UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

DIFFERENCES IN ETHNIC IDENTITY GROWTH TRAJECTORIES AMONG NATIVE AMERICAN UNDERGRADUATE STUDENTS

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

Degree of

DOCTOR OF PHILOSOPHY

By

ALISE S. DABDOUB
Norman, Oklahoma
2021

Downloaded from SHAREOK. Persistent Handle URL: https://hdl.handle.net/11244/330213

DIFFERENCES IN ETHNIC IDENTITY GROWTH TRAJECTORIES AMONG NATIVE AMERICAN UNDERGRADUATE STUDENTS

A DISSERTATION APPROVED FOR THE
DEPARTMENT OF PSYCHOLOGY

BY THE COMMITTEE CONSISTING OF

Dr. Lori Anderson Snyder, Chair

Dr. Natalie Youngbull

Dr. Shane Connelly

Dr. Jorge Mendoza

Dr. Lara Mayeux

© Copyright by ALISE S. DABDOUB 2021
All Rights Reserved.

I would like to dedicate this dissertation to my husband Andrés Dabdoub and my family. I could not have done this without the support of my husband who has loved and supported me unconditionally. In addition, I just so happen to have the best mom (Sue Kueking), grandma (Penelope Grindle), and sister (Alaina Kottman) in the entire world. I'm truly lucky to have had such strong women in my life and without them I wouldn't be here.

Land Acknowledgement

I write this paper on the land that is today know as Oklahoma and as a student at the University of Oklahoma. As such, it is important to acknowledge that this University is situated on stolen land. I would like to place myself and the work that I do in the given historical context as well as acknowledge my relationship with the land that I currently inhabit, acknowledging that my inhabitance of this land is a direct result of both past and ongoing settler colonialism. Furthermore, I would like to bring awareness to the land acknowledgement crafted by the University of Oklahoma.

Long before the University of Oklahoma was established, the land on which the University now resides was the traditional home of the “Hasinais” Caddo Nation and “Kirikirʔi:s” Wichita & Affiliated Tribes.

We acknowledge this territory once also served as a hunting ground, trade exchange point, and migration route for the Apache, Comanche, Kiowa and Osage nations.

Today, 39 tribal nations dwell in the state of Oklahoma as a result of settler and colonial policies that were designed to assimilate Native people.

The University of Oklahoma recognizes the historical connection our university has with its indigenous community. We acknowledge, honor and respect the diverse Indigenous peoples connected to this land. We fully recognize, support and advocate for the sovereign rights of all of Oklahoma’s 39 tribal nations. This acknowledgement is aligned with our university’s core value of creating a diverse and inclusive community. It is an institutional responsibility to recognize and acknowledge the people, culture and history that make up our entire OU Community.

Acknowledgements

I would like to acknowledge all the people who have helped me throughout my doctoral journey and more specifically with this document. First, I would like to acknowledge and thank my advisor Dr. Lori Snyder for always listening to, helping, and supporting me. I couldn't have asked for, nor received a better advisor. Next, I would like to thank my committee including Dr. Natalie Youngbull, Dr. Jorge Mendoza, Dr. Shane Connelly, and Dr. Lara Mayeux. Your feedback throughout this process has been invaluable and I appreciate the time that you have put forth to help me with this study. I would like to thank my lab mates for being a sounding board, a practice audience, and just overall supportive friends. Thank you to Jessica Franklin, Katie Holloway, and Cooper Delafield. I would like to thank all my "babysitters", my friends who have sat with me to co-work (or zoom-work) and keep me on track to finish my dissertation. Thank you to Tamara Matthews, Cassidy Krantz, Marina Mery, Keith Strasbaugh, Colleen Standish, Alisha Hamel, Cecely Jones, and Sara Espinoza. You all are the absolute best! Lastly, I would like to give a special thank you to someone I'm so lucky to call not only a research partner but a friend, Stephanie Cross. Thank you so much for always listening to and guiding me. I can't wait to see what we achieve together in the future.

Table of Contents

Land Acknowledgement v

Acknowledgements vi

List of Tables ix

List of Figures x

Abstract xi

Introduction 1

Ethnic Identity 2

Social Identity Theory 4

Tribal Critical Race Theory 8

Ethnic Identity Development and Cultural Experiences 10

Ethnic Identity Development and Campus Experiences 13

Ethnic Identity and Academic Outcomes 17

Method 18

Participants and Procedures 18

Survey Design and Data Management 19

Analysis 21

Measures 24

Ethnic Identity 24

Cultural Immersion and Connection 25

Cultural Immersion 25

Cultural Connection 25

Campus Climate and Experiences 26

Campus Comfort 26
Campus experience with race 26
Campus classroom experience with race 27
Experience with faculty 28
Explicit discrimination 28
Perceptions of personal versus group discrimination 29
Academic Variables 30
Demographic Variables 30
Ethnicity 30
Gender 31
Hometown Size 31
Major 31
Tribal Nation 32
Results 32
Preliminary Analyses 32
Descriptive Statistics and Correlations 32
Hypothesis 1 33
Discussion 39
References 54

List of Tables

Table 1. List of Participants' Self-Reported Tribal Nations..... 63

Table 2. T-test Comparison of Demographic factors for Participants Who Were Included and Excluded in This Study..... 64

Table 3. Descriptive Statistics for all Study Variables..... 65

Table 4. Correlations Among Study Variables..... 66

Table 5. Model Comparison Between Models Based on Number of Trajectory Classes 67

Table 6. Fit Statistics for Model Comparison..... 68

Table 7. Group Differences between Ethnic Identity Trajectory Classes 69

Table 8. Proportion of Responses for Cultural Connection Qualitative Questions..... 70

List of Figures

Figure 1. Survey Flow 71

Figure 2. Class 1- Low Ethnic Identity Level 72

Figure 3. Class 2- Moderate Ethnic Identity Level 73

Figure 4. Class 3- High Ethnic Identity Level..... 74

Abstract

Having a strong ethnic identity has been shown to provide positive outcomes such as helping to buffer against discrimination, ease culturally related anxiety, and increase academic achievement (Altschul, Oyserman, & Bybee, 2006; Lee, 2003; McNeil, Kee, & Zvolensky, 1999). Research has demonstrated that college can serve as a transition point that encourages exploration and development of one's ethnic identity (Syed & Azmitia, 2009). This may be especially critical for Native American college students given the subjugative history between the U.S. government, institutions of higher education, and Tribal Nations. Thus, it is important to examine how Native American ethnic identity interacts with the climate of universities. Therefore, this study examined changes in Native American students' ethnic identity over the course of their college careers. In addition, this study probed how immersion in both tribal and campus culture affected ethnic identity for these students. Lastly, markers of academic success (GPA and persistence rate) were assessed in relation to students' ethnic identity levels. Results revealed three distinct ethnic identity trajectories with low, moderate, and high intercepts. These trajectories did not change over the course of college. Those with high ethnic identity trajectories demonstrated higher levels of campus comfort and better experiences with faculty than those low in ethnic identity group, indicating membership in supportive campus communities. However, those with high ethnic identity levels also reported poorer race-based interactions on campus and in classrooms. They also reported higher levels of discrimination and stress due to pressures associated with being Native American, and ultimately lower GPAs than those with lower ethnic identity trajectories. Persistence rate did not differ by ethnic identity level.

Introduction

Ethnic identity development is an important process for non-majority group members, as having high levels of ethnic pride has been shown to produce a number of positive outcomes including a greater sense of community, higher self-esteem, and resilience against discrimination (Kenyon & Carter, 2011; Phinney & Chavira, 1992; Romero, Edwards, Fryberg & Orduña, 2014). Mechanisms by which ethnic identity develops, and factors that hinder its development have been well studied in adolescent populations (Lysne & Levy, 1997; Newman, 2005; Umaña-Taylor, Gonzales-Backen & Guimond, 2009). However, Phinney (2006) noted that it is likely that ethnic identity development is a lifelong process which may ebb and flow with individual's various life circumstances. Thus, it is important to study ethnic identity development in adult populations, such as college students, who are undergoing an important and life altering experience.

Many studies have examined ethnic identity development and/or ethnic pride in college aged students. Specifically, studies have examined Asian American, African and Black American, as well as Latinx Americans' ethnic identities change over the course of their college careers (Guardia, & Evans, 2008; Lee & Yoo, 2004; Phinney & Alipuria, 1990; Torres, 2003). However, to my knowledge, no studies have examined longitudinal changes in ethnic identity over the course of college for Native American students. This is problematic as Native American peoples are often excluded from research or lumped into an "other" category due to sample size constraints, structural reporting mechanisms, and/or subjective decisions (Shotton, Lowe & Waterman, 2013). This exclusion only leads to the further marginalization of Native American peoples by leaving them out of important conversations that may lead to systemic change.

Studying ethnic identity across the course of one's college career is of special concern for Native American students as they are simultaneously politicized via discussions on affirmative action or the notion that they may receive special privileges for being Native American, yet often forgotten when it comes to the reporting of statistics or the delegation of funds and resources (Brayboy, 2005; Shotton et al., 2013). Furthermore, institutions of higher education have a precarious history in their relations with Indigenous populations. Specifically, formal education has operated in an imperialist fashion to assimilate Native American students into majority society by de-emphasizing Indigenous ways of thinking/knowing and emphasizing Western-Eurocentric knowledge and thought processes as the gold standard (Brayboy, 2005). Since Native American culture is central to Native American identity (Brayboy, 2005) it is important to examine how Native American ethnic identity interacts with the climate and teachings of universities and colleges.

Using the lens of both Social Identity Theory (Tajfel, 1989) and Tribal Critical Race Theory (Brayboy, 2005), it is the intention of the present study to examine changes in Native American students' ethnic identity over the course of their college careers. Furthermore, the study will investigate how an individual's level of culture immersion affects ethnic identity for university students. In addition, this study will examine how Native American students experience campus differently based on their ethnic identity level. Lastly, markers of academic success (i.e., GPA and persistence rate) will be assessed in relation to how a student's ethnic identity level affects them.

Ethnic Identity

Ethnic identity has been conceptualized in a number of ways, however, many of these conceptualizations stem from Erickson's (1968) work on ego development. Erickson defined

identity as a psychosocial construct in which the person seeks to create a transitive understanding of who they are as a person, including both how they see themselves and how they are viewed by others. Erickson (1968) posited that identity was created through a combination of both crisis and commitment. Crisis is a process where the individual explores their identity and alternative identities. Commitment is the individual deciding upon and sticking with the identity.

Erickson's work was later extended by Marcia (1966) who proposed four ego identity statuses that one may achieve based on the presence or absence of exploration (crisis) and commitment. These statuses include a diffuse identity, when one has neither explored nor made a commitment; a foreclosed identity, when one has made a commitment without exploration; moratorium, when one is in the process of exploring but has not yet made a commitment; and an achieved identity, when one has both explored and committed to an identity (Marcia, 1966).

Phinney and Alipuria (1990) noted that both of these prior identity theories did not include the concept of ethnic identity. Furthermore, Erickson went as far as to suggest that the disposition to categorize oneself into groups such as ethnic identity (amongst other categories) was an unfortunate part of the human existence (Erikson, 1975). Phinney and Alipuria (1990) sought to test if this was the case, or if ethnic identity was an integral part of identity. In addition, Phinney and Alipuria (1990) noted that much of the research done with identity used a White-male sample which did not translate to other groups. Another impetus for developing a new measure of ethnic identity stemmed from the fact that many existing identity measures were specific to the group in question, such as research that examined ethnic identity in Black (Cross, 1978) or Asian American peoples (Kim, 1981). Although having group specific measures is useful as it has the ability to capture additional specific features which may differ across groups, it does not allow for the comparison of ethnic identity development between groups, nor does it

allow for ethnic identity to be studied as a general psychological construct. Thus, Phinney and Alipuria (1990) sought to develop a scale which could be used to measure ethnic identity across ethnic groups such that comparisons could be made, in addition to allowing for the study of ethnic identity generally.

