroom among students with LD (e.g., Cullinan, 2002). Parents and teachers note that many children with LD share the following characteristics: fidget and squirm, get out of their chairs when they’re not supposed to, run around or climb constantly, have trouble playing quietly, talk too much, blurt out answers before questions have been completed, have trouble waiting their turn, interrupt others when they’re talking, butt in on the games others are playing (APA, 2000, p. 86). Moreover, students with LD frequently exhibit listening comprehension problems that can be misinterpreted as, for example, failing to follow directions or being oppositional or unmotivated (Gargiulo, 2004). Attention is considered an essential skill in learning and an estimated 41% to 80% of students with LD have attention problems (Smith et al., 2004).
Students with LD who have attention problems reportedly interrupt others more frequently and are less attentive to peers (Kotkin, Forness, & Kavale, 2001).

Empirical studies have also shown that positive teacher–student relationships are associated with multiple positive outcomes including development of children’s prosocial behavior (Cornelius-White, 2007), children’s psychosocial adjustment in school (Buyse, Verschueren, Verachtert, & Van Damme, 2009), and children’s motivation in school (Maulana, Opdenakker, den Brok, & Bosker, 2011). Conversely, negative teacher–student relationships are associated with undesirable outcomes such as poor peer relations (Breeman et al., 2015), feelings of loneliness and/or depression (Maldonado-Carreno & Votruba-Drzal, 2011), and disruptive behavior (Hamre et al., 2008; Spilt et al., 2011).

Common characteristics of LD identified by Gargiulo (2010) such as difficulty with attention, oral language difficulties, psychological process deficits, and information processing problems may lead to socially unacceptable behaviors that school systems do not tolerate. The National Center for Learning Disabilities (2014) reported that one in two students with LD experiences a suspension (in or out of school) or expulsion. Only students served in the category of emotional and behavioral disorders (EBD) received more disciplinary actions. Lower educational attainment and exclusionary experiences in one’s childhood can have long-term repercussions. A 2011 National Longitudinal Transition Study-2 (NLTS2) reported that students with LD continue to experience one of the highest drop-out rates among all students with disabilities; only one other category of students--those with EBD--experienced a higher drop-out rate. According to the NLTS2 report, 55% of youth with LD had some type of involvement with the criminal justice system within eight years of leaving high school and one in three had been arrested. Negative outcomes carry over to adult
life, as indicated by data from the U.S. Census Bureau Survey of Income and Program Participation (2010), which showed that only 46% of working-age adults with LD reported being employed. The vast majority, 92%, had annual incomes of less than $50,000, while 67% earned $25,000 or less within eight years of leaving high school.

Lower levels of academic achievement and lower graduation rates coupled with higher levels of disciplinary action and future incarceration also plague students from CLD backgrounds. The evidence that students with LD and from CLD backgrounds share multiple negative school-related outcomes in schools across the country has been attributed to systemic discrimination rooted in preconceived notions of race and disability (Blanchett, 2006; Coutinho & Oswald, 2004; Serna, Forness, & Nielsen, 1998).

**School-Related Outcomes for Culturally and Linguistically Diverse Students**

Disproportionality in special education is characterized by overrepresentation of particular groups relative to the presence of the group in the overall student population. Overrepresentation of CLD students in subjective categories of LD, EBD, and intellectual disability (ID) as well as the quality of their educational experiences has been one of the most significant issues faced by the U.S. public school system for several decades (Artiles & Ortiz, 2002). The prescribed evaluation procedures and the definitions of disability conditions in IDEA stipulate that children are not to be identified as disabled because of poor achievement due to environmental “disadvantage” or ethnic, linguistic, or racial difference. However, from a legal perspective, evidence of a pattern of disproportionate representation has been sufficient to initiate policy action to reduce disproportionality. Through the U.S. Office for Civil Rights (OCR), ethnic representation of students in special education has been monitored every two years at the state and local levels. Attention is being paid to the policy, procedures, and
practices that may result in unequal, unfair treatment of students from different racial/ethnic groups (Coutinho & Oswald, 2004). Over the past three decades, teachers’ attributions of students’ academic and behavioral challenges in the classroom have been examined as one form of differential treatment of students from different cultural and linguistic backgrounds (Reyna, 2000; Woodcock & Vialle, 2011).

Waitoller, Artiles, and Cheney (2009) reviewed the overrepresentation research published between 1968 and 2006 and found that most of the research on LD has been framed in three ways: a sociodemographic model in which characteristics of individuals and contexts are examined, a critical perspective in which power issues related to race are addressed, and a framework that examines the role of various professional practices in the creation and maintenance of overrepresentation. Fletcher and Navarrette (2011) attribute overrepresentation of Hispanic students to linguistic, cultural, economic or other background characteristics that were misinterpreted as deviant or, more specifically, represented as LD. These misinterpretations can be linked back to how teachers originally attribute academic failures or undesired behaviors that CLD students exhibit.

While considerable attention has been focused on black-white achievement gaps, socioeconomic disparities in academic achievement appear to be intricately intertwined with racial disparities. The similar academic trends for low-SES as well as minority students may implicate discrepancies in instructional delivery for both groups. A key study conducted by Artiles, Aguirre-Munoz, and Abedi (1998) identified placement predictors in LD programs for Latino, African-American, and White students. They used 12 predictor variables from two key domains (student and family) and used placement data from a national database of eighth-grade students. They found that factors of socioeconomic status (SES), gender, and limited
English proficiency (LEP) predicted placement in LD programs for all ethnic groups. Similarly, Oswald, Coutinho, Best, and Singh (1999) analyzed district-level data on the proportion of students from low–socioeconomic status (SES) backgrounds and the proportion of minority students in the school population. They found that African American and Hispanic students were identified as having LD more often in low SES districts. Research consistently affirms that a student’s SES and race predict identification with LD, thereby suggesting a continued need to examine how these student characteristics might affect teachers’ attributions of student outcomes.

In addition to CLD students having higher LD identification rates, there is also substantial evidence that CLD students with LD are segregated and excluded at higher rates. According to the U.S. Department of Education Office for Civil Rights’ Report on School Discipline, Restraint, & Seclusion (2014), students with disabilities served by IDEA are more than twice as likely to receive one or more out-of-school suspension as students without disabilities and more than one out of four boys of color with disabilities (served by IDEA) and nearly one in five girls of color with disabilities receives an out-of-school suspension. Black students represent 19% of students with disabilities served by IDEA, but 36% of students who are restrained at school through the use of a mechanical device or equipment designed to restrict their freedom of movement. Artiles, Rueda, Salazar, and Higareda (2005) compared English learner placement patterns in special education in California and found that English Language Learners (ELLs) identified with LD were placed in more restricted environments at higher rates than non-ELLs with LD. Vincent, Sprague, and Tobin (2012) indicated that Hispanic, African American, and American Indian/Alaska Native students, as well as ELLs with LEP, are not only over-identified as having LD, but they also tend to experience
disproportionately high disciplinary exclusions compared to students whose ethnic identity is non-Hispanic and whose racial identity is Asian or Caucasian. Their study examined data from all districts in a northwestern state of the United States reflecting disciplinary incidents leading to exclusion of students from the classroom. They found more severe disciplinary exclusions for students with LD and LEP compared to those only with LD. This data raises the question of whether differential disciplinary measures for CLD students are linked to how those delivering the sanctions attribute the students’ behaviors.

Overrepresentation has been linked to the premise that general education teachers from the dominant Eurocentric culture have pre-determined attributional beliefs about CLD students regarding their linguistic competence and academic potential (Barrera, 1995; Cummins, 1980; Gonzalez, Bauerle et al., 1996; Rueda & Garcia, 1996; Terrell & Terrell, 1983; Wood & Valdez-Menchaca, 1996). These predispositions powerfully influence how and what these educators see as problems. Baca (1998) stated that many American teachers operate under subtractive cognitive models which label CLD students who struggle with “normal” linguistic skills and knowledge as “deficient.” The misperceptions of these teachers and evaluators may trigger the onset of inappropriate referral, misdiagnosis, and, ultimately, to misplacement in special education. Erroneous placement in special education deprives CLD students of critical opportunities to help them catch up with their classmates due to less enriching and challenging curriculum (Langdon, 2002). There is extensive evidence suggesting that students from CLD backgrounds perform below grade level and drop out at much higher rates than their Caucasian peers (Bennett et al., 2004; Conchas & Noguera, 2004; Sanders, 2000; Skiba, Simmons, Ritter, Kohler, Henderson, & Wu, 2003). This, in turn, diminishes their chances to go to college, and excludes them from higher-paying professional
jobs, thus entrapping these already marginalized groups in poverty (Brown & Brown, 2012; Langdon, 2002).

Thus far, empirical research reporting on CLD disproportionality in the past 20 years has focused largely on African American, Hispanic, and Native American populations (Artiles, Trent & Kuan, 1997; Vasquez et al., 2011). One group of CLD learners that is rarely addressed in disproportionality literature, yet has experienced particularly problematic educational and post-school outcomes is Native Hawaiians and other Pacific Islanders.

**Outcomes for Native Hawaiian and other Pacific Islanders**

According to the 2014 U.S. Census Bureau, the Native Hawaiian and Other Pacific Islander (OPI) population category includes people who indicated their race(s) as Native Hawaiian, Guamanian/Chamorro, Samoan, Tahitian, Tongan, Tokelauan, Micronesian (Marshallese, Palauan, and Chuukese), and Melanesian (Fijian, Guinean, and Solomon Islander). In 2013, 21% of the total state population of Hawaii reported being at least part-Native Hawaiian (Pew Research Center analysis of U.S. Census Bureau data, 2013). Nationally, Native Hawaiian and OPI students are the only racial/ethnic group in which more than half of those receiving special education services are identified with LD (U.S. Department of Education, 2013). Furthermore, according to the Office of Special Education Programs (2014), Native Hawaiian and OPI students had the lowest percentage (53.9%) of all students ages 6 through 21 served under IDEA who spend more than 80% or more of the day in general education classes. Nationwide, 67.2% of all students identified with LD spend 80% or more of the day in general education settings.

In 2014, Kamehameha Schools released a Native Hawaiian Educational Assessment titled Ka Huaka’i offering an in-depth analysis of Native Hawaiian education and well-being.
According to the executive summary, Native Hawaiian students’ reading proficiency rates ranged from a low of 53.4% in 5th grade to a high of 58.6% in 10th grade compared with 63.1% to 69.7% statewide averages at the same grade levels statewide. Native Hawaiian students’ math proficiency rates ranged from a low of 23.4% in 10th grade to a high of 49.1% in 3rd grade compared with 38.2% to 57.7% statewide averages at the same grade levels statewide. The report also indicated that less than three in four Native Hawaiians completed high school within four years, compared with four in five public school students statewide. Native Hawaiians in the public school system had the lowest rates of timely graduation of all the major ethnic groups in the state. Compared with Hawaii’s other major ethnic groups, Native Hawaiians were the least likely to be enrolled in college. A total of 25.7% of Native Hawaiian young adults were enrolled in college, compared with 35.7% statewide.

Native Hawaiian populations share patterns with other CLD populations who experience lower educational success and long-term negative social outcomes. Overall, Native Hawaiians have the lowest timely graduation rates of all major ethnic groups in Hawaii public schools. According to 2008 HDOE data, approximately 70% of Native Hawaiians graduated in four years compared with 78% statewide. The correlation between drop-out rates and delinquency is also reflected in the Native Hawaiian population as Hawaiians have the highest arrest rate for violent crimes, aggravated assault, and robbery among all other major ethnic groups. In 2013, the unemployment rate was 10.2% for Native Hawaiians compared to 5.2% for Asians and 6.5% for Whites (U.S. Bureau of Labor Statistics, 2013). Despite startling rates of poor school performance, incarceration, and unemployment, Native Hawaiians are a highly under-researched subgroup of the CLD population in the area of teachers’ attributions. In order to better understand the domino effect
of academic failure and negative lifestyle choices, it is important to explore how teachers’ attributions may contribute to the problematic outcomes of these groups of students.

**The Role of Attribution on Student Outcomes**

Attribution theory involves the process by which people explain the cause of behaviors and events (Kelley, 1967). This theory presents an important method for examining and understanding motivation in academic settings. Teachers have a significant role in shaping students’ attributions of their own behaviors (e.g., successes, failures) through comments, feedback, and the types of praise offered during instruction (Graham, 1997). These comments can have important long-term effects on student learning and motivation. A student who consistently learns to attribute failures to a lack of ability is unlikely to continue to be motivated to achieve in the future. For example, if a student fails a test, they attribute that failure to a particular cause, such as lack of ability, lack of effort, or poor instruction. The attribution they select will affect their subsequent motivation to engage in similar learning activities. Those who attribute their failure to the teacher’s poor instruction may have higher motivation in future endeavors than those who attribute their failure to their own lack of innate ability (Nicholls, 1990).

Teachers’ attributions are defined by how they link an outcome to a particular cause, which results in some affective or emotional change (Weiner, 1984). Tollefson (1988) argued that teachers who attribute student success to a stable factor such as ability increase their expectations for success and therefore promote greater task persistence in those students. Attributing failures to student ability may decrease the teacher’s expectancy for future success and students’ task persistence. When teachers have an external locus of control regarding student outcomes, they do not attribute student failure to deficits in their own instruction, but
instead assume the students have control over their own failure. Furthermore, when teachers attribute internal student characteristics as the source for failure, this can foster a sense of hopelessness and resignation in students because they receive the message that there is nothing they can do about it. The consequences of negative teacher attributions have been described in multiple studies on how teachers’ low expectations directly impact their instructional practices (Entwisle & Alexander, 1988; Ferguson, 1998; Rist, 2000). These studies reported that teachers less often called on, offered positive feedback, provided direct instruction and interaction, presented challenging questions, and taught advanced reading skills to students for whom they held lower expectations. Moreover, teachers more often explicitly corrected errors and offered non-solicited assistance to these students.

Teachers’ attributions, informed by their assumptions about student characteristics (i.e., behavior, language use, SES), can impact student motivation and performance (Anderson, 1991). External attributions infer that a person is behaving in a certain way or that an event is due to the situation that they are in. Internal attributions infer that a person is behaving in a certain way or that an event is due to factors related to the person. Teachers who presume failure is an internal attribution tend to hold low expectancies for students, which can translate into decreased achievement levels. Hassenpflug (1994) asserted that a teacher with high expectations could raise their students’ expectations and have a positive effect on students’ actual achievement levels. She proposed “students actually can and will do better if quality work is expected of them” (Hassenpflug, 1994, p. 161). The proposed association between teacher attributions and student outcomes suggests the need for research on differential teacher attributions for populations that have historically performed well below their peers.
Statement of the Problem

Teacher attributions can have detrimental implications for academic achievement and subsequent life outcomes of their students if students presume that their teachers’ pity and low expectations are valid indicators of their potential. When teachers attribute failure to internal, uncontrollable factors that lie within the student, they are more likely to send cues to the student that he/she is not capable of being successful (Florea, 2007). Poulou and Norwich (2000) described the relation between teachers’ attributions and subsequent actions as follows:

Teachers’ ideas about the causes of students’ behavior in turn affect the attitudes they adopt towards their students, their dispositions, and the eventual decisions to help them overcome their difficulties. The extent to which they believe they are capable of influencing students’ performance, affects their enthusiasm and persistence in working with them. (p. 560)

Multiple researchers have used vignette-based studies of hypothetical male students described with or without LD to examine patterns in teachers’ attributional responses to student failure (e.g., failing a test in class). Participants have been typically asked to rate their (a) evaluative feedback, (b) emotional reactions (frustration and empathy), and (c) expectations of future academic/behavioral failure toward the students described in the vignettes. These studies found that teachers tended to reward boys with LD more than their non-LD peers following failure, expressed less anger and more pity toward the boys with LD, and held higher expectations that boys with LD will fail in the future (Clark, 1997; Juvonen, 2000; Lackaye & Margalit, 2006; Reyna, 2000; Reyna & Weiner, 2001; Stipek, 2002; Tournaki, 2003). However, little research has been conducted on teacher attributions towards CLD students.
(specifically, Native Hawaiians), (b) the possible interaction of LD and CLD status on teachers’ attributions, (c) teachers’ attributions toward student behavior, and (d) pre-service teachers attributions.

Chang and Sue (2003) conducted the only attributional study I identified that examined the role of a child’s race (African American, Asian American, or Caucasian) on teachers’ perception of “typical” student behaviors. Their study revealed teachers were most likely to identify anxious/overcontrolled traits (being anxious to please, afraid of making mistakes, feeling the need to be perfect, worrying, being too neat, clinging to adults, and being shy and timid) as more typical of Asian American students compared to Caucasian or African-American students. However, contrary to their prediction, teachers did not identify aggressive/under-controlled traits (being disobedient and easily frustrated, disrupting the class, talking out of turn, demanding attention, sulking and fidgeting) as more typical of African-American students.

Native Hawaiians have not appeared in any attribution literature on students with or without LD even though Native Hawaiian/OPI youth make up 50.3% of students in the LD disability category in Hawaii compared to just 11.2% of their Caucasian peers (U.S. Department of Education, 2013). In addition, despite the large representation of CLD populations in the LD category, there are no studies on attributions of teachers towards CLD students who are LD and who are not LD, which may offer important information about a possible interaction effect of LD and CLD status on teacher attributions. Furthermore, research on the attributions of student behavior warrants special attention in light of recent national reports indicating disparities in how behavioral problems are handled by schools for students of color and students with disabilities. Findings from the few investigations looking
at student behavioral problems reveal that teachers most often attribute student misbehavior to individual student and out-of-school problems (Atici & Merry, 2001; Ho, 2004; Hughes, Barker, Kemenoff, & Hart, 1993; Kulinna, 2007; Mavropoulou & Padeliadu, 2002; Turnuklu & Galton, 2001). However, there are few corroborating studies examining teachers’ attributions towards problematic behaviors of students with LD and/or CLD students.

Finally, examining pre-service teachers’ attributions toward CLD students is especially important in order to determine specific culturally responsive teaching competencies that may need to be further developed in teacher education programs. In Fall 2014, the National Center for Education Statistics (NCES) reported the overall number of CLD students in public K-12 classrooms (50.3%) surpassed the number of Caucasian students. In response to the increasingly diverse student demographics in American public schools, Husu, Toom, and Patrikainen (2008) advocate for critical self-reflection as a disciplined practice of systematic inquiry that promotes multicultural competencies for teaching and learning. While pre-service teachers are developing their craft, it is especially important for them to challenge their own misconceptions that may lead to discrimination based on cultural differences, reflect on assumptions and biases, and create a classroom environment sensitive to the cultural background and academic needs of all students (Nieto, Bode, Kang, & Raible, 2008).

While the nation’s public schools experience a monumental shift in socio-cultural composition, Hawaii continues to be one of the country’s most culturally diverse states in the U.S. with 37.7% identifying as Asian, 23.1% identifying with two or more races, 10% identifying as Native Hawaiian and OPI, and only 26.6% of the population identifying as Caucasian (U.S. Census Data, 2013). The state, known as the melting pot for its rich cultural
diversity, reported about 71% of just-hired HDOE teachers were new college graduates and had no previous teaching experience (HDOE Human Resources Department, 2010). The HDOE also reported that the majority of emergency hire positions and new vacancies are for special education teachers in hard-to-staff schools. These schools typically serve disproportionately high percentages of students with special needs, as well as high Native Hawaiian student populations. Also, according to Bandura’s (1997) theory of self-efficacy, perceptions are most malleable early in learning. Therefore, evaluating pre-service teacher attributes for student outcomes during the formative period of their teacher preparation could be highly influential in shaping positive attitudes and behaviors towards all students. A study on attributions of pre-service teachers in a state as uniquely diverse as Hawaii will reveal important information about how future teachers might attribute academic failure and behavioral challenges towards students classified with LD and students of Native Hawaiian backgrounds.

**Purpose Statement**

The purpose of this study is to investigate pre-service teachers’ attributional responses for academic failure and behavioral challenges of hypothetical students described as (a) having and not having LD and (b) Caucasian or Native Hawaiian.

**Research Questions**

**Research Question 1:** To what extent does the presence of an LD label influence the attributions of pre-service teachers to a hypothetical student’s failure on a test or behavioral challenge on (a) teacher control, (b) emotional reactions (frustration and empathy), and (c) expectations of future academic/behavioral failure.
Research Question 2: To what extent does a student’s identification as a Native Hawaiian or Caucasian influence the attributions of pre-service teachers to a hypothetical student’s failure on a test or behavioral challenge on (a) teacher control, (b) emotional reactions (frustration and empathy), and (c) expectations of future academic/behavioral failure.

Null Hypotheses

Null Hypothesis 1: The presence of an LD label does not influence pre-service teachers’ attributions regarding a hypothetical student’s failure on a test or behavioral challenge on (a) teacher control, (b) emotional reactions (frustration and empathy), and (c) expectations of future academic/behavioral failure.

Null Hypothesis 2: A student’s identification as Native Hawaiian or Caucasian does not influence pre-service teachers’ attributions regarding a hypothetical student’s failure on a test or behavioral challenge on (a) teacher control, (b) emotional reactions (frustration and empathy), and (c) expectations of future academic/behavioral failure.

Definitions

1. Learning Disability: “A type of neurodevelopmental disorder that impedes the ability to learn or use specific academic skills (e.g., reading, writing, or arithmetic), which are the foundation for other academic learning. The learning difficulties are ‘unexpected’ in that other aspects of development seem to be fine. Early signs of learning difficulties may appear in the preschool years (e.g., difficulty learning names of letters or counting objects), but they can only be diagnosed reliably after starting formal education. SLD is understood to be a cross-cultural and chronic condition that typically persists into adulthood, albeit with cultural
differences and developmental changes in the way the learning difficulties manifest.”

2. **Culturally and Linguistically Diverse Students**: “Students who may be distinguished from the mainstream culture by ethnicity, social class, and/or language. As such, this term may refer to students who are from racial/ethnic minority groups, students whose primary language is not English, and students who are from low-income or poor households” (Perez, 1998, p. 6).

3. **Attribution Theory**: How a social perceiver uses information to arrive at causal explanations for events. It examines what information is gathered and how it is combined to form a causal judgment (Fiske & Taylor, 1991). Attribution is described as a three-stage process: (a) behavior is observed, (b) behavior is determined to be deliberate, and (c) behavior is attributed to internal or external causes. Causal dimensions of behavior are (a) locus of control, (b) stability, and (c) controllability (Weiner, 1974).
CHAPTER 2. LITERATURE REVIEW

Introduction

Attribution theory has become a major research paradigm of social psychology and has been widely applied in education, law, clinical psychology, and the mental health domain. Attribution principles have been utilized to help explain how educators shape beliefs about their students since the early 1970s. This review will focus on five key topics that emerged frequently in the literature on how educators’ perceptions impact student outcomes: the role of teacher attributions on student academic performance, attributional principles applied to student behavioral problems, teachers’ perceptions of students with LD, the role of teachers’ attributions in propagating learned helplessness, and the potential association between teacher attributions and overrepresentation of CLD students in special education. The first section will discuss the role of teacher attributions on student academic performance.

Attribution Theory Applied to Academic Achievement

Attribution refers to the perceptions individuals have about the cause of their own or another’s behavior. The seminal research of Rosenthal and Jacobson (1968) revealed that teachers’ expectations of their students can have a profound impact on shaping student achievement. Subsequently, studies on self-fulfilling prophecies became a major topic in social psychology. Weiner’s (1979) model of achievement-related behavior describes causal perceptions of success and failure and has been replicated by many researchers to reveal how attributions relate to learning in school (e.g., Linnenbrink & Pintrich, 2002). Weiner’s first model looked at intrapersonal theory, which described how people explain their own successes and failures. Weiner’s second model of interpersonal theory addressed how people explain other’s successes and failure (Tollefson, 2000).
Weiner (1974) proposed three motivational dimensions to attribution theory: locus of causality, controllability, and stability. The locus of causality dimension looks at whether the cause is internal or external to the person. Those with a greater internal locus of control believe outcomes are controllable by their own behaviors (e.g., studying hard), whereas those with greater external locus of control believe their outcomes are impacted more by factors outside of their control (e.g., poorly designed test). Controllability refers to how much control a person has over the cause. Causes can be controllable (e.g., effort) or uncontrollable (e.g., ability). Stability defines causes as either consistent or temporary. Stable causes are more permanent with respect to future predictions.

Researchers have explored how teachers’ feedback influences students’ self-perception of their abilities under experimental conditions (Eccles & Wigfield, 1985; Jussim, Soffin, Brown, Ley, & Kohlhepp, 1992). Naturalistic studies also demonstrated how teachers’ lower expectations of students led to students’ low expectations of their own performance (Eccles & Wigfield, 1985; Parsons, Kaczala, & Meece, 1982; Vallerand, Fortier, & Gray, 1997). Even more revealing, longitudinal studies found that teachers’ subconscious manipulation of students’ self-concepts affects students’ long-term educational and occupational opportunities (Harris & Rosenthal, 1985; Rosenthal & Rubin, 1978).

Reviews of the literature substantiate that teachers’ attributions can significantly influence student motivation and performance (Woodcock & Vialle, 2010). Rosenthal and Jacobsen (1968) conducted a groundbreaking study on the effects of teachers’ preconceived notions and expectations of their students. This phenomenon has been referred to as the Pygmalion Effect after a play in which a vagabond is transformed into a proper socialite simply by adapting her environment and making the individual believe she should behave,
dress, and interact according to new expectations. In their 1968 study, Rosenthal and Jacobsen applied the Pygmalion Effect in an educational context. In the beginning of the school year, the investigators randomly selected a group of students and informed their classroom teacher that these students scored highest on an intellectual capability assessment. As a result, teachers treated these particular students differently by giving them extra time to respond to questions, calling on them more frequently, offering praise, encouraging persistence when they struggled, and asking more advanced higher order thinking questions. By the end of the school year, the students who were hand-picked as the “gifted” children academically outperformed their peers who were not identified as such. This seminal study suggested that when teachers attribute intelligence as an intrinsic gift, they hold higher expectations for student behavior and achievement that, in turn, impact teacher-student interactions and positively influence student learning opportunities and outcomes.


1. Early in the school year, teachers’ attributions for student outcomes lead them to form differential expectations for student behavior and achievement.

2. Consistent with these differential expectations, teachers behave differently toward various students.
3. This treatment tells students something about how they are expected to behave in the classroom and perform on academic tasks.

4. If the teacher treatment is consistent over time and if students do not actively resist or change it, it will likely affect their self-concepts, achievement motivation, levels of aspiration, classroom conduct, and interactions with the teacher.

5. These effects generally will complement and reinforce the teacher’s expectations, so that students will come to conform to these expectations more than they might have otherwise.

6. Ultimately, this will affect student achievement and other outcomes. High expectation students will be led to achieve at or near their potential, but low expectation students will not gain as much as they could have gained if taught differently (Good, 1987, p. 33).

Weiner and Kukla (1970) designed one of the most cited attribution studies that has been replicated for decades in educational research. Their observational study demonstrated that teachers’ emotions towards particular students corresponded with the evaluative feedback they offered students, whether they gave or withheld help, and whether they offered praise or blame. The typical attributional study entails the determination of participants’ rating of causal attributions originally posed in Weiner’s model. The vast majority of the studies presents a hypothetical behavior (e.g., failure on a test) then asks participants to rate their perceptions of the internal/external, controllable/uncontrollable, and stable/unstable nature of the behavior. In most studies the different attributional dimensions are measured using:

1. Locus of control: Type of feedback is used to determine whether the participant attributes locus of control as more internal or external by selecting from a scale of
1-5 sad faces to indicate negative feedback or 1-5 happy faces to indicate positive feedback. Selecting more sad faces indicates a higher external locus of control.

2. Controllability: Emotional reactions are used to determine how much control the participant believes the student has over his/her outcomes as measured by selecting from a scale of very low to very high levels of pity and a scale of very low to very high levels of anger.

3. Stability: Rating expectancy of future failure on scales of very likely to very unlikely are used to measure whether the participant believes the student outcomes are stable conditions.

The causal dimension deals with whether the cause of the outcome is internal or external and therefore, the type of feedback tended to be more positive if the teacher believed the failure was related to an external cause. The stability dimension deals with whether the outcome was caused by a stable or unstable condition. If teachers believed their students’ failure was due to a stable condition (intrinsic lower cognitive ability) then they were more likely to expect future failure. The controllability dimension is related to whether the outcome was controllable (such as lack of effort) or uncontrollable (such as lack of ability) and teachers tended to react with greater levels of pity for those they believed lacked ability, and had greater anger for those who they believed lacked effort. The following section will review some of the early seminal studies on teacher attribution.

Rothbart, Dalfen, and Barrett (1971) constructed a simulated classroom with 13 female college seniors (in a teacher education program) and 52 high school students. The teacher trainees discussed academic material with four students, two of whom were randomly designated as “lacking in intellectual potential” (p. 36). Measures were obtained for (a) the
amount of attention given to the high- and low-expectation students, (b) the amount of verbal and gestural encouragement (reinforcement) given to high- and low-expectation students, (c) the amount of talking done by high- and low-expectation students, and (d) the teacher’s evaluation of both groups of students. The study found that teachers were more attentive to high-expectation students, but directed the same amount of reinforcement to both groups. Students in the high-expectation group talked more, presumably as a consequence of the teacher’s greater attention. Teachers also evaluated the low-expectation students as less intelligent, as having less potential for future success, and as having a higher need for approval.

Martinek (1988) conducted a study on the patterns of student-perceived and observed teaching behaviors directed to high and low expectancy students and determined how students attribute causes to the teaching behaviors. Eleven elementary classroom teachers and their second and third-grade classes participated in the study. Twenty-seven high expectancy and 33 low expectancy students were identified by having the teachers rate their students in terms of expected levels of performance for the school year. Trained observers recorded three types of teacher feedback: (a) praise/encouragement, (b) skill correction, and (c) corrective behavior feedback. Students were also interviewed to see whether their perceptions of the teachers’ actions were consistent with the coded dyadic interactions. In addition, interviewers asked the students to describe the causes for the teacher’s actions. Each cause was classified into one of four attributional categories: (a) personal causes, (b) teacher causes, (c) environmental causes, and (d) complex causes. Attributional data revealed that low expectancy students tended to attribute corrective behavior feedback to personal causes much more than high expectancy students.
Tollefson and Chen (1988) examined attributional beliefs in relation to the educational outcomes of students in China. They compared mean scores on expectancy, affective, and behavioral variables of 58 male and 103 female teachers assigned to read protocols of students (Grades K–12) requesting help because they “didn’t understand the material presented in class” (p. 63). Analysis compared mean scores on expectancy, affective, and behavioral variables of teachers. Vignettes were arranged along the controllability dimensions so that the reasons for requesting help ranged from an uncontrollable factor (low ability) through a short-term uncontrollable factor (illness) to a controllable factor (low effort). Each vignette had an introductory statement: “A student asks for additional help and explanation of the material that you presented in class explaining that he/she did not understand the material.” Multivariate analysis of variance (MANOVA) indicated a significant difference in teachers’ responses to the three vignettes. Teachers were asked whether they gave higher ratings on liking, praising, and helping, and lower ratings on expectancy of success when student failure was attributed to low ability, illness, or low effort. Key findings indicated participants would be most willing to help students with low ability, with low expectation of success.

Important findings from key attribution studies on academic achievement included:

1. Teacher offered more positive feedback for students who they considered to have lower ability levels and more negative feedback for those they believed had higher capability.

2. Teachers had greater pity for students of low ability and greater frustration for those with perceived high ability.
3. Teachers had higher rates of expectancy for future failure for those students whom they believed had lower ability.

In addition to the literature on teachers’ attributions for academic achievement, attributional principles have also been applied to behavioral problems to a lesser extent.

**Attribution Theory Applied to Behavioral Challenges**

Predictions based on attribution theory are broadly supported in studies on academic failure, however, there is minimal literature on the attribution of teachers towards students with LD in behavioral contexts. The most commonly reported student misbehaviors are minor infractions that occur on a daily basis such as talking and not paying attention (Kulinna, Cothran, & Regualos, 2006; Wheldall & Merrett, 1988). Although these offenses may be classified as minor, teachers report spending excessive time handling student misbehavior (Houghton, Wheldall, & Merrett, 1988) and dealing with such misbehaviors has been identified as a leading contributor to teacher burnout (Bibou-Nakou, Stogiannidou, & Kiosseoglou, 1999).

Medway (1979) conducted two studies with a total of 54 teachers to examine classroom teachers’ attributions for students with severe behavioral problems in school. In both studies, teachers who had referred a student for psychological services were asked to assign causality for the referral problem. Teacher praise and criticism of referred students were examined as functions of causal attributions. Both studies show that teachers held student factors more responsible for classroom problems than teacher. Results also indicated that students who exhibited problematic behavior and were perceived as lacking motivation were criticized more often by their teachers.
Poulou and Norwich (2000) examined Greek teachers’ causal attributions, emotional and cognitive responses, coping strategies and suggestions for effective coping strategies with students with emotional and behavioral disorders (EBD). Participants included 391 elementary teachers from 60 public schools in Athens, Greece. Teachers completed an inventory presenting six vignettes of students with EBD, varying in the type of difficulty (conduct or emotional) and the degree of severity for teachers to handle them (mild or severe). Results revealed that teachers perceived school and teacher factors as causal of EBD. Teachers also expressed high levels of sympathy for these children, and perceived themselves as responsible, self-efficacious, and inclined to help them.

Ho (2004) compared Australian and Chinese teachers’ causal attributions for student misbehavior. The vignettes did not include variations of students from different cultural and linguistic backgrounds or students with or without LD. A total of 204 Australian teachers and 269 Chinese teachers with more than four years of teaching experience were presented with six vignettes of common problem behaviors (determined through focus group interviews of 24 teachers from both countries): daydreaming, not completing homework, talking in class, lesson disruption, bullying and rudeness to teacher. Participants completed a more comprehensive questionnaire compared to the previously described attribution studies in which they rated the importance of four causes (i.e., ability, effort, family, and teacher) of six student problem behaviors on 6-point Likert scale (1=totally unimportant to 6=very important). Results showed that both groups of teachers attributed misbehaviors most to student effort and least to teacher factors. Chinese teachers emphasized family factors more, whereas Australian teachers placed greater importance on ability. There was significant
variation in attribution patterns for different types of problems, with effort attribution being equally and strongly emphasized across cultural contexts and behaviors.

Wilner and Smith (2007) discussed the results of ten attribution studies on how caretakers respond to challenging behavior of people with intellectual disabilities outside school settings. Wilner and Smith outlined three pathway predictions based on attribution theory describing the association between their client’s perceived stability/control and their subsequent emotional reaction and likelihood of performing helping behaviors. The pathway with the most empirical support described that when participants perceived their clients had lower control over their challenging behaviors, they felt less anger towards their clients, and reported greater likelihood of offering helping behaviors (Dagnan et al., 1998; Jones & Hastings 2003; McGuinness & Dagnan 2001; Sharrock et al., 1990; Stanley & Standen, 2000; Wanless & Jahoda 2002).

Based on findings from these studies examining attributions towards problem behaviors, most participants attributed misbehavior to internal student factors as opposed to teacher or caretaker factors. Nevertheless, there is a relatively small amount of studies on the attributions of educators toward problematic behaviors of students with LD even though research has consistently found a higher-than-normal rate of behavioral problems in the classroom among students with LD (Atkins, Cullinan, Kutash, & Weaver, 2008). In fact, Kavale and Forness (1996) conducted a review of 152 different studies and determined that 75% of students with LD exhibit deficits in social skills. As exemplified by the attributional studies reviewed, attribution theory has served as the foundation for many social research studies on achievement and behavior, and therefore offers a framework to explore the disproportionately low academic and behavioral outcomes of students with LD.
Teachers’ Attributions for Students with Learning Disabilities

As the inclusion of students with special needs has grown in the modern American classroom, studies on how teachers perceive of working with students with LD have increased (Austin, 2001; Cook, 2001; Haager, Watson, & Willows, 1995; Schumm, Vaughn, Gordon, & Rothlein, 1994). Eccles and Wigfield (1985) conducted an observational study with an inverse approach to the Pygmalion Effect, in which they found that teachers’ low expectations of their students correlated with students’ low expectations of themselves (termed the Golem Effect).

Clark (1997) conducted an influential teacher attribution study revealing differential perceptions and treatment of students with LD. Ninety-seven elementary-school general education teachers (84 women and 13 men) rated their attributional responses to test failures of hypothetical boys with and without LD. Eight vignettes were presented describing a hypothetical boy who had just taken a typical classroom test and failed. The vignettes did not specifically identify the cause of the hypothetical boys’ failures in order to stimulate causal explanations by the participants. The description of each vignette provided three types of information: a statement of student ability, the typical pattern of effort expended by the student in the classroom, and information on academic performance. The descriptions identified half of the boys as LD and half as NLD, half as high ability and half as low ability, and, half as expending high effort and half as expending low effort, but specific terms were not used. The boys were matched on ability (high/low), on typical effort (high/low), and the presence/absence of a LD (LD/NLD). A matrix of 2 (ability) by 2 (effort) by 2 (LD/NLD) were formed. A 2 (N/LD) by 2 (ability) by 2 (effort) multivariate analysis of variance with repeated measures was conducted for the four dependent measures (feedback, frustration, sympathy, and expectation of future failure). Results indicated that teachers believed students
with LD would fail more than those without LD, deserve more empathy and less anger than those without LD, and should be rewarded more and punished less than those without LD.

Clark and Artiles (2000) later conducted a cross-national study that examined patterns in teachers’ attributional responses to outcomes of students with and without LD. Teachers from elementary schools in California (n = 97) and Guatemala City (n = 59) were given a set of eight vignettes describing hypothetical male students, four identified as LD, and four as non-LD. Teachers were instructed to assume each child had just failed a test. The vignettes provided three types of information: a statement of student ability (high or low), typical effort (high or low), and disability status (LD or non-LD). Three types of teacher responses were examined: evaluative feedback (reward or punishment), emotional reactions (anger and pity), and expectations of future failure. Results showed that teachers rewarded students with LD more, felt less anger and more pity, and held greater expectations for future failure than for non-LD students. Punishment and anger responses towards students with LD were higher in U.S. teachers, but no significant differences were found for expectations of future failure between U.S. and Guatemalan teachers.