Phinney and Ong (2007, p. 1) state that ethnic identity is "derived from a sense of peoplehood within a group, culture, or particular setting." Ethnic identity may also be defined as one's sense of belonging to an ethnic group and the part of one's thinking, perceptions, feelings, and behavior that is due to ethnic group membership (Newman, 2005). Ethnic identity has several key components, but affirmation and belonging are paramount. Both having pride in one's group membership as well as feeling a sense of belonging to one's ethnic group are central to the concept.

Social Identity Theory

Social identity theory (Tajfel & Turner, 1979) posits that individuals differ in terms of the amount of personal meaning they derive from group membership. However, for individuals who strongly identify with a particular group, they may incorporate aspects of that group into their self-concept, which can influence their social perception (Operario & Fiske, 2001). Thus, one's group membership may be a significant source of self-esteem. There are three processes by which social identity theory operates. The first process is categorization which entails assigning oneself (or others) to a mental category for which they are believed to belong (Tajefel & Turner, 1979). Categorization is a typical cognitive process that allows the individual to quickly understand information about the person based on the group into which they are categorized. The second process that occurs in social identity theory is social identification. Social identification occurs when the individual adopts the identity of the group that they believe themselves to

belong to (Tajfel & Turner, 1979). This adoption of group identification allows them to understand how to behave based on the group norms as well as how others might perceive them. Finally, social comparison is when the individual compares their group to other groups (Tajfel & Turner, 1979). This affects an individual's level of self-esteem as their self-esteem is partially derived from group membership, as well as how their group compares to other groups.

Ethnic identity is a facet of social identity that is "part of an individual's self-concept which derives from [their] knowledge of [their] membership of a social group (or groups) together with the value and emotional significance attached to that membership" (Tajfel, 1981, p. 255). Self-esteem derived from ethnic identity comes from an individual categorizing themselves as belonging to a given group, identifying with that group, and then feeling favorable about their group as it compares to other groups (Tajfel & Turner, 1986). Hence, functioning as a source of self-esteem, ethnic identity can bolster a number of outcomes for individuals (Phinney, 1991; Phinney & Chavira, 1992).

Contrary to Erickson's (1975) declaration of the unimportance and negative effect of categorizing oneself by ethnic identity, numerous studies have demonstrated the positive effects of having a fully realized ethnic identity (Ahmed, Kia-Keating & Tsai, 2011; Huang & Stormshak, 2011; Mossakowski, 2003; Phinney & Alipuria, 1990; Romero, Edwards, Fryberg & Orduña, 2014; Schweigman, Soto, Wright & Unger, 2011; Seaton, Scottham, & Sellers, 2006; Smith & Silva, 2011). For example, studies have demonstrated that ethnic identity can act as a buffer for experienced discrimination, depression/suicidal ideation, and culturally related anxiety (Lee, 2003; McNeil, Kee, & Zvolensky, 1999; Phiney & Alipuria, 1987; Walker, Wingate, Obasi, & Joiner Jr, 2008). Therefore, examining ethnic identity is important to understanding an individual's experience, and how it affects various personal outcomes.

Several early studies of ethnic identity development centered around children and adolescents (Bernal, Knight, Garza, Ocampo, & Cota, 1990; Marshall, 1995; Phiney, 1989). The intent of many of these studies was to examine when and how children develop a sense of their ethnicity. In addition, there were attempts at establishing whether ethnic identity was a process that occurred sequentially over time, when each phase would be reached, and when an individual had finished developing their identity (Phiney, 1989; Phinney, 1988; Phiney & Chavira, 1992). However, the study of ethnic identity development in college students is important for several reasons. Lee and Yoo (2004) argue that ethnic identity peaks during late adolescence due to a turning point when parental cultural influences begin to attenuate, and children gain more autonomy from their parents. Furthermore, college is a time when the student is often away from their family and community and must grapple with how they fit into the context of the larger society. Syed and Azmitia (2009) found that college served as a transition point that encouraged additional exploration of one's ethnic identity. In addition, they found that not only did ethnic identity change over the course of college, but they also proposed that for some, it could continue to develop after.

Many studies have examined the relationships between ethnic identity and academically related outcomes in college students. For example, research has demonstrated that for Latino college students, high ethnic identity moderated the relationship between socioeconomic status and academic achievement (Ong, Phinney, & Dennis, 2006). For Black college students, ethnic identity has been linked to positive mental health outcomes (McClain et al., 2016). Duffy and Klingman (2009) found that higher levels of ethnic identity corresponded to greater levels of career decidedness in Black and Asian College students. High ethnic identity has also been linked to lower levels of imposter syndrome in Black and Hispanic college students (Peteet,

Montgomery, & Weekes, 2015). These studies, and several others, have found a number of interesting correlates between ethnic identity and various outcomes in college students, however, most have focused on Black or Hispanic students (Phinney, Cantu & Kurtz,1997; Rahim-Williams, 2007; Roberts, et al., 1999) and have rarely examined Native American students.

Native American students make up about 1% (~300,000) of the national undergraduate population (Census Bureau, 2019; NCES, 2019a). However, due to the methods by which race is often classified in higher education, the total undergraduate population could be much higher, as many Native American people are hypothesized to fall into the "two or more races" category (Reyes & Shotton, 2018). Furthermore, it is of special concern to research methods to recruit and retain Native American students due to their comparatively lower enrollment and graduation rates. Specifically, only 29% of Native American peoples aged 18-24 were enrolled in college as opposed to 43% of the general population (NCES, 2019b), and Native American students have the lowest six-year graduation rate of all ethnic groups (NCES, 2019c). Thus, Native American students make up an important, yet often overlooked segment of the population of institutions of higher education.

One mechanism by which Native American undergraduate achievement and retention may be bolstered is by fostering a high sense of pride in one's ethnicity. In fact, several studies have demonstrated a link between high ethnic identity and academic achievement (Altschul, Oyserman, & Bybee, 2006; Miller-Cotto & Byrnes, 2016). However, based on the subjugative history between the U.S. government, institutions of higher education, and Native American Nations, it is reasonable to question whether Native American culture and pride would be celebrated, bolstered, or even accepted at these institutions. That is, although high levels of ethnic identity can be beneficial in a number of contexts, would highly identified students be

more likely to thrive at predominately White institutions of higher education, or would their ethnic identity levels make them more aware, and thus, more affected by the difficulties they may face at these institutions? Furthermore, it is important to examine factors such as cultural immersion, which may affect individuals' initial levels of ethnic identity prior to entering college, as this may go on to impact the way they experience life on a predominately White campus.

Tribal Critical Race Theory

Tribal Critical Race Theory (TribalCrit; Brayboy, 2005) is an offshoot of Critical Race Theory (CRT; Lynn & Dixson, 2013) created to discuss the ubiquitous nature of racism and its impact on Native American peoples. Tribal Critical Race Theory has nine tenets which are intended to address the frequent gap between U.S. society and Native American culture, teachings, and ways of learning and being. The tenets are as follows: (1) Colonization is endemic to U.S. society. (2) U.S. policies toward Indigenous peoples are rooted in imperialism, colonization, White supremacy, and a desire for material gain. (3) Indigenous peoples occupy a liminal space that accounts for both the political and the racialized nature of their identities. (4) Indigenous peoples have a desire to obtain and forge tribal sovereignty, tribal autonomy, self-determination, and self-identification. (5) The concepts of culture, knowledge, and power take on new meaning when examined through an Indigenous lens. (6) Governmental policies and educational policies toward Indigenous peoples closely follow each other toward a problematic goal of assimilation. (7) Tribal philosophies, beliefs, customs, traditions, and visions for the future are central to the understanding the lived realities of Indigenous peoples; they also illustrate the differences and adaptability among individuals and groups. (8) Stories are not separate from theory; they make up theory and are, therefore, real and legitimate sources of data

and ways of being. (9) Theory and practice are connected in deep and explicit ways such that scholars must work towards social change.

Tribal Critical Race Theory was influenced by the work of Arthur Parker (1916) who presented a list of grievances for the US based on the spiritual, physical, and intellectual location Native American peoples experienced. These grievances stated that Indigenous peoples have the right to their own identity, economic freedom, land, and intellectual life based on Indigenous worldviews. Brayboy (2005) expounded upon Parker's early observations by drawing on the work of Critical Race theorist Derrick Bell (1992). Tribal Critical Race theory seeks to extend past Critical Race Theory (CRT) work specifically to Native American peoples as other branches of CRT have done for a number of groups (e.g., AsianCrit; Chang, 1999; Matsuda, 1993; LatCrit; Solorano & Delgado Bernal, 2001).

The first tenet of CRT discusses how racism is the normal order of the world and not an isolated or random phenomenon (Lynn & Dixson, 2013). Thus, critical race scholars view racism as the way the world is, and not something that resides within a person or a system. Although this theory places society in a racialized framework, it differs from the first tenet of TCRT substantially. The first tenet of TCRT states that colonization is endemic to U.S. society. The use of the terms "colonization" (which involves the "continuously renewed erasure of Indigenous people;" Rowe & Tuck, 2017) and "endemic" (i.e., a disease to society) pushes CRT beyond the assertion that racism is the normal state of the world to the notion that ongoing settler colonialism works similarly to a disease to physically and culturally erase Indigenous peoples. That is, tribal critical race theory goes beyond a racialized framework of society and examines the world through the lens of colonization, stemming back to first contact, and its ongoing role in modern society (i.e., a historical framework with ongoing relevance).

This framework is crucial when examining Native American-societal interactions, as these interactions, and the state of Native American peoples' and Tribal Nations' affairs in general, is the direct product of years of ongoing colonization. As Brayboy (2005) states, the goal of this colonization is the complete dismissal and dismantling of Indigenous ways of thinking, knowing, and doing. Because of this, colonization has directly affected the loss of language, land, life, and thus culture of Native American peoples (Brayboy, 2005). Furthermore, it is the reason for issues such as the overrepresentation of Native American students in special education, and the subsequent lower overall educational attainment by Native American students (Brayboy, 2005).

Tribal Critical Race Theory can be used as a mechanism to explain the interaction between Native American students and their environment. As Social Identity Theory focuses on the processes happening within the individuals, TribalCrit seeks to explain the effect of the environment on the individual. Thus, by coupling both an individual explanatory theory with a theory that examines an individual's environment, this study seeks to gain a holistic picture of the forces of push and pull, both internal and external, that Native American students may face.

Ethnic Identity Development and Cultural Experiences

Ethnic Identity is a dynamic concept that may vary in strength within an individual. It is an ongoing process that can continue over time and possibly throughout life (Phinney, 2006). A developmental perspective suggests that the formation of an achieved ethnic identity based on learning about one's ethnic group and making a commitment to the group leads to the rejection of negative views based on stereotypes (Phinney, 1989). Furthermore, although much of the research conducted on ethnic identity has focused on adolescents (French, Seidman, Allen & Aber, 2006; Phinney, 1990; Phinney, 1993), several studies have noted the importance of

studying ethnic identity in college students (Guardia & Evans, 2008; Phinney & Alipuria, 1990; Sellers & Shelton, 2003).