Zhang, Zhao, Shen, and Geng (2007) conducted a similar study with 167 elementary school teachers and 166 secondary school teachers in China. They found that the teachers tended to reward low ability and high effort students without LD more than low ability and low effort students with and without LD, were angrier to low effort students with and without LD than high effort students, and expected more failure to low ability and low effort students without LD than low ability and low effort students with LD. In particular, elementary school teachers believed high ability and low effort students without LD would fail more than high ability and low effort students with LD in the future. Zhang and colleagues concluded that
Chinese teachers were less generous than Western teachers to students with LD. Further, they might perceive LD as an unstable cause, which can enhance students’ motivation.

Brady and Woolfson (2008) explored the relationship between teachers’ role, self-efficacy, attitudes towards people with disabilities, teaching experience and training, on teachers’ attributions for children’s difficulties in learning. One hundred and eighteen primary school teachers (44 general education teachers, 33 learning support specialists, and 41 special education teachers) completed the short form of the Teachers’ Sense of Efficacy Scale, the Interaction with Disabled Persons Scale (IDP), and the Teacher Attribution Scale. Analyses revealed that teachers held strong feelings of sympathy towards individuals with disabilities, which predicted stable attributions about learning difficulties. Years of experience with teaching children with special needs and teaching efficacy positively predicted external locus of causality attributions. However, teacher training was not found to have an impact on attributions.

Woodcock and Jiang (2012) investigated to what extent Chinese pre-service teachers’ knowledge of the presence or absence of a LD would influence: (a) the feedback given to a hypothetical boy based on his ability and the effort expended, (b) the frustration and sympathy felt towards each boy, and (c) the future expectations held for each boy. Participants were 101 pre-service teachers (17 male and 84 female) drawn from a local vocational university. Methods and analysis were adapted from Clark’s 1997 study, however their results indicated the only significant effect regarding LD status was sympathy. Pre-service teachers reported higher levels of sympathy towards students with LD than non-LD counterparts. With the exception of sympathy, LD status did not generally influence Chinese pre-service teachers’ responses to students’ academic failure. The greatest frustration and most negative feedback
were assigned to the low effort students which may suggest Chinese pre-service teachers perceived failure to be within the student’s control and therefore held them responsible.

Multiple studies examining participants’ attributions for students with LD continued to consistently show that teachers react to student failure with an emotional response of anger towards students they believed had high ability, but they felt pity towards those students they believed had lower inherent ability (Georgiou et al., 2002; Juvonen, 2000; Reyna, 2000; Reyna & Weiner, 2001; Stipek, 2002). Additionally, students interpreted that their teachers’ emotional reactions of pity to mean the teachers had lower expectations of them because they presumed that the outcome was uncontrollable and, therefore, they had low ability (Clark, 1997; Graham, 1984; Graham, Doubleday, & Guarino, 1984; Juvonen, 2000; Reyna, 2000; Reyna & Weiner, 2001).

The label of LD alone has an impact on the expectations teachers hold for their students. Tournaki (2003) found that middle school teachers predicted greater academic success when the student was reading below average level without a label attached than those with the LD label. Research has shown that teachers tend to misunderstand students with LD, and judge students based on the LD label rather than the characteristics and needs of these students (Lackaye & Margalit, 2006; Tournaki, 2003). The literature suggests that teachers possibly misunderstand students with LD and judge their potential and limitations based on the disability label rather than the needs of students. While teachers’ differential attributions towards students with LD may simply stem from lack of knowledge, their subsequent responses and interactions with these students can have lifelong implications.

The literature on teacher attributions for academic failure of students with LD is consistent with results from previous studies on students with low ability or perceived low
motivation. In addition to examining academic or behavioral discrepancies for students with disabilities or perceived ability/motivation levels, there is a critical need to explore how teacher attributions may impact the growing achievement gap in America between students from CLD backgrounds and their Caucasian and certain Asian American counterparts (Carter & Welner, 2013; Elias, White, & Stepney, 2014; Howard, 2015; Simms, 2012). The following section will discuss the existing literature on teacher attributions towards CLD students.

**Teachers’ Attributions Towards Culturally and Linguistically Diverse Students**

While attribution theory has served as a theoretical framework for a wide range of research on student achievement, very few studies explore the impact of a student’s cultural and linguistic background on teacher attributions for failure or success. Tom and Cooper (1986) examined teachers’ attributions for the performance of six students who varied in social class (middle vs. lower), race (white vs. Asian-American), and gender. Teachers were provided with open-ended responses to questions soliciting the causes of student success and failure after reading experimentally manipulated record cards. The results revealed that teachers thought student-related factors influenced success more than failure and teacher-related factors influenced failure more than success. Teachers were also more likely to “count” the successes and “discount” the failures of middle-class white females compared to students of Asian backgrounds.

Chang and Sue (2003) conducted the only recent attribution study this author identified examining how race influenced teachers ratings of children’s behavior. They presented 197 Southern California teachers with three vignettes (“overcontrolled,” “undercontrolled,” and “normal”), systematically paired with a photograph of a male child (African American, Asian American, or Caucasian). Respondents rated the seriousness,
referability, and typicality of the behavior; the perceived quality of the child’s family life; academic ability and performance; and causal dimensions (e.g., locus of control, stability, and controllability). When participants read the vignette of an over-controlled child (being anxious to please and afraid of making mistakes, feeling the need to be perfect, worrying, being too neat, clinging to adults, and being shy and timid) accompanied by a photo of an Asian American child, they rated this as significantly more typical behavior compared to when the over-controlled vignette was paired with African American or Caucasian students. When presented with a vignette of a child with under-controlled traits (being disobedient and easily frustrated, disrupting the class, talking out of turn, demanding attention, sulking and fidgeting) participants rated these behaviors as significantly less typical of Asian American students compared to African American or Caucasian students. Although there are limited studies on teacher attributions towards culturally and linguistically diverse students, the few existing studies suggest that teachers believe inherent student-related factors influence their success or failure in school more than teacher-related factors. I will discuss the impact of teachers’ attributions on fostering learned helplessness in students in the following section.

**Learned Helplessness**

Reinforcing the belief that academic failure is attributed to internal, uncontrollable traits can have detrimental implications for future achievement among students with LD who often feel a sense of helplessness (Heiman, 2006). The term *learned helplessness* was first used by Seligman, Maier, and Geer (1968) to refer to the learning or perception of independence between the emitted response of the organism and the presentation and/or withdrawal of aversive events. In their research, dogs were given unavoidable electric shocks when they attempted to escape and all of them eventually became passive even when they did
have an opportunity to safely escape. Seligman et al. theorized that they were able to manipulate the animals to believe they cannot control their situation, and therefore they do not take any action to avoid the negative stimulus. Learned helplessness theory has been applied in mental health and educational contexts in describing a perceived absence of control over the outcome of a situation (Seligman, 1975).

The evaluative feedback children receive from adults is one of the primary ways in which a child learns to explain their failure. In a study by Dweck (1975), children identified with attributes of learned helplessness were divided into two groups (attribution retraining and success only) and baseline rates on math problems were obtained. The children in the experimental group were taught to make effort statements, referred to as attribution retraining. The children in the success-only group were given problems that they could easily solve. During attribution retraining, the experimenter told the child, “You’re not trying hard enough.” Results revealed that following training, students in the Success Only treatment continued to evidence a severe deterioration in performance after failure, while students in the Attribution Retraining treatment maintained or improved their performance. In addition, students in the latter condition showed a statistically significant increase in the degree to which they emphasized insufficient motivation versus ability as a determinant of failure. The study suggests that students will perform better when faced with challenges if they perceive that previous failure is due to lack of effort.

This concept of learned helplessness has been used to explain the strong negative reactions certain children display when they experience failure. Early studies on children’s continued persistence with a task at which they have previously failed were related to internal statements they made to themselves about why they failed (Dweck, 1975; Dweck &
Reppucci, 1973). It appears that students’ attributions may become extensions of the attributions their teachers hold towards them. Those who receive frequent cues that their failure is due to non-malleable incompetence usually give up early on and/or lower their performance level. On the other hand, children who believe they are capable of mastery may be more likely to externalize criticism as constructive feedback that prompts them to change their performance strategy (Ames & Archer, 1988). Ultimately, a child who has acquired learned helplessness reacts to failure by lowering effort and/or avoidance of the task, while the mastery-oriented child is motivated to work harder (Long, Monoi, Harper, Knoublach, & Murphy, 2007).

Research supports the contention that when teachers attribute low student performance to intrinsic, uncontrollable and stable conditions, their attributions impact how they communicate to their students and how students begin to “learn” they are helpless. The concept of learned helplessness has widespread application, including how and why certain populations fail to thrive. In this next section I will describe the disproportionate representation of CLD students with LD and how differential treatment of this population may perpetuate the cycle of low academic achievement, delinquency, and poverty.

**Overrepresentation of Culturally and Linguistically Diverse Students with Learning Disabilities**

Overrepresentation of CLD students in special education and the quality of their educational experiences has been one of the most significant issues faced by the U.S. public school system for several decades. The prescribed evaluation procedures and the definitions of disability conditions in IDEA stipulate that children are not to be identified as disabled because of poor achievement due to environmental “disadvantage” or ethnic, linguistic, or
racial difference. However, from a legal perspective, evidence of a pattern of disproportionate representation has been sufficient to initiate policy action to reduce disproportionality.

Through the U.S. Office for Civil Rights (OCR), ethnic representation of students in special education has been monitored every two years at the state and local levels. Attention is being paid to the policy, procedures, and practices that may result in unequal, unfair treatment of students from different racial/ethnic groups (Coutinho & Oswald, 2004). Over the past three decades, teachers’ attributions of students’ academic and behavioral challenges in the classroom have been under scrutiny as one form of differential treatment of students from different cultural and linguistic backgrounds (Reyna, 2000; Woodcock & Vialle, 2011).

Waitoller, Artiles, and Cheney (2009) reviewed the overrepresentation research published between 1968 and 2006 and found that most of the research on LD has been framed in three ways: a sociodemographic model in which characteristics of individuals and contexts are examined, a critical perspective in which power issues related to race are addressed, and a framework that examines the role of various professional practices in the creation and maintenance of overrepresentation. Duran, Bos, Healey, Fletcher, Moll, and Ruiz (2011) attributed overrepresentation of Hispanic students to linguistic, cultural, economic, or other background characteristics that were misinterpreted as deviant or, more specifically, indicative or LD. These misinterpretations can be linked back to how teachers originally attribute academic failures or undesired behaviors that CLD students exhibit.

A key study conducted by Artiles, Aguirre-Munoz, and Abedi (1998) identified placement predictors in LD programs for Latino, African-American, and White students. They used 12 predictor variables from two key domains (student and family) and used placement data from a national database of eighth-grade students. They found that factors of
socioeconomic status (SES), gender, and limited English proficiency (LEP) predicted placement in LD programs for all ethnic groups. Similarly, Oswald, Coutinho, Best, and Singh (1999) analyzed district-level data on the proportion of students from low-socioeconomic status (SES) backgrounds and the proportion of minority students in the school population. They found that African American and Hispanic students were identified as having LD more often in low SES districts. Disproportionate percentages of CLD students and students from economically disadvantaged backgrounds represented in judgmental disabilities such as LD may suggest faulty referral and identification processes. Research consistently affirms that a student’s SES and race predict identification with LD, thereby suggesting a continued need for examination of why teachers may differentially ascribe their students’ outcomes.

In addition to CLD students having higher LD identification rates, there is also substantial evidence that CLD students with LD are segregated and excluded at higher rates. Artiles, Rueda, Salazar, and Higareda (2005) compared English learner placement patterns in special education in California and found that ELLs identified with LD were placed in more restricted environments at higher rates than non-ELLs with LD. Vincent, Sprague, and Tobin (2012) indicated that Hispanic, African American, and American Indian/Alaska Native students, as well as ELLs with LEP, are not only over-identified as having LD, but they also tend to experience disproportionately high disciplinary exclusions compared to students whose ethnic identity is non-Hispanic and whose racial identity is Asian or White. Their study examined data from all districts in a northwestern state of the United States reflecting disciplinary incidents leading to exclusion of students from the classroom. They found more severe disciplinary exclusions for students with LD and LEP compared to those only with LD.
Overrepresentation of CLD students in special education has been attributed to biases that inaccurately define minor behavioral problems, different speech patterns, or slower learning performance as disabilities. However, some researchers argue that health risks associated with poverty are actually more likely to influence higher percentages of minorities in special education. Phillips and Shonkoff (2000) were amongst the first to explain how impoverished living conditions cause toxic stress in children, which actually spikes hormonal activity, damages neural connections, weakens immune responses, and alters brain elements that affect memory, learning and emotional control. High stress factors such as poor pre/postnatal care, malnutrition, exposure to domestic violence and/or drug use, instability in parental employment, and inconsistent living arrangements were found to be more influential in predicting disability status than racial or ethnic background.

Morgan and colleagues (2015) conducted a study that looked at more than 21,000 students across the nation from when they started kindergarten in 1998 through eighth grade. The researchers looked at family poverty, race, language, and low birth weight to control for those factors. They examined the representation of different races in the disability categories of LD, emotional disturbance (ED), intellectual disability (ID), other health impairment (OHI), and speech impairment (SLI). The authors explained that minorities were much more likely to be exposed to health risks linked to poverty at a young age such as low birth weight or being exposed to lead, which can have consequences on cognitive growth. Therefore, the percentage of minority children who receive special education is larger than the percentage of minority children in the school population overall. The researchers pointed out that 35% of African American children in inner cities have elevated levels of lead in their blood, compared with just 4% of Caucasian children. Furthermore, African American children are
about twice as likely to be born prematurely, and far fewer African American and Latino children have health insurance or regularly visit doctors. The results showed that racial, ethnic, and language minority elementary- and middle-school students were actually less likely than otherwise similar Caucasian, English-speaking children to be identified as having disabilities and are disproportionately underrepresented in special education. African American children’s odds of identification with LD, SLI, ID, OHI, and ED were, respectively, 58%, 63%, 57%, 77%, and 64% lower than otherwise similar Caucasian children. Hispanic children’s odds of LD, SLI, or OHI were, respectively, 29%, 33%, and 73% lower than otherwise similar Caucasian children. Children from non-English-speaking households had odds of LD as well as SLI identification that were, respectively, 28% and 40% lower than otherwise similar children from English-speaking households. Children from families without health insurance were less likely to be identified as having SLI and children from families with lower levels of education and income were less likely to be identified as having OHI. The researchers attributed this underrepresentation to teachers, school psychologists, and other education professionals responding differently to Caucasian, English-speaking children and their parents. The researchers suggested education professionals should be more attentive to cultural and language barriers that may keep minority children with disabilities from being appropriately identified and serviced.

Analysis of Literature Base

Students with LD typically display delays in academic performance as well as age-appropriate social skill development (Brooks, Floyd, Robins, & Chan, 2014). Historically, students with LD and CLD students have experienced inferior long term educational outcomes and social well-being compared to their non-minority peers who are not identified
with disabilities. For example, disproportionately large percentages of CLD and LD populations do not enroll in postsecondary education, become incarcerated, and are unemployed (Cortiella & Horowitz, 2014). In order to reduce this discrepancy in quality of life, researchers have aimed to explore inequitable instructional delivery related to teacher attributions during school age years that has been linked to lower educational achievement and subsequent success. The literature examining teacher attitudes and attributions supports the hypothesis that teachers’ positive or negative perceptions of students can influence their subsequent emotional reactions and interactions with their students (Alderman, 2013; Becker, Goetz, Morger, & Ranellucci, 2014; Brophy, 2013). Overall, the research also affirms a strong correlation between teacher attitudes towards their students and their students’ outcomes (Riley & Ungerleider, 2012; Demanet & Van Houtte, 2012; Woodcock & Vialle, 2011). The following section will identify some of the key strengths and weaknesses of attributional research as well as areas for future research.

**Strengths of Attributional Research Base**

The instruments used in teachers’ attribution studies have typically demonstrated adequate reliability (Brady & Woolfson, 2008; Clark, 1997). Using questionnaires that involve Likert scale ratings to objectively measure attitudes enables a large sample size and can reduce reactive effects or desirability due to perceived anonymity. Manusov and Spitzber’s (2008) analysis of attribution theoretical framework found that it meets all of the criteria by which theories are evaluated for strength: explainability, generalizability, verifiability, and falsifiability. High internal validity of most of the studies, because of their experimental design (random assignment to groups), is also a critical strength. In this study, randomization assures that the researcher has not introduced bias into group assignment and
enhances the likelihood that the groups will be functionally equivalent. Randomized experimental design yields the most accurate analysis of the effect of the predictor variables. Randomization has been extensively used as a method of experimental control human clinical trials and other biological experiments because it prevents selection bias, ensures balance with respect to variables, and forms the basis for statistical tests (Suresh, 2011).

Experimental vignette methodology allows researchers to easily assess dependent variables including attitudes and behaviors, which can allow researchers to precisely manipulate and control independent variables. On the contrary, manipulating constructs and scenarios and background conditions are more difficult in observation experiments, which pose much larger threats to establishing reliability and validity, especially external validity. In addition, by systematically varying the theoretically important vignette characteristics, researchers can easily generate complex vignettes that can be easily presented to large groups of participants. Additionally, vignette based studies can supply standardized stimuli to all respondents, which enhances internal validity, measurement reliability, and ease of replication (Aquinas & Bradely, 2014). The use of vignettes enables the researcher to focus respondent attention upon specific features of different research questions, thereby improving construct validity. Nevertheless, attributional research is not without its limitations and the following section will discuss some of its weaknesses.

**Evaluation of Weaknesses**

Weiner’s attributional theory of achievement motivation is characterized by conceptual limitations, which may be ethnocentric and may not hold cross-culturally. For example, the epistemological assumption that the definitions of success and failure are universal is a primary flaw in the design of attribution studies (Duda & Allison, 1989).
Variations about what success and failure mean exist across cultures. These constructs are psychological states that are not always equated to objective competitive outcomes. Some cultures do not share the same competitive and individualistic ideas about achievement. For example, Asian societies are often characterized by more collectivist ideologies that prioritize the greater good of the whole over individual achievements (Choi, Nisbett, & Norenzayan, 1999). Therefore, an individual may not be characterized as successful based solely on individual achievements. Furthermore, some teachers may attribute failure to the individual, while others with a more collectivist culture may believe that the individual’s family and community are more accountable for the individual’s failure.

Another limitation of attribution study design is the use of locus of causality, stability, and controllability as the three primary dimensions of causality in achievement related contexts. These three dimensions are vague constructs that can vary significantly across cultures. There have not yet been qualitative analyses to determine underlying causal structures that may exist cross-culturally. A methodological issue with most of the attribution studies is that they ask participants to rate abstract constructs such as control, anger, or helping behavior in hypothetical incidents. Only one study examined the relationship between expressions of willingness to help and actual helping behavior (Bailey et al., 2006). The studies of challenging behavior that tested attribution theory as applied to helping behavior using real incidents or videos, rather than vignettes, actually resulted in the most negative emotional responses and predicted reactions (Bailey et al., 2006; Jones & Hastings 2003; Wanless & Jahoda 2002). However, two of these studies had few participants, which may pose a threat to external validity (Bailey et al., 2006; Wanless & Jahoda, 2002). The only study that directly compared staff responses to real incidents versus vignettes reported that
emotional responses to real incidents were more intense, and the relationships between attributional dimensions and helping responses were somewhat stronger with real incidents, but otherwise, the two situations were qualitatively similar (Wanless & Jahoda, 2002). These data suggest that vignettes may yield slightly different (i.e., less strong) attributions than real incidents, however they do prove to be a suitable method to study this problem. Although attribution research has been widely used in social psychology, the following section will review some of the gaps in the research literature.

Gaps in Teacher Attribution Research

Teachers’ attributions and expectations of students have been studied extensively, but there is a limited amount of research on pre-service teachers’ interpersonal attributions of students with LD (Woodcock & Vialle, 2010). Woolfolk-Hoy and Spero (2005) asserted that teachers’ beliefs, understandings, and expectations are unlikely to change throughout their teaching career. Therefore, identifying pre-service teachers’ perceptions while they are still developing their craft during coursework and teaching practicum is essential to preventing them from fostering learned helplessness in children with LD in the future. According to Shoho, Katims, and Wilks (1997), if pre-service teachers gain more knowledge about including students with disabilities and how their learning needs can be addressed, they may have less negative attitudes about working with children with LD.

In addition to a lack of studies targeting pre-service teachers, this field of research includes very few studies interpreting how teachers attribute behavioral problems of students with LD. Furthermore, the extant literature on attribution theory as applied to challenging behavior appears to differ from the application of attribution theory to failure in academics, where the predictions of the theory are broadly supported (Weiner 1985, 1986; Schmidt &
Weiner, 1988). The results of the few studies conducted on attributions of people towards others presenting behavioral problems involved participants in non-school settings, primarily involved individuals who worked individuals with ID, and generated findings that are inconsistent.

Multiple attribution studies looked at how responses differed based on differences between the participants (race, ethnicity, teaching background, and country of origin). However, few studies varied the characteristics of the students from Clark’s (1997) eight vignettes (with variations in ability level, effort level, and LD status) or the instrument (Likert scale ratings of positive/negative feedback, sympathy, frustration, and expectation of future failure) used to measure attributional responses. Adding a variable of a student’s cultural and linguistic background as well as LD status adds a layer to the current body of literature that is especially relevant in light of the increasing diversity in U.S. schools. Furthermore, a particular focus on Native Hawaiian and OPI students would also address a large gap in the teacher attribution literature on this racial/ethnic group with significantly lower academic success and post-school outcomes than their peers.

A review of teacher attribution research pertaining to students with LD revealed no studies have examined attributions towards Native Hawaiian students or behavioral challenges in the classroom, and very few have targeted pre-service teacher participants. The following section describes the participants, setting, research design, procedures and data analysis for conducting this research study.
CHAPTER 3. METHOD

The purpose of the study was to examine pre-service teachers’ attributional responses to students from CLD and non-CLD backgrounds who were identified with a LD and without a LD in hypothetical scenarios depicting academic and behavioral student failure. I investigated (a) to what extent do LD status and CLD background influence pre-service teachers’ evaluative feedback, emotional reactions (frustration and empathy), and expectations of future academic/behavioral failure; and (b) to what extent do LD and CLD status interact to influence attributions of pre-service teachers.

Participants

Eighty-five participants completed the vignette surveys. The following demographic data were collected through the five final questions on the Pre-Service Teacher Attribution Survey: gender, race they identify most strongly with, age, how many years of their Teacher Education Program (TEP) they have completed, and which TEP they are enrolled in. I selected participants from The University of Hawaii at Manoa (UHM) and Leeward Community College (LCC) because these two institutions currently have the largest enrollment of students in TEPs in Hawaii. There were 52 participants from Leeward Community College and 33 participants from UH Manoa; 73 female participants and 12 male participants; 44 Asian participants, 27 Native Hawaiian/OPI participants, 21 Caucasian participants, 4 Hispanic/Latino participants, 1 African American participant, and 1 Native American/Alaskan Native participant. The average age of participants was 37 years ($SD = 11.08$) with a range of 20 to 59 years. The average number of years enrolled in a teacher education program was 1.5 years ($SD = 1.53$) with a range of 0-5 years. Table 3.1 shows the demographics of the participants by teacher education program.
### Table 3.1.
**Pre-service Teacher Demographics**

<table>
<thead>
<tr>
<th>Teacher Education Program</th>
<th>Leeward Community College (n=52)</th>
<th>University of Hawaii at Manoa (n=33)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Min</td>
<td>Max</td>
</tr>
<tr>
<td>Female</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Age</td>
<td>20.00</td>
<td>59.00</td>
</tr>
<tr>
<td>Years in TEP</td>
<td>0.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Caucasian</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Asian</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Hawaiian/PI</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Hispanic</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td>AfricanAm</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>NativeAm</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Tongan</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Mixed</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>


For the academic failure scenario, 25 participants received a vignette of a Native Hawaiian student with LD, 18 participants received a vignette of a Caucasian student with LD, 23 participants received a vignette of a Native Hawaiian student without LD, and 19 participants received a vignette of a Caucasian student without LD. For the behavioral challenge scenario, 22 participants received a vignette of a Native Hawaiian student with LD, 25 participants received a vignette of a Caucasian student with LD, 23 participants received a vignette of a Native Hawaiian student without LD, and 20 participants received a vignette of a Caucasian student without LD. There were 42 responses to non-LD vignettes and 43 responses to LD vignettes. However, there were 37 responses to Caucasian vignettes and 48 responses to Native Hawaiian vignettes. The unequal number of Native Hawaiian and Caucasian responses could be because more participants were given Native Hawaiian
vignettes due to a miscalculation during printing or compilation of pairs of vignettes prior to distribution. In addition, there were also a total of 6 missing scenarios. A possible reason for missing scenarios is that participants mistook the second vignette for a replicate vignette and did not complete it in error.

I obtained contact information from the Special Education Department at UHM to determine which instructors were teaching students who were not first year students in order to obtain a significant percentage of participants who were in the final phase of their TEP and I was provided with six names of general education and special education instructors who were co-teaching cohorts. I also e-mailed the four colleagues who teach face-to-face courses from the Education Program at LCC who were all teaching students in the first two years of their TEP. I distributed a Recruitment Letter via e-mail to all the instructors to request permission to have their students participate in a pre-service teacher attribution study (see Appendix A). Three instructors (two of whom were co-teachers and shared the same cohort of students) from UHM (50% response rate) and one instructor from LCC (25% response rate) responded affirmatively. I requested confirmation of participation within one week of receiving the recruitment letter. Instructors who agreed provided a time, date, and location to distribute and collect the surveys in person. The UHM students were enrolled in a dual preparation special education and elementary education, early childhood and special education, or elementary education programs. The LCC students were enrolled in an alternative licensure in general education, associate in arts in teaching, or special education certificate of competence program. The participation rate in the participating classes was 100%.
Setting

Data on the pre-service teacher sample were collected from two TEPs in Hawaii. LCC serves approximately 8,000 students of whom 26% are Native Hawaiian/Part Hawaiian, 22% are Filipino, 13% are Mixed Ethnicity, 11% are Caucasian, 10% are Mixed Asian, 8% are Japanese, 6% are Other Race, 3% are Pacific Islander, and 2% are Chinese. There are about 450 students who have declared majors in education at LCC of whom 30% are Native Hawaiian/Part Hawaiian, 17% are Filipino, 15% are Caucasian, 15% are Mixed Race, 10% are Mixed Asian, 5% are Japanese, 2% are Hispanic, 2% are Samoan, 1% are African-American, and 2% are Other Race. UHM serves about 18,800 students of whom 24% are Caucasian, 14% are Mixed Ethnicity, 14% are Native Hawaiian/Part Hawaiian, 10% are Japanese, 9% are Mixed Asian, 8% are Chinese, 8% are Filipino, 7% are Other Asian, and 4% are Other Race, and 2% are Pacific Islander. The College of Education at UHM has 1,946 students of whom 25% are Caucasian, 18% are Native Hawaiian/Part Hawaiian, 14% are Mixed Race, 12% Japanese, 8% Mixed Asian, 8% Filipino, 4% Chinese, 3% are Samoan, 2% are Korean, 1% are Hispanic, 1% are African-American, 1% are Vietnamese, 1% are Other Pacific Islanders, 2% are Other Race (University of Hawaii Institutional Research and Analysis Office Data Access Portal, Enrollment Reports, 2015).

Surveys were first distributed during the last 30 minutes of regularly scheduled classes to students in two of my own sections of Foundations of Inclusive Teaching (ED 284) and one section of Introduction to Classroom Management (ED 285) at Leeward Community College taught by a colleague. Surveys were also distributed to one section of Field Training in Special Education (SPED 400) at UH Manoa and one section of Field Training in Special
Education (SPED 400) at UH Manoa that was co-taught by a general education instructor and a special education instructor at the Leeward Community College campus.

**Research Design**

**Instrument**

The survey instrument was designed using Clark’s (1997) vignettes describing eight different hypothetical boys who had just taken a typical classroom test and failed as a model. Each vignette provided the following information: a statement of whether the student has been identified with LD, the student’s cultural and linguistic background, a brief discussion of events leading up to either failure on a test or verbally disrespecting a teacher. The descriptions identified the boys as either LD non-LD (NLD), Native Hawaiian or Caucasian, and as failing a test or verbally disrespecting a teacher. A combination of two vignettes (one behavioral vignette and one academic vignette) was randomly distributed to participants. Thus, the study employed an experimental design to examine the effects of LD status, CLD status, and outcome type (academic and behavioral) on pre-service teachers’ attributions. The independent variables were Caucasian/Native Hawaiian and LD/non-LD. The dependent variables were teacher control, empathy, frustration, and expectation of future failure.

To inform the instrument and methods of this study, I conducted a pilot study involving 31 students from two sections of my Foundations of Inclusive Teaching course at Leeward Community College who completed the attribution survey as an in-class activity. I created eight vignettes, each describing a hypothetical boy who had just taken a typical classroom test and failed. Three types of information were provided in each vignette: a statement of student ability, the typical pattern of effort expended by the student in the classroom, and additional information on academic performance identifying the boys as LD
and four as nondisabled. The description of the boys differed on ability (high or low), typical effort (high or low), and presence/absence of LD (LD or NLD), creating eight different descriptions. A debriefing of participants was conducted immediately following completion of the instrument and data survey. Participants were asked to comment on the clarity of the vignettes, any problems they encountered, and changes they would make to the vignette language, the questions, and their respective scales. Revisions were made in order to address discrepancies and clarify the vignettes more fully. Participants in the pilot study suggested that the terms “pity” and “anger” may evoke extremely negative emotions, so I selected more neutral terms, “empathy” and “frustration,” to measure the same constructs. After explaining the research questions of the study, participants reported that the multiple descriptors for the students (i.e., ability, effort, LD status, and race) were confusing or “overwhelming.” After more careful consideration of how to measure the impact of LD and CLD status, I resolved to remove the ability and effort factors.

The CLD status variable was added to the vignettes as well as a behavioral scenario due to lack of attribution research addressing these topics. In addition, rating scales were modified from the original instrument, which used -5 (highest level of punishment) to 5 (highest level of positive feedback) for the feedback questions and 1 (lowest) to 7 (highest) for the anger, pity, and likelihood of future failure questions. Based on suggestions from committee members, the new instrument was redesigned to use the same scale of 1 (lowest level) to 5 (highest level) for all four questions for consistency.

After discussing the ultimate research goals with my committee chair and committee members, I made multiple modifications to the pilot when designing this study. My dissertation committee members questioned how accurately the first question from Clark’s
study on the type of feedback (positive or negative) aligned with locus of causality. Therefore, I used suggestions from my committee members to change the prompt to be a more appropriate measurement of how much participants attribute the student outcome to an internal or external cause. Ultimately, I selected “How much do you think expending extra instructional effort and time with this child will result in more positive outcomes in the future?” with a rating scale ranging from 1 = very little to 5 = very much.

To determine a behavioral problem that was functionally equivalent to failure on a test, I explored research on what teachers believe are highly problematic classroom misbehaviors. Sun and Shek (2012) interviewed secondary school teachers to generate a list of student problem behaviors considered to be the most disruptive. The authors found the most unacceptable problem behavior was disrespecting teachers in terms of disobedience and rudeness, followed by talking out of turn and verbal aggression. I developed a scenario in which the student responds to a teacher’s question related to content covered in the lesson with the comment, “You’re a crappy teacher, I hate this class!” This behavior is an example of a highly unacceptable type of problematic behavior: disrespecting the teacher in terms of rudeness.

The attributional constructs described in attribution theory are locus of control (two poles: internal and external), stability (likelihood outcomes will change over time), and controllability (how much control does an individual have over an outcome) (Kelley, 1967). In this study, the two questions, “How much frustration do you feel toward this child?” and “How much empathy do you feel toward this child?” measure locus of control since the assumption is that participants will rate students with higher levels of empathy if they believe the locus of control is external. When participants believe circumstances outside the student’s
control caused a negative outcome, they are more likely to be sympathetic towards that individual (Allen & Ferrand, 1999). The question, “How much control do you think the teacher has over this child’s academic/behavioral outcome?” measures controllability since the assumption is that participants will report higher levels of teacher control when they believe a student’s outcome is something they feel they can control such as instructional strategies versus something they cannot control such as student behaviors (Weiner, 1974). Finally, the question, “How likely is it that the child will fail/misbehave again?” measures stability since the assumption is that participants will have higher expectancies of future failure if they believe the cause of the negative outcome will not change over time (Weiner, 1986).

An open-ended question, “Briefly explain why you selected the response in the question above?,” was appended to each of the four questions to explore why they selected their rating responses. Using a sequential quantitative-qualitative approach enhances interpretive validity and enabled me to explore participants’ attributions in greater depth than allowed by a solely quantitative analysis. These qualitative inquiries broaden the dimensions and scope of the study by helping to obtain a more complete picture of why participants’ provided their ratings (Teddlie & Takashori, 2009). The qualitative data also helps me probe further into the statistically significant results to understand its meaning. Following the quantifiable measurements of each attribution construct with an open-ended clarifying question expands the breadth and range of inquiry of this study in a way that has not yet been explored.

I constructed eight vignettes describing hypothetical boys (a) with or without a LD, (b) who were and were not CLD, and (c) who either failed a classroom test or exhibited a
disruptive classroom behavior (See Appendix B). Each vignette briefly described the child’s ethnic background and provided some classroom and situational context before explaining the child’s failure or behavior. The context descriptions were identical for the vignettes except for the information related to (a) ethnic background, (b) presence or absence of a LD, and (c) type of failure (e.g., failing a test or behavioral outburst). In addition to providing a brief written description of the child’s cultural and linguistic background, I selected photographs of approximately 12 year old Caucasian and Native Hawaiian/OPI boys to accompany each vignette to provide participants with a visual image clearly portraying the child’s ethnic background (see Chang & Sue, 2003). Both photographs depicted a smiling child to reduce association with implied positive or negative personality traits.

**Procedures**

After consultation with a committee member with expertise in quantitative analysis, I resolved to give each participant one randomly assigned academic failure vignette and one randomly assigned behavioral failure vignette, instead of all eight vignettes. I printed 100 academic vignettes and 100 behavioral vignettes and labeled each academic vignette A1-A4 and each behavioral vignette B5-B8. I paired each set of A1 with a different set of behavioral vignettes and repeated the process with A2-A4 until all potential pairings were exhausted. Receiving only two vignettes reduced survey completion time and potentially reduces social desirability since the manipulated variables might be more transparent if a participant reads all eight or a larger subset. Following redesign of the instrument and procedures for distribution, I obtained Social and Behavioral Sciences Institutional Review Board approval to conduct a pre-service teacher attribution study through the Office of Research Compliance at UH Manoa.
Instructions were provided directly on the instrument with an explanation of the task, directions for completing the task, and a statement guaranteeing the anonymity of participants. Participants were randomly assigned two vignettes and asked to assume that the hypothetical boy described was a member of their class. After reading the vignettes, participants were asked to indicate their response to four questions about feedback, frustration, empathy, and expectation for future failure. Participants were instructed to mark only one point on each scale that most accurately represents their responses to the hypothetical case they read. Participants were asked to indicate their feedback, emotional (frustration/empathy) responses, and their expectations of future failure using 1 to 5 rating scales.

Participants were informed through an introductory paragraph on the survey form that the purpose of the study was to examine the similarities and differences in participants’ responses to the boys described in the vignettes, but participants will be blind to specific hypotheses. The directions for the survey included a guarantee of anonymity. Participants were given a Consent to Participate Form (Appendix A) and a Pre-service Teacher Attribution Survey (Appendix C). Prior to beginning the survey, participants were asked if they needed clarification or had any questions. Participants took about 15 minutes to complete the survey and after confirming if they had completed the survey to their satisfaction, I collected them by hand.

**Data Analysis**

Two 2 (LD/non LD) x 2 (Native Hawaiian/Caucasian) multivariate analyses of variance (MANOVAs) were conducted for the academic and behavioral vignettes, with ratings of control, frustration, empathy, and expectation of future failure as dependent
variables. To interpret the MANOVA findings, 2 (LD/non LD) x 2 (Native Hawaiian/Caucasian) analyses of variance (ANOVAs) were conducted for each of the four dependent variables (control, frustration, empathy, and expectation of future failure) for both academic and behavioral vignettes. For these analyses, $p$ values were set at conventional levels (.05) for testing the presence of main effects and interaction effects. Descriptive statistics were run for each analysis. For the qualitative data, I divided the responses into groups by vignette type and used a deductive approach to categorize and sort patterns in the language (Creswell, 2015). I coded the data according to frequently emerging themes in responses.
CHAPTER 4. RESULTS

The purpose of this study was to investigate pre-service teachers’ attributional responses for academic failure and behavioral challenges of hypothetical students described as (a) having or not having LD and (b) Caucasian or Native Hawaiian. The study was designed to examine two research questions:

1. To what extent does the presence of an LD label influence pre-service teachers’ attributions to a hypothetical student’s failure on a test or behavioral challenge on (a) teacher control, (b) emotional reactions (frustration and empathy), and (c) expectations of future academic/behavioral failure.

2. To what extent does a student’s identification as a Native Hawaiian or Caucasian influence pre-service teachers’ attributions to a hypothetical student’s failure on a test or behavioral challenge on (a) teacher control, (b) emotional reactions (frustration and empathy), and (c) expectations of future academic/behavioral failure.

I examined the research questions by conducting two separate MANOVAs for the academic and behavioral vignettes. In order to interpret the MANOVA results more closely, I conducted follow up ANOVAs of between subjects effects for both academic and behavioral vignettes and separate ANOVAs for each outcome measure for the significant findings. Each table provides a summary of the omnibus test examining each main effect and interaction specified in the model. I provided a visual plot of interactions that approached statistical significance ($p < .10$).

As typical in evaluating the pattern of significant effects in ANOVA-type models, higher order significant interactions should be evaluated first (Marcoulides & Hershberger,
This is because interaction effects are unique effects that cannot be predicted from the main effects of the factors in the model. A significant interaction means that certain combinations of the factors in the model have different effects from other combinations (Marcoulides & Hershberger, 1997).

Table 4.1 presents the MANOVA for the academic vignettes treating the four questions aligned with the attribution constructs as one set of multiple dependent variables.