Most studies concerning ethnic identity have focused on development from a low to high level. That is, many studies examine the progression through diffusion to identity achievement (Phinney, Jacoby, & Silva, 2007; Romero et al., 2007; Seaton, Scottham, & Sellers, 2006). Yet, there is reason to believe that ethnic identity can change in any direction based on differences in one's life circumstances (Huang & Stormshak, 2011; Pahl & Way, 2006). For example, Huang and Stromshak (2011) analyzed ethnic identity trajectories for adolescents and found six different trajectories into which they may fall. These trajectories ranged from individuals who increased, decreased, or stayed the same in their ethnic identities. When considering the transition to college, it could be inferred that ethnic identity trajectory could vary based on the initial level as well as the experience that students have once getting to college. Hence, based on Huang and Stromshak's (2011) trajectory findings, I propose that similar trajectories will be found among Native American undergraduates, such that:

Hypothesis 1: Ethnic identity development will follow six different trajectories for Native American students. These include individuals whose ethnic identities: (1) start high (one standard deviation above the mean) and increased over time, (2) start high and stay high over time, (3) start high and moderately decreased over time, (4) start high and decreased significantly over time, (5) start low (one standard deviation below the mean) and increased significantly over time and, (6) start low and stayed low over time.

Ethnic identity development via social identity theory can be affected by a number of life experiences. For example, immersion into cultural traditions and values through religious, familial, neighborhood and educational communities may contribute to development of ethnic

identity by making group membership salient, thus enhancing social identification (Chavez & Guido-DiBrito, 1999; Tajfel & Turner, 1986). Phinney and Rosenthal (1992) state that an individual's community setting has an important impact on ethnic identity, as being situated within a given community allows for participation in culturally important events and foods which can enhance ethnic belonging and in-grouping via social categorization. Language is another important part of ethnic identity. Gudykunst and Schmidt (1987) discuss how language and ethnic identity are reciprocally related. For example, language can work to help individuals categorize themself, via social categorization, as members of a certain ethnic group. In addition, certain dialects can influence individuals to see themselves as members of various sub-groups within their ethnicity (Gudykunst & Schmidt, 1987). Lastly, physical proximity to other members of one's ethnic group has also been shown to be important to ethnic identity. For example, Asian students who attended a cultural immersion camp showed increases in ethnic identity by being around and immersed in their culture, which may have shifted their perceptions of who their in-group is (Wu, Outley & Matarrita-Cascante, 2019).

For Native American peoples, cultural traditions and language can be especially relevant to ethnic identity (Garrett & Garrett, 1994). Two of the tenets of TribalCrit (Brayboy, 2015) discuss how Native American culture is central to Native American identity, as well as how colonization is endemic to society. For many Native American peoples, their culture is intimately tied to their land, their language, and their traditions (Brayboy, 2015). However, some Native American beliefs may be at odds with that of U.S. majority culture. For example, many Native American beliefs are based on cooperation and collective well-being, rather than individualism (Brayboy, 2015; Garrett & Garrett, 1994). Thus, the notion of colonization being endemic to society states that European American culture dismisses other cultures' thoughts, processes, and values when

they do not align with its own (Brayboy, 2015). This creates a problematic goal of attempting to erase Native American identities in an effort to assimilate them into the dominant Eurocentric American culture (Brayboy, 2015).

Being that there is a pull for Native American students to either develop a bicultural identity, or assimilate totally, it is important to examine how this affects ethnic identity development. Schweigman, Soto, Wright, and Unger (2011) found that Native American youths who were more involved in tribal activities such as sweat lodges, pow wows, and drum groups had higher ethnic identity level than those who were less involved in these cultural practices. In addition, Lysne and Levy (1997) found that Native American youth had higher levels of ethnic identity when they attended schools which had larger populations of Native American students. Thus, being in close proximity to other Native American students and culture was helpful in boosting ethnic identity. Based on these research findings one might posit that cultural immersion serves to aid in the social categorization process, which would in turn translate to higher levels of ethnic identity. Therefore, the second hypothesis is proposed:

Hypothesis 2: Cultural immersion will be positively associated with initial (first year) levels of ethnic identity such that individuals with higher levels of cultural immersion will have higher levels of ethnic identity.

Ethnic Identity Development and Campus Experiences

Native American identity can interact with the experiences that students have on campus. Specifically, Tribal Critical Race Theory discusses the notion that Native American students are often viewed as only a racial group, rather than a political group. For example, discrimination that Native American students may face as a result of the false perception of them being "recipients of programs such as Affirmative Action" (attacks based in the misunderstanding of

the Civil Rights act of 1964 and the notion that these students are less deserving than White students of a spot in college and are merely filling a [non-existent] quota) frame them as merely a racial group, rather than a political group deserving of the benefits of the treaties their tribal nations and the United states agreed to (Brayboy, 2005; Lynn & Dixson, 2013). This lack of knowledge surrounding Native American peoples' complex identities is a direct outcome of ongoing colonization. However, there is merit in discovering whether Native American ethnic identity may serve to buffer these uneducated attacks that some students may experience if they enter predominately White institutions for the first time in college.

Several studies have highlighted both positive and negative interactions between ethnic identification and college experience. Specifically, Chavez and Guido-DiBrito (1999) discussed the importance of educational environments being inclusive of multicultural ways of knowing and doing things, bases of knowledge, perspectives, and styles of educating in an effort to create a climate that honors, supports, and challenges all students to be contributing members. Interactions with other students or professors, classroom interactions, and campus interactions shape how a student experiences college in ways that can be range from negative to positive. Several studies have examined campus experiences and ethnic identity. For example, being enrolled in an ethnically based sorority has been shown to boost ethnic identity (Guardia & Evans, 2008; Tsai & Fuligini, 2012). In addition, having positive multicultural relations on campus has been demonstrated to enhance belonging and acceptance, provide a more mature and evolved sense of ethnic identity, and a greater exploration of one's ethnicity (Santos, Ortiz, Morales & Rosales, 2007).

In contrast to having positive experiences on campus, students may also face negative experiences stemming from discrimination or stress associated with living up to what is expected of them as a member of their ethnic group. Huffman (2001, 2003) found that Native American students with a high sense of tribal identity sometimes experienced cultural conflict with the dominant campus climate which caused them to have increased levels of stress. In addition, Hurtado et al. (1998) found that an unwelcoming campus climate was linked to negative outcomes for ethnic minority students. Furthermore, students who reported their institution to be threatening reported a greater sense of alienation and a lack of attachment to the institution (Cabrera & Nora, 1994; James, 1998). The negative impact of experiences can reach academic outcomes as well, including Native American students who experience on-campus discrimination reporting less academic resilience (LaFromboise, Hoyt, Oliver, & Whitbeck, 2006)

While some past research examines campus climate factors and their direct or interactive effects on either Native American students or other ethnic minority students, none has examined the relationship between these factors and the development of ethnic identity over the course of the undergraduate experience. Thus, in addition to examining the ethnic identity trajectories of Native American undergraduates, the current study proposes the following set of research questions:

Research Question 1: How will the level of Native American students' reported comfort on campus vary by ethnic identity trajectory class?

Research Question 2: How will the quality of Native American students' reported social interactions surrounding race and ethnicity on campus vary by ethnic identity trajectory class?

Research Question 3: How will the quality of Native American students' reported social interactions surrounding race and ethnicity in the classroom vary by ethnic identity trajectory class?

Research Question 4: How will the quality of Native American students' reported social interactions surrounding race and ethnicity with faculty vary by ethnic identity trajectory class?

Research Question 5: How will the level of stress from dealing with others' race/ethnicity-based expectations vary by ethnic identity trajectory class for Native American students?

Research Question 6: How will the level of Native American students' reported explicit discrimination vary by ethnic identity trajectory class?

Research Question 7: How will the level of Native American students' reported level of personal discrimination vary by ethnic identity trajectory class?

Research Question 8: How will the level of Native American students' reported level of group-based discrimination vary by ethnic identity trajectory class?

Ethnic Identity and Academic Outcomes

Ethnic identity is proposed to be an important factor related to academic outcomes. For example, cultural incongruence between one's tribal culture and campus culture could serve as a source of stress for Native American students, contributing to decreased academic performance (Chee, Shorty, & Robinson Kurpius, 2019; Huffman, 2001; LaFromboise, Coleman, & Gerton 1993; Ogbu, 1992). Several studies have found positive relationships between ethnic identity and academic performance such that low academic performance is correlated with low ethnic identity and higher academic performance is correlated with high ethnic identity (Huang & Stormshak, 2011; Jamillo, Mello, & Worrell, 2016, Schweigman et al., 2011). In addition to academic performance, ethnic identity can be related to persistence in college. For example, research has demonstrated that the centrality of one's race/ethnicity, as well as perceptions of how others' view their race/ethnicity impacted decisions to persist in college. Specifically for those high in ethnic identity, ethnic minority men cited higher propensity to persist than White men and ethnic minority women reported lower propensity to persist than White women (Rigali-Oiler & Kurpius, 2013). Although this research has examined correlational relationships between ethnic identity and academic achievement, to my knowledge there have not been previous studies that have examined ethnic identity trajectories and academic achievement. However, based on this evidence, one would posit there would be a positive relationship between ethnic identity and academic achievement and persistence. Thus, the following hypotheses are proposed:

> *Hypothesis 3:* Native American students with ethnic identity trajectories that either started and remained high or increased over time will have higher GPAs than students with trajectories that started and remained low or decreased over time.

Hypothesis 4: Native American students with ethnic identity trajectories that either started and remained high, or increased over time will have higher persistence rates than students with trajectories that started and remained low or decreased over time

Method

Participants and Procedures

Participants included a sample of 791 undergraduate students who self-identified as being Native American. Students were enrolled in a large research University located in the Southwestern region of the United States. The sample contained somewhat more female (*N* = 517, 65.36%) than male (*N* = 274, 34.64%) participants and no participants indicated they held other gender identities. At the first time of measurement, the sample included 332 (41.97%) First Year students, 194 (24.53%) Sophomores, 167 (21.11%) Juniors, and 98 (12.39%) Seniors. Students in the sample primarily declared STEM majors (*N* = 338, 42.73%), followed by non-STEM majors (*N* = 325, 41.09%), and social or behavioral science majors (*N* = 128, 16.18%). Furthermore, the average age at the first measurement occasion was 20.98 (*SD* = 5.35). Participants came from a number of different backgrounds with 11.13% (*N* = 88) indicating that they came from a rural area outside of a town, 11.76% (*N* = 93) indicating that they came from a small town with less than 1,000 people, 26.80% (*N* = 212) came from a medium sized town with less than 10,000 people, 18.96% (*N* = 150) came from a small city with less than 100,000 people, 16.69% (*N* = 132) came from a medium sized city with more than 100,000 people, 12.64% (*N* = 100) came from a large sized city with more than 200,000 people, and 2.02% declined to answer (*N* = 16). Lastly, participants indicated that they were members of a diverse range of tribal nations (see Table 1 for an exhaustive list of participants' tribal nations.)

These students are part of a larger, longitudinal study aimed at assessing various factors leading to retention and success of Native American students in college and more specifically in STEM fields. Students were recruited by using their institutional records and emailed a link to participate. Study recruitment began in the spring semester of 2014 and is still continuing at present. The survey contains three versions with the first version being an initial one-time assessment of several measures as well as demographic factors. Upon completion of the initial survey, participants were re-recruited each subsequent semester and given an alternate version of the survey until graduation or the discontinuation of school (see Figure 1 for a diagram of the survey assessment procedure). Participants who choose not to participate in a given semester would receive their next designated survey version when they choose to participate in the survey again, regardless of the number of semesters that have passed between participation occasions. Each survey version took approximately 45 minutes to complete, and participants were compensated for their time with a gift card each semester in which they completed a survey.

Survey Design and Data Management

One of the goals of this study was to examine how and if ethnic identity level would change over time for Native American college students. In order to examine changes over time, one must have at least three time points of data collected for each respondent. However, due to the nature of longitudinal data collection, many participants discontinue studies for various reasons. These reasons can range from graduation from the institution, discontinuing their education, or choosing to discontinue the study for an unknown reason. Study protocol dictated that data were not included for participants who failed 66% of the embedded attention checks in the study. Furthermore, participants who continually failed the survey were not invited back as participants. Given the data quality standards just listed, the various reasons for participants

attrition, as well as the desire to achieve an adequate level of covariance coverage in the longitudinal analysis, when selecting who to retain for this study's analytic sample, the decision was made to include individuals who had participated in the study at least two times, specifically in two different academic years (rather than only use the limited number of participants who had completed the study three times; $n = 357$). Again, although it was the intent to assess participants' levels of ethnic identity on three measurement occasions, some participants (~45%) were only assessed on two occasions due to discontinuation of the study (see Analysis section for discussion on missing data). With the advent of full information maximum likelihood analytic techniques, researchers can retain a greater proportion of their sample for analytic purposes while still being able to conduct longitudinal analyses. This leads to a reduction in sample bias which is often caused by the use of casewise deletion for non-complete cases of data.

Most participants in this study were assessed with one year between each measurement occasion, however, the minority ($n = 118$, 15%) had more than one academic year between measurement occasions. There was an average of 1.21 academic years between measurement occasion one and two, with a maximum number of years between measurement occasions of four years. There was an average of 1.11 academic years between measurement occasion two and three for participants who participated all three times ($n = 357$) with a maximum time of four academic years between measurement occasions.

Data collection for this study began in spring 2014 and efforts were made to re-recruit the same students each semester until present (Spring 2021). Therefore, students could have been measured on multiple occasions in the given time period. Because this study examined changes in ethnic identity over the course of one's college career, we wished to assess changes from students' first academic year to their next two academic years. An academic year was

conceptualized as Fall, Spring, and Summer semesters. For example, Fall 2015, Spring 2016, and Summer 2016 are considered one academic year at the focal institution. Lastly, if students had multiple survey responses for a given academic year (on the same variable) their first response was selected.

Although the outcome variable (ethnic identity) was measured on multiple different occasions, all other variables in the study were selected at just one measurement occasion and thus, were treated as time invariant variables in the analyses. This decision was made due to sample size constraints. Due to the construction of the survey, several variables analyzed were measured on different semesters than the outcome variable. Based on this procedure, retaining a large enough sample of participants who had all variables measured longitudinally was not feasible for several reasons. First, participant attrition happened through either lack of interest in participating in the study, graduation, or discontinuing school. In addition, participants may have chosen to not participate in certain measures or items in the larger study or may have failed attention check questions and had their data excluded from the study and not been re-recruited to participate. Thus, all variables other than ethnic identity were selected from each participant's first time point of measurement in an effort to retain a large enough sample from which meaningful conclusions can be drawn.

Analysis

To create the data set, Microsoft Excel was used to match and merge the various cohorts of participants with their subsequent survey responses as well as their time invariant measures and demographics. R Studio was be used to dummy code all categorical variables and run correlations, scale reliability metrics, and descriptive statistics. The statistical software MPlus

version 7 was used to conduct all main analyses due to its ability to conduct analyses using full information maximum likelihood (FIML).

Missing data can occur for a number of reasons, briefly discussed earlier, such as participant attrition, lack of attention to the study (i.e., failing to respond correctly to the attention check questions built into the study), or the purposeful choice not to answer certain measures contained within the study. Casewise deletion was used for students who had not completed the measure of ethnic identity at two or more different academic standings, as this method is thought to be unbiased in large samples (Allison, 2001; Schafer & Graham, 2002). This procedure resulted in the exclusion of 1,116 participants who only completed the ethnic identity measure one time, from the original total of 1,907 participants.

To ensure there was not additional bias that can occur from the use of casewise deletion, the demographics (gender, academic major, age, final cumulative GPA, and persistence rate) as well as ethnic identity level were compared for the sample that was deleted via casewise deletion and the final analysis sample. Regarding major, similar to the distribution of the sample used in this study, the sample that was excluded from analyses included 40.39% STEM majors, 17.10% social and behavioral science majors, and 42.51% non-STEM majors. Following a similar distribution to the sample used in this study, the sample that was excluded from analyses included 39.52% male students and 60.48% female students. T-tests were conducted using R Studio to compare the difference in age, GPA, persistence rate, and ethnic identity between participants who were included or excluded in the study based on the casewise deletion procedure (see Table 2). Results of the t-tests revealed significant differences on three continuous demographic variables and marginal significance on the ethnic identity variable. That

is, participants who were excluded from the sample were approximately 2 years older on average, had approximately .2 points lower GPAs, had approximately 1.5 points higher persistence rates (indicating they took an average of 1.5 more credit hours more per semester), and had marginally significantly higher levels of initial ethnic identity.

For students who had measures of ethnic identity at only two time points (rather than all three), subsequent analyses were conducted using FIML. Full information maximum likelihood works by constructing a likelihood function for each case with missing data and estimating the population parameter based on the sample data to maximize the likelihood function (Allison, 2001). Thus, although some participants did not have three time points for MEIM, with FIML their longitudinal trajectories are still able to be estimated. FIML is a preferable method to use with missing data due to its efficiency, its replicability, its propensity to not conflict with the analysis model (as with multiple imputation, a regression-based technique; Allison, 2012). Furthermore, it reduces the number of subjective decisions which have to be made in the process (Allison, 2012). Moreover, by using FIML one can maximize the sample size and avoid bias that may occur when using other methods of handling data such as case and listwise deletion or multiple imputation (Allison, 2001).

This study employed the use of latent class growth analysis (a special type of growth mixture modeling) and a longitudinal extension of latent class analysis. Latent class analysis (LCA) is a method used to group participants into classes based on their correlations on one or more outcome variables (Roy, 2007). A latent class growth model extends the LCA to group individuals into classes based on their trajectories on a given outcome variable (in this case, ethnic identity; Wardenaar, 2020). Based on the recommendations of Wardenaar (2020) the

number of classes were determined a priori, then multiple models containing different class numbers were compared, and the one with the best fit measures was selected. Based on work by Huang and Stormshak (2011), the intent was to test a model with 1 estimated latent trajectory class and compare it to models with as many as six trajectory classes. However, due to constraints in the trajectory class size, models were tested with one to five trajectory classes (see Results section for further explanation on the number of trajectory classes tested). Models were compared based on the AIC, BIC, and entropy values. The model with the lowest AIC and BIC, as well as the entropy value closest to 1 was selected as best (Roy, 2007; Wang & Bodner, 2007; Wardenaar, 2020).

Once the best fitting model was selected, a series of one-way ANOVAs using Tukey's Honestly Significant Differences post-hoc test were conducted to compare time invariant variables based on the grouping variable, growth trajectory class, as recommended by Huang and Stormshak (2011). In addition, Native American cultural immersion was regressed onto the first measurement occasion of ethnic identity.

Measures

Ethnic Identity

Ethnic Identity was measured using a reduced version of *The Multi-Group Ethnic Identity Measure* (Roberts et al., 1999). This measure contained 12 items rated on a 4-point Likert type scale which ranged from 1-strongly disagree to 4-strongly agree. Sample items include "I am active in organizations or social groups that include mostly members of my own ethnic group" and "I am happy that I am a member of the group I belong to." A high score indicates a higher level of ethnic identity. This scale demonstrated good reliability ($\alpha = .91$).

Cultural Immersion and Connection

Cultural Immersion

Cultural immersion was measured using a 12-item scale created for the larger survey in which this study is situated. These questions examined topics such as the person's level of tribal attachment, involvement in their tribal community, understanding and importance of their tribe's language to them, how often they physically visit their tribe, and their perceived connection to Native American cultures in general. Scales for these questions were primarily 4-point scales that varied by question. Some example items include: "How well do you understand your tribal history and traditions?" (1- Not at all to 4- Very Well). "How would you rate your involvement in your tribal community?" (1-Not at all involved to 4-Very involved). "How often do you go back to your tribal community?" (responses ranged from: Less than once every two years to I am currently living there). Higher scores on this measure indicate a higher level of knowledge, connection to, and participation in their tribal as well as Native American cultures in general. This measure was collected at the participant's first measurement occasion. This scale demonstrated good reliability ($\alpha = .91$).

Cultural Connection

Cultural Connection was assessed using two open ended text boxes that asked "Please describe your involvement in your tribal community. List activities, rituals, ceremonies, celebrations, etc. that you participate in." The second question asked "Please describe your connection to your tribal community. Describe what you believe connects you to your tribal community." These items were double coded by two graduate student researchers to ensure consensus in the coding process. Both items were coded into three categories which included a

"N/A or didn't respond category", a "Not connected or Not Involved category", and a "Connected or Involved" category categories were created for both items discussed in the (see the exploratory analysis section for a complete description of the coding process).

Campus Climate and Experiences

Campus Comfort

Campus comfort was measured using a 9-item scale adapted from a measure created by Helm, Sedlacek, and Prieto (1998). This scale asked students their level of comfort on a 5-point scale which ranged from 1-very uncomfortable to 5-very comfortable, to discuss how they felt about various on campus occurrences such as speaking to faculty of their same ethnic background, discussing their ethnic background with others, and participating in class and being around people whose ethnic background is the same as their own. Higher scores on this measure indicate higher levels of comfort on campus with people of both their same ethnic background, as well as with others of a different ethnic background. Items give the prompt "Please indicate how comfortable you would feel in the following situation:" Two sample items are "Going to see a faculty member of my own race/ethnicity." or "Being with people whose racial/ethnic backgrounds are different than my own." This scale demonstrated good reliability ($\alpha = .81$).

Campus experience with race

Campus experience with race was adapted from measures created by Helm, Sedlacek, and Prieto (1998) and Cabrera and Nora (1994). Campus experience with race was measured using 7 items on a 5-point scale which ranged from 1-strongly disagree to 5-strongly agree. This scale measures the extent to which the student felt that campus was an accepting and educational

place regarding race/ethnicity. Higher scores on this measure indicate the student feels that the institution has taught and made them (as well as other students) more comfortable interacting with and being friends with individuals of different races and ethnicities than their own. Two sample items include "Getting to know people with racial/ethnic backgrounds different from my own has been easy on this campus." or "My experiences on this campus since coming to school have led me to become more understanding of racial/ethnic differences." This scale demonstrated good reliability ($\alpha = .79$).

Campus classroom experience with race

Campus classroom experience with race adapted from measures created by Helm, Sedlacek, and Prieto (1998) and Cabrera and Nora (1994). This scale used 4 items measured on a 5-point scale which ranged from 1-strongly disagree to 5 strongly agree. This scale measures the extent to which the classroom experience is representative and welcome to students of all ethnicities and races. A higher score indicated the student felt their classroom experience had not been hindered by their race/ethnicity. Sample items include "In my experience, students of different racial/ethnic backgrounds participate equally in classroom discussion and learning." and "Faculty use examples relevant to people of my race/ethnic group in their lectures." This scale demonstrated good reliability ($\alpha = .70$).