### Table 4.1

*Academic Multivariate Tests*

<table>
<thead>
<tr>
<th>Effect</th>
<th>Value</th>
<th>F</th>
<th>df</th>
<th>Error df</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pillai’s Trace</td>
<td>0.979</td>
<td></td>
<td>908.635</td>
<td>4.00</td>
<td>78.000</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Wilks’ Lambda</td>
<td>0.021</td>
<td>908.635</td>
<td>4.00</td>
<td>78.000</td>
<td>&lt;.001</td>
<td>.979</td>
</tr>
<tr>
<td>Hotelling’s Trace</td>
<td>46.597</td>
<td>908.635</td>
<td>4.00</td>
<td>78.000</td>
<td>&lt;.001</td>
<td>.979</td>
</tr>
<tr>
<td>Roy’s Largest Root</td>
<td>46.597</td>
<td>908.635</td>
<td>4.00</td>
<td>78.000</td>
<td>&lt;.001</td>
<td>.979</td>
</tr>
<tr>
<td>Hawaiian</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pillai’s Trace</td>
<td>0.053</td>
<td>1.085</td>
<td>4.00</td>
<td>78.000</td>
<td>.370</td>
<td>.053</td>
</tr>
<tr>
<td>Wilks’ Lambda</td>
<td>0.947</td>
<td>1.085</td>
<td>4.00</td>
<td>78.000</td>
<td>.370</td>
<td>.053</td>
</tr>
<tr>
<td>Hotelling’s Trace</td>
<td>0.056</td>
<td>1.085</td>
<td>4.00</td>
<td>78.000</td>
<td>.370</td>
<td>.053</td>
</tr>
<tr>
<td>Roy’s Largest Root</td>
<td>0.056</td>
<td>1.085</td>
<td>4.00</td>
<td>78.000</td>
<td>.370</td>
<td>.053</td>
</tr>
<tr>
<td>Learning Disability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pillai’s Trace</td>
<td>0.025</td>
<td>.501</td>
<td>4.00</td>
<td>78.000</td>
<td>.735</td>
<td>.025</td>
</tr>
<tr>
<td>Wilks’ Lambda</td>
<td>0.975</td>
<td>.501</td>
<td>4.00</td>
<td>78.000</td>
<td>.735</td>
<td>.025</td>
</tr>
<tr>
<td>Hotelling’s Trace</td>
<td>0.026</td>
<td>.501</td>
<td>4.00</td>
<td>78.000</td>
<td>.735</td>
<td>.025</td>
</tr>
<tr>
<td>Roy’s Largest Root</td>
<td>0.026</td>
<td>.501</td>
<td>4.00</td>
<td>78.000</td>
<td>.735</td>
<td>.025</td>
</tr>
<tr>
<td>Hawaiian * Learning Disability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pillai’s Trace</td>
<td>0.116</td>
<td>2.567</td>
<td>4.00</td>
<td>78.000</td>
<td>.045</td>
<td>.116</td>
</tr>
<tr>
<td>Wilks’ Lambda</td>
<td>0.884</td>
<td>2.567</td>
<td>4.00</td>
<td>78.000</td>
<td>.045</td>
<td>.116</td>
</tr>
<tr>
<td>Hotelling’s Trace</td>
<td>0.132</td>
<td>2.567</td>
<td>4.00</td>
<td>78.000</td>
<td>.045</td>
<td>.116</td>
</tr>
<tr>
<td>Roy’s Largest Root</td>
<td>0.132</td>
<td>2.567</td>
<td>4.00</td>
<td>78.000</td>
<td>.045</td>
<td>.116</td>
</tr>
</tbody>
</table>

*a* Design: Intercept + Hawaiian + Learning Disability + Hawaiian * Learning Disability.

*b* Exact statistic.

The data in Table 4.1 shows there is a significant interaction effect for Hawaiian and LD status for the academic vignettes across all four dependent variables ($p = .045$).
Table 4.2 presents the follow up ANOVA of between-subjects effects for the academic vignettes.

Table 4.2.  
*Academic Tests of Between-Subjects Effects*

<table>
<thead>
<tr>
<th>Source</th>
<th>Dependent Variable</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>Control</td>
<td>6.227(^a)</td>
<td>3</td>
<td>2.076</td>
<td>1.324</td>
<td>.272</td>
<td>.047</td>
</tr>
<tr>
<td></td>
<td>Frustration</td>
<td>6.334(^b)</td>
<td>3</td>
<td>2.111</td>
<td>1.955</td>
<td>.127</td>
<td>.068</td>
</tr>
<tr>
<td></td>
<td>Empathy</td>
<td>1.890(^c)</td>
<td>3</td>
<td>0.630</td>
<td>0.674</td>
<td>.571</td>
<td>.024</td>
</tr>
<tr>
<td></td>
<td>Expectations</td>
<td>1.217(^d)</td>
<td>3</td>
<td>0.406</td>
<td>0.355</td>
<td>.786</td>
<td>.013</td>
</tr>
<tr>
<td>Intercept</td>
<td>Control</td>
<td>1031.120</td>
<td>1</td>
<td>1031.120</td>
<td>657.538</td>
<td>&lt;.001</td>
<td>.890</td>
</tr>
<tr>
<td></td>
<td>Frustration</td>
<td>639.469</td>
<td>1</td>
<td>639.469</td>
<td>592.115</td>
<td>&lt;.001</td>
<td>.880</td>
</tr>
<tr>
<td></td>
<td>Empathy</td>
<td>1146.383</td>
<td>1</td>
<td>1146.383</td>
<td>1225.723</td>
<td>&lt;.001</td>
<td>.938</td>
</tr>
<tr>
<td></td>
<td>Expectations</td>
<td>1177.796</td>
<td>1</td>
<td>1177.796</td>
<td>1030.308</td>
<td>&lt;.001</td>
<td>.927</td>
</tr>
<tr>
<td>Hawaiian</td>
<td>Control</td>
<td>1.322</td>
<td>1</td>
<td>1.322</td>
<td>0.843</td>
<td>.361</td>
<td>.100</td>
</tr>
<tr>
<td></td>
<td>Frustration</td>
<td>2.522</td>
<td>1</td>
<td>2.522</td>
<td>2.330</td>
<td>.130</td>
<td>.028</td>
</tr>
<tr>
<td></td>
<td>Empathy</td>
<td>0.027</td>
<td>1</td>
<td>0.027</td>
<td>0.029</td>
<td>.866</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Expectations</td>
<td>0.000</td>
<td>1</td>
<td>0.000</td>
<td>0.000</td>
<td>.998</td>
<td>.000</td>
</tr>
<tr>
<td>Learning Disability</td>
<td>Control</td>
<td>0.384</td>
<td>1</td>
<td>0.384</td>
<td>0.245</td>
<td>.622</td>
<td>.003</td>
</tr>
<tr>
<td></td>
<td>Frustration</td>
<td>0.142</td>
<td>1</td>
<td>0.142</td>
<td>0.131</td>
<td>.718</td>
<td>.002</td>
</tr>
<tr>
<td></td>
<td>Empathy</td>
<td>1.119</td>
<td>1</td>
<td>1.119</td>
<td>1.196</td>
<td>.277</td>
<td>.015</td>
</tr>
<tr>
<td></td>
<td>Expectations</td>
<td>0.755</td>
<td>1</td>
<td>0.755</td>
<td>0.660</td>
<td>.419</td>
<td>.008</td>
</tr>
<tr>
<td>Hawaiian * Learning Disability</td>
<td>Control</td>
<td>4.775</td>
<td>1</td>
<td>4.775</td>
<td>3.045</td>
<td>.085</td>
<td>.036</td>
</tr>
<tr>
<td></td>
<td>Frustration</td>
<td>3.505</td>
<td>1</td>
<td>3.505</td>
<td>3.246</td>
<td>.075</td>
<td>.039</td>
</tr>
<tr>
<td></td>
<td>Empathy</td>
<td>0.972</td>
<td>1</td>
<td>0.972</td>
<td>1.040</td>
<td>.311</td>
<td>.013</td>
</tr>
<tr>
<td></td>
<td>Expectations</td>
<td>0.315</td>
<td>1</td>
<td>0.315</td>
<td>0.276</td>
<td>.601</td>
<td>.003</td>
</tr>
<tr>
<td>Error</td>
<td>Control</td>
<td>127.020</td>
<td>81</td>
<td>1.568</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Frustration</td>
<td>87.478</td>
<td>81</td>
<td>1.080</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Empathy</td>
<td>75.757</td>
<td>81</td>
<td>0.935</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Expectations</td>
<td>92.595</td>
<td>81</td>
<td>1.143</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Control</td>
<td>1178.000</td>
<td>85</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Frustration</td>
<td>738.000</td>
<td>85</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Empathy</td>
<td>1245.000</td>
<td>85</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Expectations</td>
<td>1291.000</td>
<td>85</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>Control</td>
<td>133.247</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Frustration</td>
<td>93.812</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Empathy</td>
<td>77.647</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Expectations</td>
<td>93.812</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) R Squared = .047 (Adjusted R Squared = .011).  
\(^b\) R Squared = .068 (Adjusted R Squared = .033).  
\(^c\) R Squared = .024 (Adjusted R Squared = -.012).  
\(^d\) R Squared = .013 (Adjusted R Squared = -.024).
Table 4.2 shows interaction effects that approach statistical significance for control and frustration (p=.085, p=.075, respectively) between LD status and Native Hawaiian status.

Table 4.3 presents the MANOVA for the behavioral vignettes treating the four outcome measures as one set of multiple dependent variables.

Table 4.3.
**Behavioral Multivariate Tests**

<table>
<thead>
<tr>
<th>Effect</th>
<th>Value</th>
<th>F</th>
<th>Hypothesis df</th>
<th>Error df</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.982</td>
<td>1090.218b</td>
<td>4.000</td>
<td>78.000</td>
<td>&lt;.001</td>
<td>.982</td>
</tr>
<tr>
<td>Wilks’ Lambda</td>
<td>0.018</td>
<td>1090.218b</td>
<td>4.000</td>
<td>78.000</td>
<td>&lt;.001</td>
<td>.982</td>
</tr>
<tr>
<td>Hotelling’s Trace</td>
<td>55.909</td>
<td>1090.218b</td>
<td>4.000</td>
<td>78.000</td>
<td>&lt;.001</td>
<td>.982</td>
</tr>
<tr>
<td>Roy’s Largest Root</td>
<td>55.909</td>
<td>1090.218b</td>
<td>4.000</td>
<td>78.000</td>
<td>&lt;.001</td>
<td>.982</td>
</tr>
<tr>
<td>Hawaiian</td>
<td>0.006</td>
<td>0.111b</td>
<td>4.000</td>
<td>78.000</td>
<td>.978</td>
<td>.006</td>
</tr>
<tr>
<td>Wilks’ Lambda</td>
<td>0.994</td>
<td>0.111b</td>
<td>4.000</td>
<td>78.000</td>
<td>.978</td>
<td>.006</td>
</tr>
<tr>
<td>Hotelling’s Trace</td>
<td>0.006</td>
<td>0.111b</td>
<td>4.000</td>
<td>78.000</td>
<td>.978</td>
<td>.006</td>
</tr>
<tr>
<td>Roy’s Largest Root</td>
<td>0.006</td>
<td>0.111b</td>
<td>4.000</td>
<td>78.000</td>
<td>.978</td>
<td>.006</td>
</tr>
<tr>
<td>Learning Disability</td>
<td>0.080</td>
<td>1.704b</td>
<td>4.000</td>
<td>78.000</td>
<td>.158</td>
<td>.080</td>
</tr>
<tr>
<td>Wilks’ Lambda</td>
<td>0.920</td>
<td>1.704b</td>
<td>4.000</td>
<td>78.000</td>
<td>.158</td>
<td>.080</td>
</tr>
<tr>
<td>Hotelling’s Trace</td>
<td>0.087</td>
<td>1.704b</td>
<td>4.000</td>
<td>78.000</td>
<td>.158</td>
<td>.080</td>
</tr>
<tr>
<td>Roy’s Largest Root</td>
<td>0.087</td>
<td>1.704b</td>
<td>4.000</td>
<td>78.000</td>
<td>.158</td>
<td>.080</td>
</tr>
<tr>
<td>Hawaiian * Learning Disability</td>
<td>0.026</td>
<td>0.520b</td>
<td>4.000</td>
<td>78.000</td>
<td>.721</td>
<td>.026</td>
</tr>
<tr>
<td>Wilks’ Lambda</td>
<td>0.974</td>
<td>0.520b</td>
<td>4.000</td>
<td>78.000</td>
<td>.721</td>
<td>.026</td>
</tr>
<tr>
<td>Hotelling’s Trace</td>
<td>0.027</td>
<td>0.520b</td>
<td>4.000</td>
<td>78.000</td>
<td>.721</td>
<td>.026</td>
</tr>
<tr>
<td>Roy’s Largest Root</td>
<td>0.027</td>
<td>0.520b</td>
<td>4.000</td>
<td>78.000</td>
<td>.721</td>
<td>.026</td>
</tr>
</tbody>
</table>

a Design: Intercept + Hawaiian + Learning Disability + Hawaiian * Learning Disability.

b Exact statistic.

Table 4.3 shows there are not any significant effects as a group on the dependent variables.

Table 4.4 presents the follow up ANOVA of between-subjects effects for the behavioral vignettes.
Table 4.4.

Behavioral Tests of Between-Subjects Effects

<table>
<thead>
<tr>
<th>Source</th>
<th>Dependent Variable</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>Control</td>
<td>2.859 (^a)</td>
<td>3</td>
<td>0.953</td>
<td>0.508</td>
<td>.678</td>
<td>.018</td>
</tr>
<tr>
<td></td>
<td>Frustration</td>
<td>0.640 (^b)</td>
<td>3</td>
<td>0.213</td>
<td>0.174</td>
<td>.914</td>
<td>.006</td>
</tr>
<tr>
<td></td>
<td>Empathy</td>
<td>0.173 (^c)</td>
<td>3</td>
<td>0.058</td>
<td>0.047</td>
<td>.986</td>
<td>.002</td>
</tr>
<tr>
<td></td>
<td>Expectations</td>
<td>4.280 (^d)</td>
<td>3</td>
<td>1.427</td>
<td>1.786</td>
<td>.156</td>
<td>.062</td>
</tr>
<tr>
<td>Intercept</td>
<td>Control</td>
<td>998.534</td>
<td>1</td>
<td>998.534</td>
<td>53.992</td>
<td>&lt;.001</td>
<td>.868</td>
</tr>
<tr>
<td></td>
<td>Frustration</td>
<td>704.919</td>
<td>1</td>
<td>704.919</td>
<td>574.390</td>
<td>&lt;.001</td>
<td>.876</td>
</tr>
<tr>
<td></td>
<td>Empathy</td>
<td>1151.337</td>
<td>1</td>
<td>1151.337</td>
<td>937.515</td>
<td>&lt;.001</td>
<td>.920</td>
</tr>
<tr>
<td></td>
<td>Expectations</td>
<td>1484.503</td>
<td>1</td>
<td>1484.503</td>
<td>1858.261</td>
<td>&lt;.001</td>
<td>.958</td>
</tr>
<tr>
<td>Hawaiian</td>
<td>Control</td>
<td>0.442</td>
<td>1</td>
<td>0.442</td>
<td>0.235</td>
<td>.629</td>
<td>.003</td>
</tr>
<tr>
<td></td>
<td>Frustration</td>
<td>0.108</td>
<td>1</td>
<td>0.108</td>
<td>0.088</td>
<td>.767</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>Empathy</td>
<td>0.042</td>
<td>1</td>
<td>0.042</td>
<td>0.034</td>
<td>.854</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Expectations</td>
<td>0.002</td>
<td>1</td>
<td>0.002</td>
<td>0.003</td>
<td>.957</td>
<td>.000</td>
</tr>
<tr>
<td>Learning Disability</td>
<td>Control</td>
<td>1.555</td>
<td>1</td>
<td>1.555</td>
<td>0.829</td>
<td>.365</td>
<td>.010</td>
</tr>
<tr>
<td></td>
<td>Frustration</td>
<td>0.225</td>
<td>1</td>
<td>0.225</td>
<td>0.183</td>
<td>.670</td>
<td>.002</td>
</tr>
<tr>
<td></td>
<td>Empathy</td>
<td>0.004</td>
<td>1</td>
<td>0.004</td>
<td>0.003</td>
<td>.957</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Expectations</td>
<td>3.880</td>
<td>1</td>
<td>3.880</td>
<td>4.857</td>
<td>.030</td>
<td>.057</td>
</tr>
<tr>
<td>Hawaiian * Learning Disability</td>
<td>Control</td>
<td>1.132</td>
<td>1</td>
<td>1.132</td>
<td>0.603</td>
<td>.440</td>
<td>.007</td>
</tr>
<tr>
<td></td>
<td>Frustration</td>
<td>0.374</td>
<td>1</td>
<td>0.374</td>
<td>0.305</td>
<td>.582</td>
<td>.004</td>
</tr>
<tr>
<td></td>
<td>Empathy</td>
<td>0.144</td>
<td>1</td>
<td>0.144</td>
<td>0.117</td>
<td>.733</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>Expectations</td>
<td>0.539</td>
<td>1</td>
<td>0.539</td>
<td>0.675</td>
<td>.414</td>
<td>.008</td>
</tr>
<tr>
<td>Error</td>
<td>Control</td>
<td>152.035</td>
<td>81</td>
<td>1.877</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Frustration</td>
<td>99.407</td>
<td>81</td>
<td>1.227</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Empathy</td>
<td>99.474</td>
<td>81</td>
<td>1.228</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Expectations</td>
<td>64.708</td>
<td>81</td>
<td>0.779</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Control</td>
<td>1158.000</td>
<td>85</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Frustration</td>
<td>812.000</td>
<td>85</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Empathy</td>
<td>1267.000</td>
<td>85</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Expectations</td>
<td>1560.000</td>
<td>85</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>Control</td>
<td>154.894</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Frustration</td>
<td>100.047</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Empathy</td>
<td>99.647</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Expectations</td>
<td>68.988</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) R Squared = .018 (Adjusted R Squared = -.018).
\(^b\) R Squared = .006 (Adjusted R Squared = -.030).
\(^c\) R Squared = .002 (Adjusted R Squared = -.035).
\(^d\) R Squared = .062 (Adjusted R Squared = .027).

Table 4.4 shows there was one main effect (p=.03) for LD status for expectation of future failure.
The following section presents the ANOVAs for each of the outcomes approaching statistical significance in the academic vignettes and behavioral vignettes.

**Academic Vignette Analyses**

Results from the first outcome (i.e., teacher control over student outcomes) for the academic scenario are presented in Table 4.5, Table 4.6, and Figure 4.1.