Stress related to others' expectations due to being Native American

Stress related to others' expectations due to being Native American expectations was adapted from measures created by Helm, Sedlacek, and Prieto (1998) and Cabrera and Nora (1994). This scale used 4 items measured on a 5-point scale which ranged from 1-strongly

disagree to 5 strongly agree. This scale assesses the extent to which students felt stress caused by the pressure of living up to others' expectations for them as a Native American student. Higher scores indicate a higher level of stress caused by the need to live up to these expectations. Sample items include "I feel there are expectations about my academic performance because of my race/ethnicity" or "I feel pressured to participate in ethnic activities at this school." This scale demonstrated adequate reliability ($\alpha = .75$).

Experience with faculty

Experience with faculty was measured using a 10 item scale adapted from measures created by Gonyea, Kish, Kuh, Muthiah, and Thomas (2003) and Lundberg and Schreiner (2004). This measure used a 4-point scale that ranged from 1-never to 4-very often. The intent of this scale was to assess the level of quality, comfort, and familiarity students have with faculty at their institution. Higher scores indicate higher quality and comfort in interactions with faculty. Participants were prompted with the following: "In your experience at this institution, about how often have you done each of the following." Some sample items are "Socialized with a faculty member outside of class (had a snack of soft drink, etc.)" and "Discussed your career plans and ambitions with a faculty member." This scale demonstrated good reliability ($\alpha = .88$).

Explicit discrimination

Explicit discrimination was measured using a 10-item measure created for the purposes of the larger study in which the present study was situated. This measure was developed based on focus group responses with Native American students who shared explicitly discriminatory statements that they had experienced or witnessed while on campus. The intent of this measure was to assess the frequency with which Native American students have personally experienced

overt racist attacks while on campus. Higher scores indicate a higher frequency with which one has faced explicit discrimination. The measure asks students to indicate how many times each of the statements had happened to them since being a student at the focal institution. Frequencies ranged from 0 times to 10 or more times. Some sample items include "Witnessed students at the university dressing up as "Indians" in an offensive manner?" or "[Being asked] If you live in a teepee?" This scale demonstrated good reliability ($\alpha = .90$).

Perceptions of personal versus group discrimination

Personal discrimination was measured using the 8-item Self-Other Discrimination Measure for Native Americans. This measure was based on a measure found in Sechrist, Swim, and Mark (2003). The measure had two factors: perceived discrimination toward oneself (four item) subscale and perceived discrimination toward other Native Americans (four item) subscale. Personal discrimination measures the perceived level of discrimination (overt or subtle) with which the student has had to contend. Higher scores indicated higher levels of personally experienced discrimination. Group based discrimination assess the level with which the participant feels that their group (in this case Native Americans) have to contend with and experience discrimination. A higher score on group-based discrimination indicates the person believes that other individuals in their group experience a higher degree of discrimination. This measure uses a 1-5 Likert scale ranging from not at all to very much. An example item for personal discrimination is "Please rate the extent to which you have experienced discrimination due to being Native American." An example item for group discrimination is "Please rate the extent to which other Native Americans have experienced discrimination." Both personal discrimination ($\alpha = .90$) and group discrimination ($\alpha = .92$) demonstrated good reliability.

Academic Variables

GPA

GPA was pulled from institutional records. The GPA selected represented the students' final or most recent cumulative GPA.

Persistence Rate

Persistence rate was determined using the number of credit hours each participant had taken, as well as the student's admit date, and graduation date (if they graduated) from institutional records. Persistence rate was calculated by the number of credit hours divided by the number of semesters since their admittance date (until their graduation date). In the case that students had not graduated, a 6-year (12 semester) timeframe was used as the maximum length of enrollment. For students who took classes in the summer, those credit hours were combined with their spring credit hours. For students who took classes in the winter intersession, those credit hours were combined with their fall credit hours. This was done to keep a consistent number of semesters in the denominator for all participants.

Demographic Variables

Ethnicity

Ethnicity was assessed as part of the MEIM measure. A single item asked, "In terms of ethnic group I consider myself to be: Black or African American, Asian, White, Native American or Alaskan Native, Native Hawaiian or Other Pacific Islander, Hispanic or Latino/a."

Participants selected the one ethnic group with which they most identified. Only participants who selected “Native American or Alaskan Native” were retained for this study.

Gender

Gender was assessed with a single item that asked participants “What is your gender?” Participants could choose from: Male, Female, Gender Non-conforming, Gender Non-binary/Genderqueer, Agender/Androgynous, Gender Fluid, Trans Man, Trans Woman, Two-Spirit, another gender not listed here, prefer not to say, prefer to self-describe.

Hometown Size

Participant’s hometown size was assessed with a single item that asked, “Please indicate the size of the town in which you spent the majority of your time growing up.” Participants could select from the following options: Rural (outside of a town), Small Town (<1,000 people), Medium Sized Town (<10,000 people), Small City (<100,000) people, Medium Sized City (>100,00 people), Big City (>200,000).

Major

Major was gathered from the student’s institutional records. Major was then coded into one of three categories based on guidelines from the National Institutes of Health and the National Science Foundation: STEM major (such as math or engineering), Non-STEM major (such as business or English), and Social or Behavioral Science major (such as psychology or sociology).

Tribal Nation

Participant's tribal nation was assessed using a single open-ended question. This question asked participants "Are you an enrolled member of a Native American Tribe?" For participants who indicated "yes" they were subsequently asked "Please name the tribe in which you are enrolled."

Results

Preliminary Analyses

All preliminary analyses were conducted using R Studio and the psych package. Internal consistency reliabilities were conducted for all scales used in this study and reported in the measures section, with all measures showing adequate levels of reliability to be included in the subsequent analyses. Sample characteristics, as reported in the participants and procedures section, were assessed. Due to the nature of the larger study in which these measures were collected, Harman's (1960) test for common method bias was conducted. This test of common method bias posits that the total amount of variance assessed should be less than 50% when forcing all measures onto a one factor unrotated structure. When an un-rotated principal components analysis with one factor was conducted, the total variance explained was 25%, indicating that this study would meet the guidelines set by Harman for acceptable levels of common method bias.

Descriptive Statistics and Correlations

All descriptive statistics and correlations were conducted in R Studio using the psych and Hmisc packages. Descriptions of all measures including minimum and maximum range vales,

means, standard deviations, skewness, level of kurtosis, and the percent missing can be found in Table 3. A correlational analysis was conducted as well (see Table 4). Most variables in this study were significantly correlated with one another, with ethnic identity significantly correlated with the majority of study variables. Thus, one would expect to see group differences on other variables based on ethnic identity level.

Hypothesis 1

Hypothesis 1 proposed that ethnic identity would take a 6-class trajectory solution with class trajectories including: (1) start high (one standard deviation above the mean) and increased over time, (2) start high and stayed high over time, (3) start high and moderately decreased over time, (4) start high and decreased significantly over time, (5) start low (one standard deviation below the mean) and increased significantly over time and, (6) start low and stayed low over time. To test this hypothesis, a Latent Class Growth Analysis was conducting in MPlus 7.

Based on the guidelines set in place by Van De Schoot, Sijbrandij, Winter, Depaoli, and Vermunt (2017) the latent class trajectories were estimated without the use of covariates. This was done for a number of reasons, but primarily due to the concern for replication of these latent classes in future studies. The analysis was conducted with 100 random starts and 50 iterations in an effort to avoid producing a localized finding (Nylund, Asparouhov, & Muthén, 2007). The covariance coverage for the first and second measurement occasions of ethnic identity was 1, being that participants were selected who had participated at least twice in the study. The level of covariance coverage for the third time point was 45%, which is above the minimum recommended level of 10% (Muthén & Muthén, 2017).

Models of latent classes were tested starting with a single class model up to a 5-class model. A 6-class model was not tested as the 5-class model included one class with only 6 participants, or less than 1% of the sample. Research recommends not settling on a number of classes where one class is very small. This is recommended as the class might not make substantive sense, be reproducible, or it may lead to smaller distances between classes (Nylund et al., 2007; Tein, Coxe, & Cham, 2013).

A comparison of the 1 to 5-class models demonstrates the n size per class, and differences in intercepts and slopes based on class number and model (see Table 5). In order to select the best model, however, fit statistics including AIC, BIC, SSABIC, and entropy were compared (see Table 6). As mentioned previously, the 5-class model included a proportionally small class, therefore it was not considered in the comparison of fit statistics. AIC, BIC, and SSABIC values fell with the addition of each new class. However, large entropy values closer to 1 are preferred, and the transition from the 3 to 4-class models shows that the entropy values fell. Hence, the 3-class solution has the best total model fit. Furthermore, the 3-class solution makes theoretical sense as demonstrated by the intercept values of the three classes. Intercept values for the three classes were 2.16 (1 standard deviation below the mean), 2.75 (within +/- 1 standard deviation of the mean), and 3.49 (1 standard deviation above the mean). Thus, the 3-class solution signifies high, moderate, and low levels of ethnic identity (see Figures 2, 3, and 4).

Once the model was selected, trajectory slope was examined. The slopes for each of the three classes in the 3-class model all held non-significant p-values (see Table 5). This indicates that in all three classes, ethnic identity level did not change significantly over the course of college in this sample. Hence, Hypothesis 1 was not supported in that a 3-class trajectory model

was selected and, for all class trajectories, ethnic identity appeared stable over the course of college.

Hypothesis 2

The second hypothesis stated that that cultural immersion would be positively associated with initial (first year) levels of ethnic identity such that higher levels of cultural immersion would be associated with higher levels of ethnic identity. This hypothesis was tested in R Studio with the psych package. A linear regression (without covariate measures) was conducted with cultural immersion and the first measurement occasion (or intercept value) of the student's ethnic identity. This test was significant (F (1, 776) = 267.9, $p < .001$, $R^2 = .26$. $\beta = .53$), indicating that for every 1 unit increase in cultural immersion, the student would have a .53 unit increase in initial level of ethnic identity, or 26% of the variance in initial levels of ethnic identity was explained by cultural immersion. Hence, hypothesis 2 was supported.

Research Questions

Research questions one through nine focused on differences in student's reported college experiences based on their ethnic identity trajectory class. To test these hypotheses a series of individual ANOVAs were conducted in R Studio using the psych package. Latent trajectory class (low, moderate, or high ethnic identity) was used as the grouping variable and mean differences were compared on each of the campus experience variables. The results of all ANOVAs for campus experience variables were significant (see Table 7).

Research questions 1 asked how the level of Native American students' reported comfort on campus varied by ethnic identity trajectory class. Results of the ANOVA revealed significant differences (F (2, 785) = 5.93, $p < .01$) between groups. The high ethnic identity class had

significantly higher (M = 4.05) campus comfort than the low (M = 3.83) and moderate (M = 3.89) ethnic identity classes.

Research questions 2 asked how the quality of Native American students' reported social interactions surrounding race and ethnicity on campus varied by ethnic identity trajectory class. Results of the ANOVA revealed significant differences (F (2, 786) = 2.90, p = .05) between groups. The high ethnic identity class had significantly worse social interactions regarding race (M = 3.62) than the low ethnic identity class (M = 3.75) but the moderate ethnic identity class (M = 3.89), was not significantly different than either the high or low classes.

Research question 3 asked how the quality of Native American students' reported social interactions surrounding race and ethnicity in the classroom varied by ethnic identity trajectory class. Results of the ANOVA revealed significant differences (F (2, 787) = 30.83, p < .001) between groups. All three groups were significantly different from each other with the high ethnic identity class reporting the worst experience (M = 3.26) the moderate ethnic identity class reporting a moderate experience (M = 3.55) and the low ethnic identity class reporting the best experience (M = 3.76).

Research question 4 asked how the quality of Native American students' reported social interactions surrounding race and ethnicity with faculty varied by ethnic identity trajectory class. Results of the ANOVA revealed significant differences (F (2, 694) = 6.01, p < .01) between groups. The high ethnic identity class was significantly different from the low and moderate class. The high ethnic identity class reported the best experience (M = 2.35), while the moderate ethnic identity class (M = 2.21) and the low ethnic identity class were not significantly different from each other (M = 2.11).

Research question 5 asked how the level of stress from dealing with others' race/ethnicity-based expectations varied by ethnic identity trajectory class for Native American students. Results of the ANOVA revealed significant differences (F (2, 787) = 73.85, $p < .001$) between groups. All three groups were significantly different from each other with high ethnic identity class reporting the greatest perceived expectations (M = 2.74), the moderate ethnic identity class reporting a moderate level of expectations (M = 2.22) and the low ethnic identity class reporting the lowest level of expectations (M = 1.82).

Research questions six, seven, and eight focused on the level of perceived student discrimination based on their ethnic identity trajectory class. Research question 6 focused explicit discrimination, while research question 7 focused on personal discrimination and research question 8 examined group-based discrimination. For explicit (F (2, 679) = 96.14, $p <$ .001) and personal (F (2, 699) = 104.9, $p < .001$) discrimination there were significant differences between all three groups. The high ethnic identity trajectory class reported the highest levels of both explicit (M = 3.80) and personal discrimination (M = 2.52). The moderate ethnic identity trajectory class reported moderate levels of both explicit (M = 1.95) and personal discrimination (M = 1.55). Finally, the low ethnic identity trajectory class reported the lowest levels of both explicit (M = 1.50) and personal discrimination (M = 1.19). While the perceived level of group discrimination did not follow this same pattern, there were significant differences between all three groups (F (2, 699) = 25.97, $p < .001$). The high ethnic identity trajectory class reported the highest levels of perceived group discrimination (M = 3.66), the low ethnic identity trajectory class reported moderate levels of perceived group discrimination (M = 2.68), and the moderate ethnic identity trajectory class reported the lowest levels of perceived group discrimination (M = 2.10).

Hypotheses 3 and 4

Hypotheses 3 and 4 examined the difference in academic outcomes based on the student's ethnic identity trajectory class. Specifically, hypothesis 3 stated that Native American students with ethnic identity trajectories that either started and remained high or increased over time would have higher GPAs than students with trajectories that started and remained low or decreased over time. Hypothesis 4 stated that Native American students with ethnic identity trajectories that either started and remained high or increased over time would have higher persistence rates than students with trajectories that started and remained low or decreased over time. These hypotheses were both tested in R Studio using the psych package. Hypothesis 3 was partially supported in that there were significant differences in GPA based on ethnic identity trajectory class (F (2, 788) = 4.12, $p < .05$). Individuals in the high ethnic identity trajectory class held significantly lower GPAs (M = 3.17) than those in the low ethnic identity class (M = 3.32). The moderate ethnic identity class was not significantly different from either group (M = 3.27). There were no significant differences in persistence rate among the three ethnic identity trajectory classes (F (2, 771) = 14.3, p = .24), thus hypothesis 4 was not supported.

Exploratory Analyses

In an effort to better understand the differences in cultural connection a frequency count was done for both cultural connection questions to examine the number of students who stated that they were not involved/connected or involved/connected to their tribal communities. This was done by two graduate student raters who read all responses, reached a consensus, and manually coded them into one of three categories. The first category consisted of anyone who directly stated that they were either "not at all involved" in their tribal community and/or were "not at all connected" to their tribal communities or put that their connection and participations

was “N/A”. A second category was created for students who chose not to answer (left the question blank). All students who answered the questions in any other way that indicated they felt connected or involved (no matter how connected or involved they stated they were) were included in a third “connected” or “participated” category. These included students who stated things such as “I have no real connection to my tribe except for my scholarship.” Or “I don’t participate at all, except to vote.” Hence, some participants had solely a political relationship with their tribe while others held a more a communal one.

A chi-square test of independence was conducted to examine if the observed data were different from the expected data (see Table 8 for proportion of responses based on ethnic identity trajectory class). For the question that asked about the student’s participation in their tribal community, there were significant differences based on ethnic identity trajectory class and response to the question ($\chi^2(2, N = 791) = 124.13, p < .001$). Specifically, only 3% of students who were in the high ethnic identity trajectory class stated that they had no participation or involvement with their tribal communities. This contrasts with 29% of the moderate ethnic identity level trajectory class and 42% of the low ethnic identity level trajectory class who stated that they were not involved with their tribal communities. There were also significant differences in response based on ethnic identity trajectory level for the question that asked about connection to one’s tribal community ($\chi^2(2, N = 791) = 58.37, p < .001$). Mirroring responses to the participation question, only 3% of students who were in the high ethnic identity trajectory class stated that they had no connection to their tribal communities. This is opposed to 19% of students in the moderate ethnic identity level trajectory class and 29% of students in the low ethnic identity level trajectory class.

Discussion

Several studies have examined ethnic identity changes among Native American youth or among ethnic minority college students (Brown & Smirles, 2003; Chavez & Guido-DiBrito, 1999; Galliher, Jones & Dahl, 2011; Guardia & Evans, 2008). However, this study took a longitudinal, person-centered analytic approach to determine whether there were differences in ethnic identity trajectories among Native American undergraduate students and how these differences affected their college experiences and outcomes. Results of the analyses suggest several important findings. Hypothesis 1 proposed there would be a total of six ethnic identity trajectories for Native American College students. Results of this analysis revealed two important findings, the first of which is that ethnic identity levels did not change over the course of college in this sample. Secondly, there were three distinct ethnic identity trajectory clusters. These clusters encompassed Native American students with low (one standard deviation below the mean), moderate (within one standard deviation of the mean), and high (one standard deviation above the mean) levels of ethnic identity. Due to these findings, hypothesis 1 was not supported.

The lack of support for hypothesis 1 is in contrast with past research which found six ethnic identity trajectories for ethnic minority adolescents (Huang & Stormshak, 2011). In addition, Syed and Azmitia (2009) found that ethnic identity trajectories did increase for Black, Hispanic, and Asian college students over the course of their college careers. One factor to consider when examining the results of hypothesis 1 is that being Native American, or a member of a given tribal nation, is more than just an ethnicity. Thus, this finding might not be very surprising when considering that ethnic identity in the case of Native American students may be entangled with other identities such as a political or spiritual identity. Research has demonstrated that political identities tend to be quite stable (Huddy, 2001). As mentioned previously, Native

American peoples are a unique subset of the population and should not be considered solely as a racial group (Brayboy, 2005). Hence, the results of this study may point to the notion that for Native American students, approaching how they see themselves and their identities as Native American peoples might not be best approached from a solely ethnic identity lens. Furthermore, the notion of Native American identity and its complexities has not yet been fully described nor understood in research.

As mentioned previously, Syed and Azmitia (2009) did find changes in ethnic identity for other ethnic minority groups. Hence, given the complex nature of Native American identity, future research might explore the stability of Native American ethnic identity prior to entering college, as well as the impact of other elements of identity, such as political and spiritual identity. Lastly, although the analytic technique did cluster similar trajectories together, it also gives an average slope and intercept for each trajectory class. This approach has the potential to mask inner-class variability. Thus, some participants may have had significant increases or decreases in their levels of ethnic identity but due to a lack of sample size of similar others, they were not found as a distinct trajectory class.

Hypothesis 2 proposed that cultural immersion would be associated with initial levels of ethnic identity for Native American college students. This hypothesis was supported in that results of the analysis revealed that 26% of the variance in ethnic identity was accounted for by cultural immersion. This result is consistent with past research which demonstrated that Native American youth who participated in cultural events and activities or went to schools with higher populations of other Native American students had higher levels of ethnic identity (Lysne & Levy, 1997; Schweigman et al., 2011).

Since ethnic identity did not change over the course of college, and cultural immersion did predict higher levels of initial ethnic identity, Native American ethnic identity may potentially be fully established prior to entering college. In addition, the reported level of cultural immersion that Native American peoples reported having, appears to be formative in shaping how they felt about their ethnic group. As Huddy (2001) discusses, identity (in their case, American identity) does not mean the same thing to everyone who identifies with it. This is an important distinction that social identity theory often leaves out. As demonstrated in the exploratory analyses, some students viewed their connection to their tribal nations as being purely political or transactional while others viewed it in more spiritual ways. When considering participants who had high cultural immersion (one standard deviation above the mean) and were in the high ethnic identity trajectory class in contrast with students low in cultural immersion (one standard deviation below the mean) and in the low ethnic identity trajectory class, very different notions can be seen when they were asked about their participation and connection to their tribes. Those in the high-high group stated:

> "My connection to my tribal community is deep. My ancestors, my grandparents, my parents, aunties, uncles, cousins, they all keep me connected to my tribal community. The teachings and beliefs regarding our ceremonies and ways of life are innate to me."
>
> "I am a Division Manager for my tribe. I have worked for the organization for seven years. My grandfather was a man of integrity, honor, and believed in our heritage. His legacy is my connection to our tribe."

These statements demonstrate a familial, communal, and historical connection. In contrast, two students in the low-low group stated:

> "I receive aid from my tribe to go to school and they motivate me to do well."

"I voted in the last election."

These statements indicate a tangible or political connection, rather than an emotional/spiritual connection as seen in the high-high group. Thus, it appears that cultural immersion not only predicts one's level of ethnic identity, but it may predict how one identifies with that group.

Research questions 1 through 8 focused on how Native American students experienced college differently based on their ethnic identity trajectory level. First, students who fell into the high ethnic identity trajectory class reported the highest levels of campus comfort. This was statistically significantly different from the level of campus comfort reported by those in the low and moderate ethnic identity trajectory classes. Hence, highly identified students reported the highest levels of comfort on campus being around and speaking with other students regardless of their ethnic backgrounds. Research question 4 focused on how the quality of Native American students reported social interactions surrounding race and ethnicity with faculty could vary by ethnic identity trajectory class. Students in the high ethnic identity trajectory class reported the highest level of quality interactions with faculty. This finding was statistically significantly higher than both the moderate and low identified groups (which did not differ from one another). Practically, this indicates that Native American students with a high ethnic identity level were more likely to have faculty mentors with whom they could discuss their career plans, academic goals, and have genuine and authentic interactions.

Santos, Ortiz, Morales, and Rosales (2007) discuss how having a multicultural campus can lead to greater levels of belonging/acceptance and multicultural competence. In addition, Emery (2011) discusses the importance for a diverse faculty at university who can support and mentor underrepresented students. Specifically for Native American students, having a faculty

mentor can improve academic outcomes, as well as providing someone who will "offer a sympathetic ear and critical eye" (Emery, 2011, p. 7) to racial problems they may experience on a majority White college campus. Given the findings that highly identified students had higher levels of campus comfort and higher quality faculty interactions coupled with the communal orientation of the qualitative responses for those in the high ethnic identity trajectory class, it seems as though highly identified Native American students in this study have found communities on campus where they feel comfortable, mentored, listened to, and accepted. This finding is important given that sense of community is often integral to many Native American cultures (Brayboy, 2005; Garrett & Garrett, 1994). Furthermore, the notion of community is a vital part of national sovereignty. Community allows individuals to share ways of knowing and being that help them understand traditions and issues such that self-determination, education, government, and identification can be understood and enacted by all in the community (Brayboy, 2005). This is well explained by the fifth tenet of TCRT which discusses "survivance." Survivance is a combination of survival and resistance. Survivance is a reaction to ongoing settler colonialism where Native American peoples have been forced to adapt to the changes imposed on them. Thus, highly identified students on campus may be carving out a community where they may be able to stay together as well as resist settler colonialism.