Table 4.5.  
**Descriptive Statistics: Control Over Student Outcomes**

<table>
<thead>
<tr>
<th>Hawaiian</th>
<th>LD</th>
<th>M</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00</td>
<td>0.00</td>
<td>3.95</td>
<td>1.18</td>
<td>19</td>
</tr>
<tr>
<td>1.00</td>
<td>3.33</td>
<td>1.33</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3.65</td>
<td>1.24</td>
<td>37</td>
<td></td>
</tr>
<tr>
<td>1.00</td>
<td>0.00</td>
<td>3.22</td>
<td>1.24</td>
<td>23</td>
</tr>
<tr>
<td>1.00</td>
<td>3.56</td>
<td>1.21</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3.40</td>
<td>1.25</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>0.00</td>
<td>3.55</td>
<td>1.25</td>
<td>42</td>
</tr>
<tr>
<td>1.00</td>
<td>3.47</td>
<td>1.28</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3.51</td>
<td>1.26</td>
<td>85</td>
<td></td>
</tr>
</tbody>
</table>


Descriptive statistics for control related to academic failure are reported for each group in Table 4.5. Table 4.5 indicates that pre-service teachers reported higher levels of control over the academic outcomes of Caucasian students without LD (*M* = 3.95) than Caucasian students with LD (*M* = 3.33). However, they reported higher levels of control over Native Hawaiian students with LD (*M* = 3.56) than Native Hawaiian students without LD (*M* = 3.22). Table 4.5 presents the results of the two-way ANOVA examining main effects due to LD status (0 = not LD, 1 = LD) and ethnicity (0 = Caucasian, 1 = Hawaiian) and the interaction between LD status and ethnicity. A significant interaction implies that
participants’ perceptions of control over students without LD versus students with LD is linked to the student’s ethnicity.

Table 4.6 indicates that the interaction effect approaches statistical significance \( (p = 0.08) \). Interpretation of the interactions can be facilitated by examining the plots of the relevant data in Figure 4.1.

Table 4.6.
*Tests of Between-Subjects Effects: Control Over Student Outcomes*

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>6.23*</td>
<td>3</td>
<td>2.08</td>
<td>1.32</td>
<td>.27</td>
<td>0.05</td>
</tr>
<tr>
<td>Intercept</td>
<td>1031.12</td>
<td>1</td>
<td>1031.12</td>
<td>657.54</td>
<td>&lt;.001</td>
<td>0.90</td>
</tr>
<tr>
<td>Hawaiian</td>
<td>1.32</td>
<td>1</td>
<td>1.32</td>
<td>0.84</td>
<td>.36</td>
<td>0.01</td>
</tr>
<tr>
<td>LD</td>
<td>0.38</td>
<td>1</td>
<td>0.38</td>
<td>0.25</td>
<td>.62</td>
<td>0.00</td>
</tr>
<tr>
<td>Hawaiian * LD</td>
<td>4.78</td>
<td>1</td>
<td>4.78</td>
<td>3.05</td>
<td>.08</td>
<td>0.04</td>
</tr>
<tr>
<td>Error</td>
<td>127.02</td>
<td>81</td>
<td>1.57</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1178.00</td>
<td>85</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>133.25</td>
<td>84</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. LD = Learning Disability.*

\[a \text{ R Squared} = .047 \text{ (Adjusted R Squared} = .011)\]

Interpretation of the meaning of significant interactions can be facilitated by examining the plots of the interactions visually in Figure 4.1. Figure 4.1 confirms that teachers perceive relatively high academic control over Caucasian students who are not LD. In contrast, they perceive considerably lower academic control over Native Hawaiian students who are not LD. Regarding students with LD, they perceive greater academic control over Hawaiian students with LD than Caucasian students with LD.
Figure 4.1.
Plot of Two-way Interaction: Control Over Student Academic Outcomes

Results from the second outcome (i.e., frustration) for the academic scenario are presented in Table 4.7, Table 4.8, and Figure 4.2.

Descriptive statistics for frustration related to academic failure are reported for each group in Table 4.7. Table 4.7 shows pre-service teachers felt more frustration with academic failure towards Caucasian students without LD ($M = 3.11$) than Caucasian students with LD ($M = 2.78$). On the contrary, pre-service teachers felt less frustration towards Native Hawaiian students without LD ($M = 2.35$) than Native Hawaiian students with LD ($M = 2.84$).
Table 4.7.
Descriptive Statistics
Dependent Variable: Frustration

<table>
<thead>
<tr>
<th></th>
<th>LD</th>
<th>M</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hawaiian</td>
<td>0.00</td>
<td>3.11</td>
<td>1.15</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>1.00</td>
<td>2.78</td>
<td>1.06</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2.95</td>
<td>1.10</td>
<td>37</td>
</tr>
<tr>
<td>1.00</td>
<td>0.00</td>
<td>2.35</td>
<td>0.89</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>1.00</td>
<td>2.84</td>
<td>1.07</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2.60</td>
<td>1.01</td>
<td>48</td>
</tr>
<tr>
<td>Total</td>
<td>0.00</td>
<td>2.69</td>
<td>1.07</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>1.00</td>
<td>2.81</td>
<td>1.05</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2.75</td>
<td>1.06</td>
<td>85</td>
</tr>
</tbody>
</table>

Note. LD = learning disability. M = Mean. SD = Standard Deviation. n = sample size. Response options ranged from 1 (very little) to 5 (very much).

Table 4.8 indicates a discrepancy in frustration responses to Caucasian students without LD and Native Hawaiian students without LD as demonstrated by an interaction effect for race and LD status that approaches statistical significance (p = .08).

Table 4.8.
Tests of Between-Subjects Effects
Dependent Variable: Frustration

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>6.33a</td>
<td>3</td>
<td>2.11</td>
<td>2.00</td>
<td>.13</td>
<td>0.07</td>
</tr>
<tr>
<td>Intercept</td>
<td>639.47</td>
<td>1</td>
<td>639.47</td>
<td>592.11</td>
<td>&lt;.001</td>
<td>0.88</td>
</tr>
<tr>
<td>Hawaiian</td>
<td>2.52</td>
<td>1</td>
<td>2.52</td>
<td>2.34</td>
<td>.13</td>
<td>0.03</td>
</tr>
<tr>
<td>LD</td>
<td>0.14</td>
<td>1</td>
<td>0.14</td>
<td>0.13</td>
<td>.72</td>
<td>0.00</td>
</tr>
<tr>
<td>Hawaiian * LD</td>
<td>3.51</td>
<td>1</td>
<td>3.51</td>
<td>3.25</td>
<td>.08</td>
<td>0.04</td>
</tr>
<tr>
<td>Error</td>
<td>87.48</td>
<td>81</td>
<td>1.08</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>738.00</td>
<td>85</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>93.81</td>
<td>84</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. LD = learning disability. a R Squared = .068 (Adjusted R Squared = .033).
The interaction can be interpreted by examining the plots of the interactions visually in Figure 4.2.

Figure 4.2.

*Plot of Two-way Interaction: Frustration with Student Academic Failure*

Figure 4.2 indicates a considerable gap in perceptions regarding academic frustration regarding Caucasian students and Native Hawaiian students who are not LD. In contrast, Native Hawaiian and Caucasian students with LD are perceived as creating about the same levels of academic frustration.

Results from the third outcome (i.e., empathy) for the academic scenario are presented in Tables 4.9 and 4.10.
Table 4.9.

Descriptive Statistics
Dependent Variable: Empathy

<table>
<thead>
<tr>
<th></th>
<th>LD</th>
<th>M</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hawaiian</td>
<td>0.00</td>
<td>3.95</td>
<td>1.03</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>1.00</td>
<td>3.50</td>
<td>0.99</td>
<td>18</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>3.73</td>
<td>1.02</td>
<td>37</td>
</tr>
<tr>
<td></td>
<td>0.00</td>
<td>3.70</td>
<td>1.06</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>1.00</td>
<td>3.68</td>
<td>0.80</td>
<td>25</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>3.69</td>
<td>0.93</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>0.00</td>
<td>3.81</td>
<td>1.04</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>1.00</td>
<td>3.60</td>
<td>0.88</td>
<td>43</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>3.71</td>
<td>0.96</td>
<td>85</td>
</tr>
</tbody>
</table>

Note. LD = learning disability. M = Mean. SD = Standard Deviation. n = sample size.
Response options ranged from 1 (very little) to 5 (very much).

Table 4.9 suggests fairly similar means regarding empathy with respect to both LD status and ethnicity. Pre-service teachers reported slightly higher levels of empathy for both Caucasian and Native Hawaiian students without LD ($M = 3.95, \ M = 3.70$, respectively) compared to students with LD ($M = 3.50, \ M = 3.68$, respectively).

Table 4.10.

Tests of Between-Subjects Effects
Dependent Variable: Empathy

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>1.89(^a)</td>
<td>3</td>
<td>0.63</td>
<td>0.67</td>
<td>.57</td>
<td>0.024</td>
</tr>
<tr>
<td>Intercept</td>
<td>1146.38</td>
<td>1</td>
<td>1146.38</td>
<td>1225.72</td>
<td>&lt;.001</td>
<td>0.94</td>
</tr>
<tr>
<td>Hawaiian</td>
<td>0.03</td>
<td>1</td>
<td>0.03</td>
<td>0.03</td>
<td>.87</td>
<td>0.00</td>
</tr>
<tr>
<td>LD</td>
<td>1.12</td>
<td>1</td>
<td>1.12</td>
<td>1.20</td>
<td>.28</td>
<td>0.02</td>
</tr>
<tr>
<td>Hawaiian * LD</td>
<td>0.97</td>
<td>1</td>
<td>0.97</td>
<td>1.04</td>
<td>.31</td>
<td>0.01</td>
</tr>
<tr>
<td>Error</td>
<td>75.76</td>
<td>81</td>
<td>0.94</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1245.00</td>
<td>85</td>
<td>0.94</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>77.65</td>
<td>84</td>
<td>0.94</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. LD = learning disability \(^a\) R Squared = .024 (Adjusted R Squared = -.012).
Results of the ANOVA reported in Table 4.10 indicate no statistically significant main effects or interactions regarding levels of empathy.

Results from the fourth outcome (i.e., expectation for future failure) for the academic scenario are presented in Table 4.11 and Table 4.12.

Table 4.11.

Descriptive Statistics
Dependent Variable: Expectation for Future Failure

<table>
<thead>
<tr>
<th>Hawaiian</th>
<th>LD</th>
<th>M</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00</td>
<td>0.00</td>
<td>3.79</td>
<td>1.18</td>
<td>19</td>
</tr>
<tr>
<td>1.00</td>
<td>3.72</td>
<td>1.07</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3.76</td>
<td>1.12</td>
<td>37</td>
<td></td>
</tr>
<tr>
<td>1.00</td>
<td>0.00</td>
<td>3.91</td>
<td>0.90</td>
<td>23</td>
</tr>
<tr>
<td>1.00</td>
<td>3.60</td>
<td>1.12</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3.75</td>
<td>1.02</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>0.00</td>
<td>3.86</td>
<td>1.03</td>
<td>42</td>
</tr>
<tr>
<td>1.00</td>
<td>3.65</td>
<td>1.09</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3.75</td>
<td>1.06</td>
<td>85</td>
<td></td>
</tr>
</tbody>
</table>

Note. LD = learning disability. M = Mean. SD = Standard Deviation. n = sample size. Response options ranged from 1 (very little) to 5 (very much).

Table 4.11 shows similar means for expectation for future failure across the four groups. Pre-service teachers reported slightly higher levels of empathy for both Caucasian and Native Hawaiian students without LD ($M = 3.79$, $M = 3.91$, respectively) compared to students with LD ($M = 3.72$, $M = 3.60$, respectively).

Table 4.12 shows the main effects and interaction effects were not statistically significant regarding expectation for future failure for the academic vignettes.
Table 4.12.

Tests of Between-Subjects Effects

Dependent Variable: Expectation for Future Failure

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>1.22^a</td>
<td>3</td>
<td>0.41</td>
<td>0.36</td>
<td>.79</td>
<td>0.01</td>
</tr>
<tr>
<td>Intercept</td>
<td>1177.80</td>
<td>1</td>
<td>1177.80</td>
<td>1030.31</td>
<td>&lt; .001</td>
<td>0.93</td>
</tr>
<tr>
<td>Hawaiian</td>
<td>0.00</td>
<td>1</td>
<td>0.00</td>
<td>0.00</td>
<td>.10</td>
<td>0.00</td>
</tr>
<tr>
<td>LD</td>
<td>0.76</td>
<td>1</td>
<td>0.76</td>
<td>0.66</td>
<td>.42</td>
<td>0.01</td>
</tr>
<tr>
<td>Hawaiian * LD</td>
<td>0.32</td>
<td>1</td>
<td>0.32</td>
<td>0.028</td>
<td>.60</td>
<td>0.00</td>
</tr>
<tr>
<td>Error</td>
<td>92.60</td>
<td>81</td>
<td>1.14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1291.00</td>
<td>85</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>93.80</td>
<td>84</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. LD = learning disability. ^a R Squared = .013 (Adjusted R Squared = -.024).

Behavioral Vignette Analyses

Results from the fourth outcome (i.e., expectation for future behavioral problems) for the behavioral scenario are presented in Table 4.13, Table 4.14, and Figure 4.3

Table 4.13.

Descriptive Statistics

Dependent Variable: Expectation of Future Behavioral Problems

<table>
<thead>
<tr>
<th>Hawaiian</th>
<th>LD</th>
<th>M</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00</td>
<td>0.00</td>
<td>4.35</td>
<td>0.88</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>1.00</td>
<td>4.08</td>
<td>0.81</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>4.20</td>
<td>0.84</td>
<td>45</td>
</tr>
<tr>
<td>1.00</td>
<td>0.00</td>
<td>4.50</td>
<td>0.62</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>1.00</td>
<td>3.91</td>
<td>1.15</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>4.18</td>
<td>0.98</td>
<td>40</td>
</tr>
<tr>
<td>Total</td>
<td>0.00</td>
<td>4.42</td>
<td>0.76</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>1.00</td>
<td>4.00</td>
<td>0.98</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>4.19</td>
<td>0.91</td>
<td>85</td>
</tr>
</tbody>
</table>

Note. LD = learning disability. M = Mean. SD = Standard Deviation. n = sample size. Response options ranged from 1 (very little) to 5 (very much).
Table 4.13 shows pre-service teachers had higher expectations of future behavioral problems for Native Hawaiian students without LD ($M = 4.50$) compared to Native Hawaiian students with LD ($M = 3.91$). However, an opposite trend was reported for Caucasian students. Pre-service teachers had higher expectations of future behavioral problems for Caucasian students with LD ($M = 4.08$) compared to Caucasian students without LD ($M = 4.35$).

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>4.28$^a$</td>
<td>1.43</td>
<td>1.79</td>
<td>.16</td>
<td>0.06</td>
</tr>
<tr>
<td>Intercept</td>
<td>1484.50</td>
<td>1848.50</td>
<td>1858.26</td>
<td>&lt; .001</td>
<td>0.96</td>
</tr>
<tr>
<td>Hawaiian</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>.96</td>
<td>0.00</td>
</tr>
<tr>
<td>LD</td>
<td>3.88</td>
<td>3.88</td>
<td>4.86</td>
<td>.03</td>
<td>0.06</td>
</tr>
<tr>
<td>Hawaiian * LD</td>
<td>0.54</td>
<td>0.54</td>
<td>0.68</td>
<td>.41</td>
<td>0.01</td>
</tr>
<tr>
<td>Error</td>
<td>64.71</td>
<td>0.80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1560.00</td>
<td>85</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>68.99</td>
<td>84</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. LD = learning disability. $^a$ R Squared = .062 (Adjusted R Squared = .027)*

Table 4.14 indicates the gap between expectation for future behavioral challenges for students with and without LD is statistically significant with a main effect for LD ($p = .03$). Meaning of significant effect can be interpreted by examining the plots visually in Figure 4.3.
Figure 4.3 indicates higher expectations of future behavioral outbursts for Native Hawaiian and Caucasian students without LD compared to those with LD.

**Qualitative Data on Statistically Significant Findings**

Open ended responses related to level of control over academic outcomes of Native Hawaiian students with LD included instructional strategies the teacher could use such as discussing academic goals with parents, seeking school-based resources, and catering to multiple learning styles. Qualitative responses for relatively high levels of frustration with academic failure towards Caucasians without LD pointed to lack of student effort, student
willingness to work, and poor student choices such as not attending the free tutoring. Responses for relatively lower frustration levels for Native Hawaiian students without LD mentioned why the student might be failing due to the teacher’s failure to use small group instruction, differentiation, accommodations, and high-interest activities. Qualitative responses on relatively higher expectations of future behavioral challenges for students without LD included the highly stable negative attitude of the students by making references to the “once an offender, always an offender” sentiment.
CHAPTER 5. DISCUSSION

The findings of this study indicate pre-service teachers reported significantly different attributional responses based on race and LD status with regard to teacher control over students’ academic outcomes, frustration with academic failure of students, and expectation of future behavioral challenges. There was a significant interaction effect across all the DVs for the academic vignettes. However, the two univariate interactions (control and frustration) only approach statistical significance. The multivariate outcomes revealed non-significant results for 5 of 6 multivariate tests. In this section I will discuss interpretation of the key findings as well as implications, limitations, and recommendations for future research.

Control Over Academic Failure

The first univariate interaction effect that approached statistical significance was between LD status and race for level of control over academic outcomes of a student. The data suggest LD status does not appear to make a difference in participants’ sense of control over Native Hawaiian students’ academic failure, but participants did report higher control over non-LD students for Caucasian students. The causal dimension of controllability in attribution theory (Weiner, 1974) refers to whether one perceives of an outcome as a controllable factor that one can alter or influence (Kelley & Michela, 1980). Previous studies on teacher attributions toward students with and without LD (Clark, 1997; Clark & Artilles, 2000; Tollefson & Chen, 1988) revealed that teachers typically reported lower levels of control over students with LD, which is consistent with this study’s data on attributional responses for Caucasian students. However, I did not observe the expected pattern of greater perceived control over academic failure for children without LD for Native Hawaiians. It is noteworthy that about 30% of the study’s participants self-identified as Native Hawaiian
because the racial background of the participants may provide insight on why participants felt relatively more control over the academic outcomes for Native Hawaiians with LD. The participants may be subscribing to a rescuer identity associated with people who commonly pursue careers in fields that help others such as nursing, teaching, social work, or psychology (Montuschi, 1984). Milner and Howard’s (2004) qualitative study on the perspectives of Black teachers teaching in Black communities described the rescuer mentality of Black teachers. The researchers explained that Black teachers often interacted with Black students and parents outside of school and therefore had a deeper understanding of Black culture, which led them to hold higher expectations, and demonstrate a higher belief in Black children’s capacity to succeed. Native Hawaiian participants in this study may have indicated a greater sense of control over academic outcomes of Native Hawaiian students identified with LD because of a strong rescuer identity for those whom they feel very connected to and responsible for. Furthermore, the participants in Milner and Howard’s study expressed that they felt strongly that the way American teachers, administrators, and policy makers conceive schooling deliberately segregates Black students by tracking them into less rigorous academic placements. Similarly, Native Hawaiians comprise over 50% of the LD student population in Hawaii, and they are more likely to be placed in more restrictive educational settings than students of other ethnic backgrounds (HDOE, 2013). Therefore, participants may have also felt the LD identification was a misnomer for Native Hawaiian students and felt even more determined to improve academic outcomes for these historically underserved and misunderstood students.