Research question 2 found that students in the high ethnic identity trajectory class reported lower quality social interactions surrounding race and ethnicity than those in the low ethnic identity trajectory class. These findings are surprising given that that the highly identified students reported the highest levels of campus comfort. Based on this, it appears that highly identified Native American students seem to seek out communities in which they feel

comfortable on campus but might struggle outside of those communities. Santos et al. (2007) also discuss how multicultural campuses can sometimes lead to greater interethnic segregation, which can lead to greater interethnic tensions as reported by White students. That is, White students reported that interethnic segregation was threatening to them. On a predominately White campus, unfortunately, this discomfort felt by White students may play a role in the ways in which they interact with Native American students. Hence, Native American students reporting lower quality social interactions could be explained partially by their experiences interacting with threated White students.

Tribal Critical Race theory explains that it is the goal of institutions of higher education as well as the dominant society to change (colonize) Native American students to fit with the values of the dominant society (Brayboy, 2005). Thus, it could be that because highly identified Native American students also had higher levels of cultural connection, they may not necessarily fit the mold that predominately White institutions wish them to, and thus, non-Native American students may be more cold or aloof, or treat them poorly for not adhering to the norms of the dominant campus culture.

Research question 3 examined the quality of Native American students' reported social interactions surrounding race and ethnicity in the classroom. Those in the high ethnic identity trajectory class reported the poorest experiences in the classroom surrounding race and ethnicity, followed by the moderate group, and the low group. Specifically, the highly identified students felt the curriculum did not provide relevant examples to their ethnic group and perceived that they needed to speak for all Native American peoples in classroom discussions more frequently than the other two groups.

Emery (2011) discusses the need for academic institutions to incorporate relevant examples and lessons into the curriculum as it demonstrates the university's commitment to multiculturalism. When multicultural teachings are only added in as a single lesson, unit, or training, it centers White Eurocentric learning as the "correct" way to think about things. Furthermore, Emory (2011) discusses how institutions of higher education have a duty to work with Tribal leaders to develop knowledge of local cultures and political issues so that misunderstandings and stereotypes can be broken down and a greater sense of understanding and inclusion can be fostered. This finding is of particular cultural relevance in current media with the cultural crusade to abolish the teachings of Critical Race Theory in educational institutions (Meckler & Natanson, 2021). As this study demonstrates, other students and faculty are not racially educated or sensitive to Native American students' experiences or concerns. Thus, with the further erosion of the already limited amount of information that is currently taught regarding race and ethnicity in most curricula, this issue will only grow worse.

Research question 5 looked at stress experienced from dealing with others' race/ethnicity-based expectations. Those in the high ethnic identity trajectory class had the highest levels of stress stemming from others' expectations of them followed by the moderate group, and the low identified group. This indicates that highly identified students felt the need to participate in Native American activities on campus, receive certain grades, and live up to the standards that others placed on them as a function of being Native American, more so than the low and moderately identified groups.

This result is consistent with results found by Jaramillo, Mello, and Worrell (2016) who identified stereotype threat as more pronounced in Native American youth with high ethnic identities. That is, students who had high levels of ethnic identity were affected to a greater

extent academically when they endorsed a series of items that indicated they experienced a high degree of stereotype threat than Native American youth with lower levels of ethnic identity. As discussed earlier, social identity theory posits that individuals who strongly identify with a particular group may incorporate aspects of that group into their self-concept, which can influence their social perception (Tajfel & Turner, 1979). Thus, this finding is in line with literature that discusses how highly identified individuals would be more prone to stereotype threat, and thus, more affected by it (Good, Dweck & Aronson, 2007).

Research question 6, 7, and 8 examined reported levels of discrimination. Students in the high ethnic identity trajectory class reported the highest levels of both explicit and personal based discrimination, followed by the moderately identified group, and the low identified group. Hence, highly identified Native American students reported that they experience the most overt racially based discrimination of all three groups. Furthermore, those in the high ethnic identity trajectory class also reported the highest levels of group-based discrimination followed by the low identified group, with the moderately identified group reporting the lowest levels of group-based discrimination. Hence, highly identified Native American students felt that Native Americans a group experience more discrimination than the low or moderately identified students.

These findings can be explained by the reciprocal theory of ethnic identity and discrimination (Jones & Galliher, 2015), which proposes that discrimination makes individuals more aware of their ethnic identity, and thus strengthens it. In turn this greater strength of ethnic identity causes individuals to be more vigilant when spotting and recognizing discriminatory instances for what they are. Hence, this finding makes sense given that the highly identified Native American students are likely better able to attribute both explicit as well as seemingly

ambiguous events to discrimination given their identity status. Furthermore, being that the highly identified students reported greater cultural immersion, it is logical that they would be more aware of discriminatory events relayed to them by friends, family, and community members.

Hypothesis 3 examined differences in GPA based on ethnic identity trajectory class. This hypothesis was not supported for two reasons. One, Native American students' ethnic identity levels did not change over time, but more importantly, students in the high ethnic identity trajectory class had statistically significantly lower GPAs than those in the low ethnic identity class, with the moderate ethnic identity class not being statistically significant from either class.

This result may be partially explained by the finding that those in the high ethnic identity class reported higher degrees of stress as a result of the expectations others placed on them due to their ethnicity. Past studies found that stereotype threat interacted with ethnic identity to decrease academic performance in Native American youth (Jaramillo et al., 2016). In a study that grouped Native American students with all other ethnic minority students (6% of the students were Native American) results revealed that stereotype threat cause greater desire to withdraw from school when the student was highly academically driven. This was because stereotype threat worked to make the school a more aversive environment (Osborne & Walker, 2006). Although these two studies make a valuable contribution, much more attention must be given to the notion of stereotype threat and Native American students specifically (Smith & Hung, 2008). Furthermore, given that the highly identified students in this sample reported higher levels of stress based on others' expectations for them surrounding being Native American, it is plausible that stereotype threat may be the cause of the lower GPAs found for students in the high ethnic identity trajectory class.

Finally, hypothesis 4 examined the relationships between persistence in college and ethnic identity trajectory. This hypothesis was not supported in that, again, ethnic identity trajectories were flat, but more importantly, there were no statistically significant findings by ethnic identity trajectory class for persistence rate. That is, ethnic identity trajectory class had no bearing on a student's persistence in college in this sample. This finding is surprising, as several studies have reported relationships between persistence rate and ethnic identity (Gloria & Kurpius, 2001; Huffman, 2001). One potential explanation for this finding is participant attrition. The participants who were excluded from the study had higher persistence rates on average. It could be that these students could have graduated faster, and thus, been no longer eligible to participate in this study. Thus, without the ability to include these excluded participants in the full study, we may be lacking critical information regarding persistence rates and ethnic identity levels.

Although the results of this study make several important contributions to the literature, there were several limitations which must be discussed. Primarily, these results included members from 39 tribes in the United States. Being that there are over 500 federally recognized, as well as unrecognized tribes in the United States, these results are not reflective of all Native American peoples, nor all tribal nations. Another limitation in this study is the statistically significant differences in age, persistence rate, GPA, and a marginal significant difference in ethnic identity level between those who were retained for this study and those who were excluded due to lack of sustained participation. These differences decrease the generalizability of the findings as statistics indicate these two groups of students were statistically different from one another. Although these differences in the included and excluded groups are important to consider, it is also important to note that participant attrition is a normal and frequent occurrence

in longitudinal data collection. In a simulation study, Gustavson, von Soest, Karevold, and Røysamb (2012) found that despite the problems that may occur with participant attrition and the statistically different characteristics between the initial and final sample of participants, longitudinal studies did still provide value to the body of research for which they are contributing.

Another limitation to consider is that the latent class growth analysis may have masked inner-trajectory class differences. Hence, some participants may have had significant changes in ethnic identity but due to the technique which took the mean slope and intercept of each trajectory class, these individuals may have been masked. Future studies should consider other analytic techniques such as examining individuals with significant changes in ethnic identity separately or gathering a larger sample size such that these trajectory classes will be large enough to be discoverable using the current technique.

In addition to these limitations, the data included in this study were self-report which is often cited as being susceptible to social desirability bias among a host of other issues. However, Chan (2010) argues that there is no evidence to suggest that these data are inherently flawed and can in fact provide equally valuable information as data collected by other means. Lastly, this study only includes students from one university. Hence, university level predictors could have played an important part in explaining the differences in campus experience based on ethnic identity trajectory level.

Results of this study make several important contributions. First, this study established three distinct clusters of ethnic identity levels in the present sample (high, moderate, and low). These clusters of students experience college differently. The high ethnic identity trajectory class appears to have a supportive community on campus (given the high levels of campus comfort

and faculty interactions) which may help them buffer the higher levels of discrimination they reported experiencing as well as the discomfort they reported experiencing in social and classroom situations. Furthermore, although a causal model was not tested, it is posited that these difficult campus experiences, in addition to the stress that highly identified students reported facing based on others' expectations for them as Native American students, may be what contributed to the significantly lower levels of GPA seen in this study. These findings demonstrate that although having a high level of ethnic identity has some beneficial factors such as better ability to find community on campus, it also comes with the potential to cause more stress via stereotype threat as well as increased awareness and experience of discrimination. Hence, as discussed previously, it may be the case that due to ongoing settler colonialism, highly identified students are not fully welcome on majority White campuses. Thus, future studies should continue to investigate community building and community seeking for highly identified Native American students to provide support for the negative experiences these students may face on majority White campuses as well as gain a better understanding of the paradox that highly identified students may face. In addition, it is imperative that universities examine possible interventions to improve the experiences of highly identified Native American students on their campuses. Furthermore, it would be advantageous to investigate culturally competent curriculum changes and the effects on classroom comfort and social interactions surrounding race for highly identified Native American students. This study also provides further evidence that is should be the duty of universities to implement these curriculum changes to better education all who work and attend the university, as well as provide resources specifically for Native American students to be able to find and build communities on campus.

In contrast to the results seen by highly identified students, almost the opposite pattern was found for those in the low ethnic identity trajectory class. That is, these students reported poor levels of campus comfort and faculty interactions, however, they reported low levels of stress associated with being Native American and discrimination, and higher quality classroom and social interactions surrounding race. This pattern of results suggest that the low identified students may potentially be less racially aware (via low social categorization or reciprocal theory of ethnic identity and discrimination; Jones & Galliher, 2015; Tajfel & Turner, 1979) and might not consider race/ethnic interactions as important parts of their college experiences. Future studies should investigative inner-ethnic differences in the ways in which a person may identify with their ethnic group, and how that interacts with their environment. This is of special relevance for Native American peoples as, as discussed previously, Native American identity can be particularly complex.