It is possible that pre-service teachers are aware of trends in overrepresentation because TEPs in Hawaii incorporate instruction on culturally responsive teaching through
curriculum from the Center or Research on Education, Diversity, and Excellence at UHM and Kamehameha Schools’ A’o Kumu Professional Development curriculum at LCC, which may predispose prospective educators to the social theory referred to as institutionalized racism. The interaction effect showing that LD status did not significantly influence pre-service teachers’ sense of control over Native Hawaiian students may point to the fact that pre-service teachers have been forewarned of the skewed labels CLD students often receive. Therefore, they may have ascribed to a more optimistic presumption that they do have control over students who tend to be inaccurately categorized as the least likely to succeed. However, more in-depth explanations regarding why pre-service teachers reported greater control over academic outcomes of Native Hawaiian students with LD require further investigation.

Qualitative data on control over academic outcomes of Native Hawaiian students with LD revealed that participants felt the teacher could attempt alternative strategies to improve student outcomes. Responses included, “She could ask parents why he can’t come to tutoring and if there was a better time,” “The teacher can find high-interest resources to engage him,” “Instead of just using Powerpoints, she can try more hands-on learning activities to engage him,” and “Teachers have a profound impact on student success.” These comments suggest pre-service teachers did not attribute the student’s failure to predominantly internal factors, but instead, identified multiple external factors that may have contributed to his failure.

Additionally, all 55 of the participants from LCC had completed or were enrolled in special education coursework on foundations of inclusive teaching and all 33 of the participants from UH Manoa were enrolled in a dual special education and elementary education program. The fact that many of the participants elected to pursue a special education career path may also explain why perceived levels of control were more favorable
for Native Hawaiian students with LD.

**Frustration with Academic Failure**

The second univariate interaction effect approaching statistical significance was between LD status and race for frustration level with a student’s academic failure.

Commensurate with previous teacher attribution literature on students with LD (Clark, 1997; Clark & Artiles, 2000; Woodcock & Vialle, 2011; Woolfson, 2007; Woolfson & Brady, 2009), the pre-service teachers in this study reported higher levels of frustration towards Caucasian students without LD than Caucasian students with LD. Contrary to expectations, pre-service teachers felt more frustration towards Native Hawaiian students with LD than Native Hawaiian students without LD. One potential explanation for the relatively high levels of frustration reported for Native Hawaiian students with LD is that pre-service teachers felt more irritated by failure syndrome in Native Hawaiian students. Failure syndrome is characterized by exhibiting deficits in perseverance and problem-solving effectiveness that result from a learned perception that one cannot control outcomes (Seligman, 1975). Failure syndrome has been used to describe students who approach assignments with high expectations of failure and who tend to give up easily (Brophy, 1998). As described earlier, psychologists have also described this phenomenon as learned helplessness, which refers to a similar pattern of apathetic behavior based on perceived lack of inherent ability (Seligman, Maier & Greer, 1968). Pre-service teachers may feel especially frustrated with Native Hawaiian students with LD if they perceive these students as failing because they approach tasks half-heartedly and give up when they encounter the first signs of difficulty rather than investing their best efforts (Struthers & Perry, 1996).
Qualitative data on the frustration responses seems to support the notion that pre-service teachers do, in fact, believe inherent deficiencies were not the cause for failure for Caucasian without LD. Comments included, “I believe the teacher has a lot to do with the student outcomes in education, but on some level the child must try as well,” “Maybe solutions could be found if the student was willing to work,” and “There is no effort on the child’s part to get help.” Participants with higher ratings for frustration consistently alluded to the disdain for lack of student effort, which implies belief that students with LD were capable of being successful with the academic task.

While it seems logical to be more frustrated with a student who fails because of lack of effort as opposed to lack of ability, perhaps pre-service teachers also felt more frustrated with academic failure of Caucasian students without LD because they believe the child’s behaviors are linked to learned helplessness or failure syndrome. However, they may have felt less frustrated with the Native Hawaiian student without LD because they perceived of the failure as a manifestation of negative interactions with educators. New educators often enter the profession with great idealism and ambition intending to shift the cultural paradigm that views marginalized populations (such as Native Hawaiians) as limited in their potential to succeed.

Qualitative data on frustration responses for Native Hawaiian students without LD included multiple comments on changes the teacher could make to make instructional material more understandable. Comments included: “He might not be able to get the extra tutoring because of commitments at home. He said he didn’t the material wasn’t clear, so maybe the teacher needs to approach things differently,” “The teacher should be trying different approaches to engage the student, small group? Accommodations?” “What is going
on with how the teacher differentiates the instruction,” “You can show more interest in the student and his personal likes/dislikes.” These comments indicate that pre-service teachers felt much more teacher accountability for the failure of Native Hawaiian students without LD and therefore, had lower frustration levels towards the student.

**Expectation of Future Behavioral Challenges**

The only significant main effect was for LD status in the behavioral vignettes regarding expectation of future failure. Participants had higher expectations of future behavioral failure for students without LD regardless of race. The relatively higher expectation of future behavioral problems for students without LD is not consistent with previous teacher attribution research that indicated expectations of future failure are higher for students with LD (Clark, 1997; Clark & Artiles, 2000; Woodcock & Vialle, 2011; Woolfson, 2007; Woolfson & Brady, 2009). Because there is minimal research on attributions toward behavioral outbursts of students with and without LD, this study’s finding that students without LD are considered more likely to misbehave again may suggest that pre-service teachers have particularly low self-efficacy with regard to disrespectful behavior that is not a manifestation of disability. Teachers with high self-efficacy levels in the area of behavior management attribute student’s behavioral outcomes to factors within the teacher’s control, and are, therefore, not stable outcomes.

An explanation for why pre-service teachers reported lower expectations of future behavioral challenges for those with LD may be that pre-service teachers have relatively optimistic attitude towards working with students with special needs in general (Killoran, Woronko, & Zaretsky, 2014; Sharma & Sokal, 2015; Shin, Lee, & McKenna, 2016). In fact, multiple studies have shown that completion of special education courses can positively
influence pre-service teachers’ perceptions and attitudes toward teaching students with disabilities (Arthur-Kelly, Sutherland, Lyons, Macfarlane, & Foreman, 2013; Senler, 2016; Sharma & Sokal, 2015). Both TEPs from which participants were drawn for this study require preliminary coursework in foundations of inclusive education and many students would have received instruction on common behaviors that are symptomatic of the child’s disability as well as strategies to implement positive behavioral interventions and supports (PBIS). Therefore, it is possible that pre-service teachers’ self-efficacy is particularly high for students with disabilities. During the special education coursework, participants may have been more inclined to associate problematic behaviors as a manifestation of a student’s disability, and behavior management approaches they have been taught in their TEPs could serve as a prescriptive method for modifying behaviors. In contrast, expectations for future behavioral problems might be higher for students without LD for whom participants may be unaware of evidence-based intervention strategies to improve behaviors.

Self-efficacy is a construct based on Bandura’s (1997) social learning theory which he defined as “beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments” (p. 3). Pre-service teachers have different ideas about the nature of inappropriate behaviors and how to control them compared to in-service teachers because of their lack of actual field experience (Martin & Yin, 1999). Self-efficacy studies on pre-service and in-service teachers have shown pre-service teachers have greater fear of intervening in situations of teacher-student conflict than experienced teachers and they have a more external locus of control with regard to behavioral challenges (Brouwers, & Tomic, 2000; Dicke, Parker, Marsh, Kunter, Schmeck, & Leutner, 2014; Savolainen, Engelbrecht, Nel, & Malinen, 2012). The data from this study suggests a consistent pattern with pre-service
teachers rating poor behavior as a highly stable outcome because they tend to assume a more external locus of control regarding students’ behaviors.

Qualitative data from the open-ended question on expectation of future behavioral outbursts showed that pre-service teachers felt very little control over student behavior of students without LD. Comments included, “If he’s already comfortable with yelling at his teacher, he will do it again,” “The student resents the teacher and is not likely to get over it,” and “He will most likely do it again because he does not want to get help or even try to understand the content.” Interestingly, pre-service teachers rated students without LD as more likely to act out in the future, but there was no significant difference in how they responded to expectations of future academic failure. Again, this discrepancy may be due to the fact that new educators have lower levels of self-efficacy with regard to managing student behaviors as opposed to facilitating academic success. As with the trend of higher perceived control over Native Hawaiians with LD, these responses also point to the fact that the participants have chosen special education career paths and are particularly committed to improving outcomes for youth with special needs.

An explanation for pre-service teachers’ lower sense of control and frustration levels for Caucasian students with LD (compared to Native Hawaiians students with LD) may be that pre-service teachers are less likely to assume that the Caucasian student was inaccurately identified with LD due to deficit thinking or racial bias in the referral and testing. For the Caucasian student they might be more inclined to believe the LD identification was actually a neurological processing disorder, which would have more complex implications for improving academic outcomes. On the other hand, they might presume the LD identification for the Native Hawaiian student could actually be a learning differences rooted in cross-
cultural nuances, which they could readily address through modifications in instruction, or a multi-tier instructional approach such as Response to Intervention. Therefore, pre-service teachers might view the Caucasian student with LD as more limited in academic potential because his deficits are rooted in an actual disability as opposed to inequitable instruction or cultural bias.

**Academic Versus Behavioral Scenarios**

Overall, LD status and race did not appear to have a main effect on most attributional responses of pre-service teachers in scenarios of academic or behavioral failure. Regarding locus of control, pre-service teachers had somewhat neutral ratings for both control over academic outcomes ($M = 3.51, SD = 1.26$) and control over behavioral outcomes ($M = 3.44, SD = 1.36$). Participants generally had lower levels of frustration for both academic failure and problematic behavior ($M = 2.75, SD = 1.06$ and $M = 2.89, SD = 1.09$, respectively) compared to empathy levels ($M = 3.71, SD = 0.96$ and $M = 3.71, SD = 1.09$, respectively). Pre-service teachers also appeared to feel future failure was a moderately stable condition across both the academic and behavioral scenarios ($M = 3.75, SD = 1.06$ and $M = 4.19, SD = 0.91$). General trends in the direction of responses were similar for the attributional responses to both scenarios suggesting no meaningful differences in how pre-service teachers perceive of locus of control, controllability, or stability in instances of academic failure versus problematic behavioral.

**Implications**

New educators are tasked with teaching an increasingly diverse group of students with a greater range of abilities than in the past. It is imperative that pre-service teachers carefully examine the indirect cues they might be giving to students, especially those with LD and
students from CLD backgrounds that can negatively shape their own beliefs about inherent competence. The pre-service teachers in this study reported relatively higher levels of control and frustration towards Caucasian students without LD, and higher expectations of future behavioral challenges for students without LD. The possibility that pre-service teachers in Hawaii may be assuming rescuer identities for populations of students who have been historically underestimated does not necessarily pose any detrimental implications for student outcomes. However, the belief that problematic behavior is more likely to recur from students without LD suggests pre-service teachers need more explicit training in areas of establishing constructive communication with families and colleagues to problem-solve behavioral concerns (Tran, 2014). The impetus for behavioral challenges vary for each student and reaching out to those closest to the child as well as resources within the school can help identify the best approach for reducing future disruptions (Pas, Bradshaw, & Hershfeldt, 2012). In addition, TEPs should be well-versed in universal design for learning as well as tier I strategies for intervention (Allsopp, Farmer, & Hoppey, 2016). Pre-service teachers should also be made aware that school-based behavioral health resources; PBIS as a school wide policy; and an individualized, strengths-based approach to create strategies that identify and draw upon the strengths of the students, their families, and their communities can benefit all students exhibiting problem behaviors, not just those with disabilities (Reinke, Herman, & Stormont, 2013; Yoshikawa, Aber, & Beardslee, 2012).

Frustration with students who characterize failure syndrome can potentially motivate teachers to spend extra effort encouraging and re-conditioning such students to persist following academic failure (Entwisle & Alexander, 1988; Ferguson, 1998; Rist, 2000). The results of this study indicate that pre-service teachers have a sense of accountability to
improve the academic outcomes for Native Hawaiian students with LD, as suggested by their high perception of control over future academic success and their frustration with the student’s failure. Responses regarding teacher control included, “The student is just not interested. The teacher needs to use multiple teaching strategies to get him engaged” and “I believe that something during instruction needs to be incorporated for this student such as a focus chart or self-checking. He may also respond well to small group instruction.” These comments indicate that participants seem to be highly aware that differentiation strategies can improve student performance for students with CLD backgrounds.

Conversely, the interaction effects showed relatively low levels of frustration and control over academic outcomes for Caucasian students with LD. These attributional responses imply pre-service teachers might be less willing to expend additional instructional effort for Caucasian students with LD because they do not feel that they can significantly influence their academic success. Furthermore, low levels of frustration suggest that pre-service teachers do not feel very upset about the academic failure of Caucasian students with LD, which implies they believe failure is expected for these students. TEPs should include early instruction on differentiation strategies, culturally responsive teaching, and deficit thinking theory (with respect to race and disability) in order to prepare future educators to approach all students’ academic failure with optimism and creativity rather than apathy or powerlessness.

The high expectation of future problematic behavior for students without LD may be linked to insufficient training in behavioral interventions. The high expectation of future behavioral outbursts of Caucasian students without LD in particular can indirectly send the message to these students that disrespectful behavior is expected from them. If teachers do not
make a concerted effort to help a specific child correct inappropriate behavior, the child might assume he/she does not have the potential to be any better. When children receive differential treatment, they learn that the expectations are lowered for them and they lower their standards for behavior as well. Children of all perceived ability levels should be explicitly conditioned to believe that they are in control of improving their outcomes. Researchers have advocated for an intervention termed attribution retraining to improve student academic achievement and behavior through the promotion of positive thinking (Chodkiewicz & Boyle, 2014; Cooper, 2015; Hudley et al., 1998). Hudley et al. (1998) found that attribution retraining interventions reduced peer directed aggression of students in four elementary schools in Southern California. The researchers collected measures of children’s behavior and self-reports of attributions for 12 months following the intervention to assess changes in social cognition and social behavior. Results suggested that improvements in behavior were related to changes in participants’ attributions.

The social and emotional aspects of education often referred to as “non-cognitive factors” and “soft skills” have gained attention in research and school-wide policy as important drivers of student achievement (Lawlor, 2016). Macklem (2014) insisted schools are, in fact, one of the primary settings where social-emotional learning (SEL) can be promoted. Weissberg (2015) defined SEL as the “processes through which students acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions” (p. 185). Hamedani and Darling-Hammond (2015) used in-depth case studies of three urban, socioeconomically and racially diverse small public high schools, a student survey, and a comparison of student
survey results at schools implementing school-wide SEL programs ($n = 363$) to a national sample of students ($n = 2063$) to examine the ways in which school-wide SEL could be implemented and how these efforts shaped students’ educational experiences. Compared to students in the national comparison sample, students in SEL schools were more likely to agree that teachers value students, more likely to express ambitious goals for higher education; more likely to receive support for these goals, and more likely to say that their teachers praised their effort encouraging a growth mindset. They found that an expanded vision of SEL that includes social justice education to develop social responsibility and resilience can empower the student communities they serve. Pre-service teachers in Hawaii might benefit from learning how to initiate and implement similar culturally relevant, asset-based SEL programs in schools they serve to enhance the behavioral outcomes of all students.

This study on pre-service teachers’ responses to student academic failure and problematic behavior is relevant and useful to stakeholders designing and delivering TEPs as well as the pre-service teacher participants because the key findings shed light on important patterns of pre-service teachers’ attributional biases. Social validity refers to the applied value of a study’s findings and whether it will have a palpable impact on improving conditions for others (Kazdin, 2005). In terms of social validity, the most significant finding in this study was pre-service teachers’ higher expectation of future behavioral outbursts for students without LD. Partial eta squared was used to measure effect size because the analyses involved more than one predictor and partial eta squared is the variance explained by a given variable of the variance remaining after excluding variance explained by other predictors. Based on Cohen’s (1988) designation of effect sizes (0.01=small, 0.06=medium, 0.14=large) the effect size for the interaction effects for LD status and race with control and frustration were small
(0.04, 0.04 respectively) and medium (0.06) for the main effect for LD with expectation of future failure.

**Limitations**

The results of the study should be interpreted with consideration of multiple limitations. Due to time constraints and accessibility, the selection of only 85 participants drawn from only two TEPs in Hawaii was not random, which is a threat to external validity because the participants may not be representative of the population of pre-service teachers in the nation or state. Furthermore, my role as the researcher and instructor of a portion of the participants may have skewed their responses to attempt to answer in a socially desirable manner. Additionally, the hypothetical vignettes asking for self-reported Likert scale responses were unable to authentically simulate the dynamics of a real classroom where locus of causality, perceptions of controllability, and expectancies for future failure would vary heavily depending on the more complex relationship between the teacher and students. The uneven distribution of the types of surveys could have been avoided with more careful attention to stratified random sampling to assure that roughly equal numbers were completed. Also, the overall 40% response rate of TEP instructors may have been due to the short (one week) response time given to TEP instructors for confirmation and my limited availability to disperse the instrument in person. Distributing more on-line surveys and collecting surveys from a larger population might have increased the sample size, thereby increasing chances of significance.

This study was designed using the framework from Weiner and Kukla’s (1970) seminal attribution study. Their study demonstrated that teachers’ emotions towards particular students had direct correlations with the type of positive or negative evaluative feedback they
offered them, whether they gave or withheld help, and whether they offered praise or blame. The researchers postulated that teachers’ emotional and behavioral reactions to student outcomes have a direct impact on the behavior of students influencing children’s future actions and self-perceptions. Weiner’s attribution theoretical framework presumes there are three causal factors with underlying psychological properties:

- **Locus**: whether the cause originates within the person or the environment
- **Stability**: whether the cause is stable or unstable
- **Controllability**: whether the cause is under the volitional control of the person, which is also linked to responsibility

These epistemological assumptions are inherent in attribution theory and are based on the work of Kelley (1967, 1971, 1972) who posited that causal judgments are influenced by causal beliefs a person holds about the relationship between an observed event and the perceived cause of that event. One cannot ignore the importance of considering how these beliefs have been formed by past experiences. However, attribution studies rarely address this qualitative aspect of interpreting causal judgments. The epistemological core of the attribution approach is very limited in its dimensions.

Another limitation of this attribution study design is the use of locus of causality, stability, controllability and the three primary dimensions of causality in achievement related contexts. These three dimensions are vague constructs that can vary significantly across cultures. In fact, a qualitative study found that Native Americans tend to attribute success to people, families, or teams (Powers & Rossman, 1984). Therefore, success and failure may be viewed as a result of both internal and external factors instead of solely dependent upon individual characteristics.
Recommendations for Future Research

Future research might examine what characteristics of pre-service teachers might influence responses. A broader range of participants could include more diversity in the areas of age, gender, previous exposure working with or interacting with people with LD in schools, years in higher education, socioeconomic status, and race. In addition to involving a larger and more diverse sample of participants, future researchers might examine the association between participant characteristics and their attributional responses. For example, researchers might examine whether participants’ socioeconomic status affect responses to student failure. Distribution of the instrument to pre-service teachers at other institutions nationwide might reveal commonalities and differences in the perceptions of students with LD or students of Native Hawaiian ancestry, and potentially imply changes in teacher education program delivery.

Furthermore, the vignettes used in this study only described boys in upper elementary (6th grade), who represent the majority of children identified as LD (US Department of Education, 2013). However, participants might have reacted differently if student gender was included as a variable in the vignettes. In addition, student competency levels were not stated, and explicitly describing the competence level of a student might have impacted the attributional responses for a child with LD described as being highly competent compared to a child with LD described as being highly incompetent. Based on the research that poverty is a greater indicator of likelihood to acquire LD status than race or ethnicity (Phillips & Shonkoff, 2000), using SES as a variable could offer meaningful insight to attributions research.

Future research should also be conducted to explore (a) the attributions of Native
Hawaiian children and children with LD for their own performance and (b) how these children interpret teachers’ attributional messages. An underlying presumption from this study is that children will be impacted by teacher cues that suggest they lack competence and inherent capability to improve. However, a study involving students’ perceptions of teacher cues is needed to further support this assumption. Finally, a chief criticism of attribution literature is the use of vignettes in most of the studies (Aguinis & Bradley, 2014). Attributions of causality in relation to vignettes can be considered arbitrary. When faced with actual incidents of failure or challenging behavior, teachers would make judgments of controllability and stability based on extensive knowledge of the individual involved and the environment. Using qualitative analyses such focus group interviews would allow participants to explain their thought process and clarify their reasoning behind their perceptions about the hypothetical students. Using a sequential mixed methods approach that involves a comprehensive qualitative component would provide more nuanced accounts from participants of why they hold their attributions to different types of learners.

While this study used a small sample size and revealed few statistically significant trends regarding the impact of race and LD status on pre-service teacher attributions, the results do point to some larger sociocultural themes including rescuer identity, deficit thinking, and failure syndrome that should be explicitly addressed in teacher education programs to improve equitable instruction and behavior management of all students. An autoethnographic approach to exploring how personal experience affects pre-service teachers’ attributions towards students with LD and students from CLD backgrounds may help future educators enter the highly dynamic profession of teaching as advocates for every child.
Conclusion

Attributions can play a powerful role in how teachers react to student failure or behavior and students can develop lower perceptions of self-efficacy based off of these cues. This study investigated how student identification as LD/non-LD and Native Hawaiian/Caucasian affected pre-service teachers’ attributional responses for locus of control, stability, and controllability in hypothetical scenarios of student academic failure and behavioral challenges. Although participants’ (a) attributions were significantly impacted by an interaction between race and LD status related to academic performance (especially in the areas of control and frustration) and (b) expectation of future behavioral challenges was significantly impacted by LD status, there were no main effects for race. Attributional responses followed similar patterns across the academic and behavioral scenarios, which included moderate level of control over student outcomes, relatively low levels of frustration, higher levels of empathy, and moderate levels of expectations of future failure. The two TEPs from which participants were drawn appear to have positively influenced pre-service teachers’ perceptions towards Native Hawaiian students with LD regarding control over student success and intrinsic ability of historically marginalized students. TEPs may consider more instruction on attribution retraining, classroom management, SEL, and collaborative practices to improve behavioral outcomes for all students.
Appendix A. Recruitment Announcement and Consent Form

October 1, 2015

Dear _______________________,

My name is Christina Keaulana and I am conducting a research project as part of the requirements for my PhD in Exceptionalities at UH Manoa. The purpose of this study is to investigate pre-service teachers’ attributional responses for academic failure and behavioral challenges of hypothetical students identified with or without a learning disability and with different cultural and linguistic backgrounds.

If you agree to participate, I will ask you for the number of students in your class and request a time/date that would suit your needs to distribute and collect:

1. a set of 2 different half page vignettes, which I will distribute randomly to your students;
2. a pre-service teacher attribution survey for your students to complete after reading the vignettes; and
3. consent forms which will need to be signed by each participant;

I anticipate I will need no more than 15 minutes of your students’ time for the entire process.

Thank you, in advance, for your assistance in my research project. Please respond by October 15, 2015 if you would be willing to allow me to come to your class and include dates/times that would be most ideal for you.

Sincerely,

Christina Keaulana
Consent to Participate in Research Project:

My name is Christina Keaulana. I am a graduate student at the University of Hawaii at Manoa in the Special Education Department. I am doing a research project as a requirement for earning my PhD degree. The purpose of my project is to investigate pre-service teachers’ responses to academic failure and behavioral challenges of hypothetical students.

Activities and Time Commitment: If you participate in this project, you will read a half page vignette describing a hypothetical student and a classroom scenario. You will respond to four questions asking you to rate perceived level of control, frustration, empathy, and expectations of future academic/behavioral failure. There are also four open-ended clarification questions asking you to briefly explain why you selected that rating. You will also answer an anonymous participant survey on gender, age, ethnicity, years completed of your teacher education program (TEP), and type of TEP. The total time required for participating in this study will be about 15 minutes.

Benefits and Risks: There will be no direct benefit to you for participating in this interview. The results of this project may help improve the teacher education programs in Hawaii to benefit future students. I believe there is little risk to you in participating in this research project. You may become stressed or uncomfortable answering any of the interview questions or discussing topics with me during the interview. If you do become stressed or uncomfortable, you can skip the question or take a break. You can also stop the interview or you can withdraw from the project altogether.

Privacy and Confidentiality: I will keep all information in a safe place. Only my University of Hawaii advisor and I will have access to the information. Other agencies that have legal permission have the right to review research records. The University of Hawaii Human Studies Program has the right to review research records for this study. When I report the results of my research project, I will not use your name. I will not use any other personal identifying information that can identify you. I will use pseudonyms (fake names) and report my findings in a way that protects your privacy and confidentiality to the extent allowed by law.

Voluntary Participation: Your participation in this project is completely voluntary. You may stop participating at any time. If you stop being in the study, there will be no penalty or loss to you.

Questions: If you have any questions about this study, you can contact me at ctk8@hawaii.edu or 808-455-0480. You may also contact my adviser, Dr. Bryan Cook, at bgcook@hawaii.edu or 808-741-9439. If you have questions about your rights as a research participant, you may contact the UH Human Studies Program at 808-956-5007 or uhirb@hawaii.edu.

Please keep the section above for your records.
If you agree to participate in this project, please sign and date this signature page and return it to:

c tk8@hawaii.edu

Signature(s) for Consent:

I give permission to join the research project entitled,

AN EXAMINATION OF PRE-SERVICE TEACHERS’ ATTRIBUTIONS

Please initial next to either “Yes” or “No” to the following:

_____ Yes _____ No  I consent to participate in the survey portion of this research.

_____ Yes _____ No  I consent to be audio-recorded for the interview portion of this research.

Name of Participant (Print): _______________________________________

Participant’s Signature: ____________________________________________

Signature of the Person Obtaining Consent: __________________________

Date: __________________________
Appendix B. Vignettes

**Vignette 1:** Mana is a 6th grade student diagnosed with a learning disability. Mana’s family has lived on Native Hawaiian homestead in Nanakuli for 4 generations and his primary language is Hawaiian Pidgin. He has failed a test on percentages after a 4 week-long unit study of ratios, rates and percentages. He has been offered free tutoring sessions during recess and after school after failing a previous unit test, but has stated he was unable to attend due to other commitments. Mana is easily distracted in class, often appears off task, and has a tendency to speak with peers during teacher instruction. During a pre-test review he appeared disinterested and was not looking at the Powerpoint presentation the majority of the time the teacher was reviewing the content. When asked why he failed the test, he explained that he did not understand the material, the directions were unclear, and the content is not relevant to the type of job he wants to pursue.

**Vignette 2:** Tim is a 6th grade student diagnosed with a learning disability. He recently moved from Ohio because his father was re-stationed in Oahu for his job as a Navy officer. He has failed a test on percentages after a 4 week-long unit study of ratios, rates and percentages. He has been offered free tutoring sessions during recess and after school after failing a previous unit test, but has stated he was unable to attend due to other commitments. Tim is easily distracted in class, often appears off task, and has a tendency to speak with peers during teacher instruction. During a pre-test review he appeared disinterested and was not looking at the Powerpoint presentation the majority of the time the teacher was reviewing the content. When asked why he failed the test, he explained that he did not understand the material, the directions were unclear, and the content is not relevant to the type of job he wants to pursue.
**Vignette 3:** Mana is a 6th grade student diagnosed with a learning disability. Mana’s family has lived on Native Hawaiian homestead in Nanakuli for 4 generations and his primary language is Hawaiian Pidgin. He has failed a test on percentages after a 4 week-long unit study of ratios, rates and percentages. He has been offered free tutoring sessions during recess and after school after failing a previous unit test, but has stated he was unable to attend due to other commitments. Mana is easily distracted in class, often appears off task, and has a tendency to speak with peers during teacher instruction. During a pre-test review he appeared disinterested and was not looking at the Powerpoint presentation the majority of the time the teacher was reviewing the content. During a post-review of the test, the teacher asked him to come to the board to work through a problem step-by-step. He responded, “You’re a crappy teacher, I hate this class!” Mana explained that the teacher is boring and feels like she singles him out to answer questions he does not know the answer to because she wants to intentionally embarrass him.

**Vignette 4:** Tim is a 6th grade student diagnosed with a learning disability. He recently moved from Ohio because his father was re-stationed in Oahu for his job as a Navy officer. He has failed a test on percentages after a 4 week-long unit study of ratios, rates and percentages. He has been offered free tutoring sessions during recess and after school after failing a previous unit test, but has stated he was unable to attend due to other commitments. Tim is easily distracted in class, often appears off task, and has a tendency to speak with peers during teacher instruction. During a pre-test review he appeared disinterested and was not looking at the Powerpoint presentation the majority of the time the teacher was reviewing the content. During a post-review of the test, the teacher asked him to come to the board to work through a problem step-by-step. He responded, “You’re a crappy teacher, I hate this class!” Tim explained that the teacher is boring and feels like she singles him out to answer questions he does not know the answer to because she wants to intentionally embarrass him.
Vignette 5: Mana is a 6th grade student who tends to be one of the lower performing students in his class, but does not receive special education services. Mana’s family has lived on Native Hawaiian homestead in Nanakuli for 4 generations and his primary language is Hawaiian Pidgin. He has failed a test on percentages after a 4 week-long unit study of ratios, rates and percentages. He has been offered free tutoring sessions during recess and after school after failing a previous unit test, but has stated he was unable to attend due to other commitments. Mana is easily distracted in class, often appears off task, and has a tendency to speak with peers during teacher instruction. During a pre-test review he appeared disinterested and was not looking at the Powerpoint presentation the majority of the time the teacher was reviewing the content. When asked why he failed the test, he explained that he did not understand the material, the directions were unclear, and the content is not relevant to the type of job he wants to pursue.

Vignette 6: Tim is a 6th grade student who tends to be one of the lower performing students in his class, but does not receive special education services. He recently moved from Ohio because his father was re-stationed in Oahu for his job as a Navy officer. He has failed a test on percentages after a 4 week-long unit study of ratios, rates and percentages. He has been offered free tutoring sessions during recess and after school after failing a previous unit test, but has stated he was unable to attend due to other commitments. Tim is easily distracted in class, often appears off task, and has a tendency to speak with peers during teacher instruction. During a pre-test review he appeared disinterested and was not looking at the Powerpoint presentation the majority of the time the teacher was reviewing the content. When asked why he failed the test, he explained that he did not understand the material, the directions were unclear, and the content is not relevant to the type of job he wants to pursue.
Vignette 7: Mana is a 6th grade student who tends to be one of the lower performing students in his class, but does not receive special education services. Mana’s family has lived on Native Hawaiian homestead in Nanakuli for 4 generations and his primary language is Hawaiian Pidgin. He has failed a test on percentages after a 4 week-long unit study of ratios, rates and percentages. He has been offered free tutoring sessions during recess and after school after failing a previous unit test, but has stated he was unable to attend due to other commitments. Mana is easily distracted in class, often appears off task, and has a tendency to speak with peers during teacher instruction. During a pre-test review he appeared disinterested and was not looking at the Powerpoint presentation the majority of the time the teacher was reviewing the content. During a post-review of the test, the teacher asked him to come to the board to work through a problem step-by-step. He responded, “You’re a crappy teacher, I hate this class!” Mana explained that the teacher is boring and feels like she singles him out to answer questions he does not know the answer to because she wants to intentionally embarrass him.

Vignette 8: Tim is a 6th grade student who tends to be one of the lower performing students in his class, but does not receive special education services. He recently moved from Ohio because his father was re-stationed in Oahu for his job as a Navy officer. He has failed a test on percentages after a 4 week-long unit study of ratios, rates and percentages. He has been offered free tutoring sessions during recess and after school after failing a previous unit test, but has stated he was unable to attend due to other commitments. Tim is easily distracted in class, often appears off task, and has a tendency to speak with peers during teacher instruction. During a pre-test review he appeared disinterested and was not looking at the Powerpoint presentation the majority of the time the teacher was reviewing the content. During a post-review of the test, the teacher asked him to come to the board to work through a problem step-by-step. He responded, “You’re a crappy teacher, I hate this class!” Tim explained that the teacher is boring and feels like she singles him out to answer questions he does not know the answer to because she wants to intentionally embarrass him.
Appendix C: Surveys

Pre-service Teacher Attribution Survey (Academic)

The purpose of the study is to examine the similarities and differences in participants’ responses to the boys described in the vignettes. All responses are completely confidential and anonymous. Please select one point on each scale that most accurately represents your responses to the hypothetical case you just read.

* Required

Which vignette number are you answering these questions for? *
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8

How much do you think expending extra instructional effort and time with this child will result in more positive outcomes in the future? *
Interpret the rating as: 1=very little; 5=very much
- 1 (very little)
- 2 (little)
- 3 (neutral)
- 4 (much)
- 5 (very much)

Briefly explain why you selected the response in the question above.

How much frustration do you feel towards this child? *
Interpret the rating as: 1=very low level of frustration; 5=very high level of frustration
- 1 (very low level of frustration)
- 2 (low level of frustration)
- 3 (moderate level of frustration)
- 4 (high level of frustration)
- 5 (very high level of frustration)

Briefly explain why you selected the response in the question above.

How much empathy do you feel towards this child? *
Interpret the rating as: 1=very low level of empathy; 5=very high level of empathy
- 1 (very low level of empathy)
- 2 (low level of empathy)
- 3 (moderate level of empathy)
- 4 (high level of empathy)
- 5 (very high level of empathy)
Briefly explain why you selected the response in the question above.

How likely is it that this child will fail again? *

Interpret the rating as: 1=very unlikely; 5=very likely
  o 1 (very unlikely)
  o 2 (unlikely)
  o 3 (neutral)
  o 4 (likely)
  o 5 (very likely)

Briefly explain why you selected the response in the question above.

The following four questions are demographic questions about yourself that will remain confidential and anonymous. *

Gender
  o Male
  o Female

Race/Ethnicity *
If you identify with more than one race, please select ONE that you most strongly identify with
  o American Indian or Alaska Native
  o Asian
  o Black or African American
  o Caucasian
  o Native Hawaiian/Other Pacific islander
  o Hispanic or Latino
  o Other:

What is your age? *

How many semesters of your Teacher Education Program have you completed? *
  o 0
  o 1
  o 2
  o 3
  o Other:

Which Teacher Education Program do you plan to complete? *
  o UHM Dual Elementary/SPED
  o UHM ESEE
  o UHM Elementary Education
  o LCC Alternative Certification Program
  o LCC Associate in Arts in Teaching
  o LCC SPED Certificate
  o Other:

Pre-service Teacher Attribution Survey (Behavioral)
The purpose of the study is to examine the similarities and differences in participants’ responses to the boys described in the vignettes. All responses are completely confidential and anonymous. Please select one point on each scale that most accurately represents your responses to the hypothetical case you just read.

* Required

Which vignette number are you answering these questions for? *
- o 1
- o 2
- o 3
- o 4
- o 5
- o 6
- o 7
- o 8

How much do you think expending extra instructional effort and time with this child will result in more positive outcomes in the future? *
Interpret the rating as: 1=very little; 5=very much
- o 1 (very little)
- o 2 (little)
- o 3 (neutral)
- o 4 (much)
- o 5 (very much)

Briefly explain why you selected the response in the question above.

How much frustration do you feel towards this child? *
Interpret the rating as: 1=very low frustration; 5=very high frustration
- o 1 (very low level of frustration)
- o 2 (low level of frustration)
- o 3 (moderate level of frustration)
- o 4 (high level of frustration)
- o 5 (very high level of frustration)

Briefly explain why you selected the response in the question above.

How much empathy do you feel towards this child? *
Interpret the rating as: 1=very low empathy; 5=very high empathy
- o 1 (very low level of empathy)
- o 2 (low level of empathy)
- o 3 (moderate level of empathy)
- o 4 (high level of empathy)
- o 5 (very high level of empathy)

Briefly explain why you selected the response in the question above.

How likely is it that this child will misbehave again? *
Interpret the rating as: 1=very unlikely; 5=very likely
Briefly explain why you selected the response in the question above.
The following four questions are demographic questions about yourself that will remain confidential and anonymous. *

Gender
- Male
- Female

Race/Ethnicity *
If you identify with more than one race, please select ONE that you most strongly identify with
- American Indian or Alaska Native
- Asian
- Black or African American
- Caucasian
- Native Hawaiian/Other Pacific islander
- Hispanic or Latino
- Other:

What is your age? *

How many semesters of your Teacher Education Program have you completed? *
- 0
- 1
- 2
- 3
- Other:

Which Teacher Education Program do you plan to complete? *
- UHM Dual Elementary/SPED
- UHM ESEE
- UHM Elementary Education
- LCC Alternative Certification Program
- LCC Associate in Arts in Teaching
- LCC SPED Certificate
- Other:
Appendix D. Institutional Review Board Approval Letter

October 15, 2015

TO: Christina Tsien Keaulana
    Bryan Cook
    Principal Investigators
    Special Education

FROM: Denise A. Lin-DeShetler, MPH, MA
      Director

SUBJECT: CHS #23451- “An Examination of the Impact of Students’ Learning Disability Status and Cultural and Linguistic Background on Pre-Service Teachers’ Attributions”

This letter is your record of the Human Studies Program approval of this study as exempt.

On October 15, 2015, the University of Hawai‘i (UH) Human Studies Program approved this study as exempt from federal regulations pertaining to the protection of human research participants. The authority for the exemption applicable to your study is documented in the Code of Federal Regulations at 45CFR 46.101(b)(Exempt Category 2).

Exempt studies are subject to the ethical principles articulated in The Belmont Report, found at http://www.hawaii.edu/irb/html/manual/appendices/A/belmont.html.

Exempt studies do not require regular continuing review by the Human Studies Program. However, if you propose to modify your study, you must receive approval from the Human Studies Program prior to implementing any changes. You can submit your proposed changes via email at uhirb@hawaii.edu. (The subject line should read: Exempt Study Modification.) The Human Studies Program may review the exempt status at that time and request an application for approval as non-exempt research.

In order to protect the confidentiality of research participants, we encourage you to destroy private information which can be linked to the identities of individuals as soon as it is reasonable to do so. Signed consent forms, as applicable to your study, should be maintained for at least the duration of your project.

This approval does not expire. However, please notify the Human Studies Program when your study is complete. Upon notification, we will close our files pertaining to your study.

If you have any questions relating to the protection of human research participants, please contact the Human Studies Program at 956-5007 or uhirb@hawaii.edu. We wish you success in carrying out your research project.
References


Tran, Y. (2014). Addressing reciprocity between families and schools: Why these bridges are instrumental for students’ academic success. *Improving Schools, 17*(1), 18-29.