This study examined ethnic identity in Native American college students. However, a potentially important factor that this study was unable to measure was the extent to which participants held a bi-cultural identity. Bi-cultural identity is the ability for Native American students to adapt to both the dominant White culture in the United States as well as their own Tribal cultures equally well (Moran, Fleming, Somervell, & Manson, 1999). Adding more complexity to the notion of ethnic identity is the fact that many Native American peoples hold additional ethnic identities as a result of being multi-racial. However, studies have found greater levels of wellbeing for Native American youth who held a bicultural identity (defined in this case as feeling equally at ease in the dominate White majority culture as in other cultures in which they identify as members; Moran et al., 1999). Thus, bi-cultural identification could be an additional important predictor that might explain some of the differences found based on ethnic

identity level. Future studies should seek to examine how bi-cultural identity functions over time in Native American college students and how this may influence their experiences and achievements.

References

Allison, P. D. (2012, April). Handling missing data by maximum likelihood. In SAS global forum (Vol. 2012, No. 312, pp. 1038-21).

Altschul, I., Oyserman, D., & Bybee, D. (2006). Racial-ethnic identity in mid-adolescence: Content and change as predictors of academic achievement. *Child development*, *77*(5), 1155-1169.

Bell, D. (1992). Faces at the Bottom of the Well: The Permanence of Racism. New York: Basic. 2004 Silent Covenants: Brown v. Board of Education and the Unfulfilled Hopes for Racial Reform.

Benjamin, D. P., Chambers, S., & Reiterman, G. (1993). A focus on American Indian college persistence. *Journal of American Indian Education*, 24-40.

Bernal, M. E., Knight, G. P., Garza, C. A., Ocampo, K. A., & Cota, M. K. (1990). The development of ethnic identity in Mexican-American children. *Hispanic Journal of Behavioral Sciences*, *12*(1), 3-24.

Brayboy, B. (2013). Tribal critical race theory: An origin story and future directions. In *Handbook of critical race theory in education* (pp. 88-100). Taylor and Francis.

Cabrera, A. F., & Nora, A. (1994). College students' perceptions of prejudice and discrimination and their feelings of alienation: A construct validation approach. *The Review of Education/Pedagogy/Cultural Studies*, *16*(3-4), 387-409.

Chan, D. (2010). So why ask me? Are self-report data really that bad?. In *Statistical and methodological myths and urban legends* (pp. 329-356). Routledge.

Chavez, A. F., & Guido-DiBrito, F. (1999). Racial and ethnic identity and development. New directions for adult and continuing education, 84, 39-47.

Chee, C. L., Shorty, G., & Robinson Kurpius, S. E. (2019). Academic stress of Native American undergraduates: The role of ethnic identity, cultural congruity, and self-beliefs. *Journal of Diversity in Higher Education*, *12*(1), 65.

Dobbs, M., & Crano, W. D. (2001). Outgroup accountability in the minimal group paradigm: Implications for aversive discrimination and social identity theory. *Personality and Social Psychology Bulletin*, *27*(3), 355-364.

Duffy, R. D., & Klingaman, E. A. (2009). Ethnic identity and career development among first-year college students. *Journal of Career Assessment*, *17*(3), 286-297.

Dunbar-Ortiz, R. (2014). *An indigenous peoples' history of the United States* (Vol. 3). Beacon Press.

Emery, K. (2011). Breaching the "cultural contract:" Committing to cultural sensitivity and cultural inclusion for Native American college students. *Academic Leadership: The Online Journal*, *9*(1), 13.

Erikson, E. H. (1968). *Identity: Youth and crisis* (No. 7). WW Norton & company.

Garrett, J. T., & Garrett, M. W. (1994). The path of good medicine: Understanding and counseling Native American Indians. *Journal of Multicultural Counseling and development*, *22*(3), 134-144.

Gloria, A. M., & Robinson Kurpius, S. E. (2001). Influences of self-beliefs, social support, and comfort in the university environment on the academic nonpersistence decisions of American Indian undergraduates. *Cultural Diversity and Ethnic Minority Psychology*, *7*(1), 88.

Good, C., Dweck, C. S., & Aronson, J. (2007). Social identity, stereotype threat, and self-theories. *Contesting stereotypes and creating identities: Social categories, social identities, and educational participation*, 115-135.

Gonyea, R. M., Kish, K. A., Kuh, G. D., Muthiah, R. N., & Thomas, A. D. (2003). College Student Experiences Questionnaire: Norms for the Fourth Edition. College Student Experiences Questionnaire Assessment Program (NJ1).

Gudykunst, W. B., & Schmidt, K. L. (1987). Language and ethnic identity: An overview and prologue. *Journal of Language and Social Psychology*, *6*(3-4), 157-170.

Gustavson, K., von Soest, T., Karevold, E., & Røysamb, E. (2012). Attrition and generalizability in longitudinal studies: findings from a 15-year population-based study and a Monte Carlo simulation study. *BMC public health*, *12*(1), 1-11.

Harman, H. H. (1960) *Modern factor analysis*. Chicago, IL. University of Chicago Press.

Helm, E. G., Sedlacek, W. E., & Prieto, D. O. (1998). The relationship between attitudes toward diversity and overall satisfaction of university students by race. *Journal of College Counseling*, *1*(2), 111-120.

Huddy, L. (2001). From social to political identity: A critical examination of social identity theory. *Political psychology*, *22*(1), 127-156.

Huffman, T. (2001). Resistance theory and the transculturation hypothesis as explanations of college attrition and persistence among culturally traditional American Indian students. *Journal of American Indian Education*, 1-23.

Jaramillo, J., Mello, Z. R., & Worrell, F. C. (2016). Ethnic identity, stereotype threat, and perceived discrimination among Native American adolescents. *Journal of Research on Adolescence*, *26*(4), 769-775.

Leppel, K. (2005). College persistence and student attitudes toward financial success. *College Student Journal*, *39*(2), 223-242.

Lundberg, C. A., & Schreiner, L. A. (2004). Quality and frequency of faculty-student interaction as predictors of learning: An analysis by student race/ethnicity. Journal of College Student Development, 45(5), 549-565.

Lynn, M., & Dixson, A. D. (Eds.). (2013). *Handbook of critical race theory in education*. Routledge.

Lysne, M., & Levy, G. D. (1997). Differences in ethnic identity in Native American adolescents as a function of school context. *Journal of Adolescent Research*, *12*(3), 372-388.

Marshall, S. (1995). Ethnic socialization of African American children: Implications for parenting, identity development, and academic achievement. *Journal of Youth and Adolescence*, *24*(4), 377-396.

McClain, S., Beasley, S. T., Jones, B., Awosogba, O., Jackson, S., & Cokley, K. (2016). An examination of the impact of racial and ethnic identity, impostor feelings, and minority status stress on the mental health of Black college students. *Journal of Multicultural Counseling and Development*, *44*(2), 101-117.

Meckler, L., & Natanson, H. (2021, May 3). *As schools expand racial equity work, conservatives see a new threat in critical race theory*. The Washington Post. https://www.washingtonpost.com/education/2021/05/03/critical-race-theory-backlash/.

Miller-Cotto, D., & Byrnes, J. P. (2016). Ethnic/racial identity and academic achievement: A meta-analytic review. *Developmental Review*, *41*, 51-70.

Moran, J. R., Fleming, C. M., Somervell, P., & Manson, S. M. (1999). Measuring bicultural ethnic identity among American Indian adolescents: A factor analytic study. *Journal of adolescent research*, *14*(4), 405-426.

Muthén, B., & Muthén, L. (2017). *Mplus* (pp. 507-518). Chapman and Hall/CRC.

National Center for Education Statistics (NCES)(2019a), Table 306.30. Fall enrollment of U.S. residents in degree-granting postsecondary institutions, by race/ethnicity: Selected years, 1976 through 2029. Retrieved from https://nces.ed.gov/programs/digest/d19/tables/dt19_306.30.asp

National Center for Education Statistics (NCES)(2019b), Table 302.62. Percentage of 18- to 24-year-olds enrolled in college and percentage distribution of those enrolled, by sex, race/ethnicity, and selected racial/ethnic subgroups: 2010 and 2018. Retrieved from https://nces.ed.gov/programs/digest/d19/tables/dt19_302.62.asp

National Center for Education Statistics (NCES)(2019c), Figure 23.1. Graduation rates from first institution attended for first-time, full-time bachelor's degree-seeking students at 4-year postsecondary institutions, by race/ethnicity and time to completion: Cohort entry year 2010. Retrieved from https://nces.ed.gov/programs/raceindicators/indicator_red.asp

Nylund, K. L., Asparouhov, T., & Muthén, B. O. (2007). Deciding on the number of classes in latent class analysis and growth mixture modeling: A Monte Carlo simulation study. *Structural equation modeling: A multidisciplinary Journal*, *14*(4), 535-569.

Ong, A. D., Phinney, J. S., & Dennis, J. (2006). Competence under challenge: Exploring the protective influence of parental support and ethnic identity in Latino college students. *Journal of adolescence*, *29*(6), 961-979.

Osborne, J. W., & Walker, C. (2006). Stereotype threat, identification with academics, and withdrawal from school: Why the most successful students of colour might be most likely to withdraw. *Educational psychology*, *26*(4), 563-577.

Pahl, K., & Way, N. (2006). Longitudinal trajectories of ethnic identity among urban Black and Latino adolescents. *Child development*, *77*(5), 1403-1415.

Peteet, B. J., Montgomery, L., & Weekes, J. C. (2015). Predictors of imposter phenomenon among talented ethnic minority undergraduate students. *The Journal of Negro Education*, *84*(2), 175-186.

Phinney, J. S. (1988, June). The Development of Ethnic Identity in Adolescents. Paper presented at the Utah State University Workshop on Identity Formation: Theoretical and Empirical Issues. Logan, Utah.

Phinney, J. S. (1989). Stages of ethnic identity development in minority group adolescents. *The Journal of Early Adolescence*, *9*(1-2), 34-49.

Phinney, J. S. (1991). Ethnic identity and self-esteem: A review and integration. *Hispanic journal of behavioral sciences*, *13*(2), 193-208.

Phinney, J. S., & Chavira, V. (1992). Ethnic identity and self-esteem: An exploratory longitudinal study. *Journal of adolescence*, *15*(3), 271-281.

Phinney, J. S., Jacoby, B., & Silva, C. (2007). Positive intergroup attitudes: The role of ethnic identity. *International Journal of Behavioral Development*, *31*(5), 478-490.

Reyes, N. A. S., & Shotton, H. J. (2018). Bringing visibility to the needs and interests of Indigenous students: Implications for research, policy, and practice. *National Institute for Transformation and Equity. https://cece. sitehost. iu. edu/wordpress/wp-content/uploads/2017/02/Bringing-Visibility-to-the-Needs-and-Interests-of-Indigenous-Students-FINAL-2. pdf*.

Roberts, R. E., Phinney, J. S., Masse, L. C., Chen, Y. R., Roberts, C. R., & Romero, A. (1999). The structure of ethnic identity of young adolescents from diverse ethnocultural groups. *J. Early Adolesc.* 19, 301-322.

Rowe, A. C., & Tuck, E. (2017). Settler colonialism and cultural studies: Ongoing settlement, cultural production, and resistance. *Cultural Studies↔ Critical Methodologies*, *17*(1), 3-13.

Roy, J. (2007). Latent class models and their application to missing-data patterns in longitudinal studies. Statistical Methods in Medical Research, 16(5), 441-456.

Santos, S. J., Ortiz, A. M., Morales, A., & Rosales, M. (2007). The relationship between campus diversity, students' ethnic identity and college adjustment: A qualitative study. *Cultural Diversity and Ethnic Minority Psychology*, *13*(2), 104.

Schafer, J. L., & Graham, J. W. (2002). Missing data- our view of the state of the art. Psychological methods, 7(2), 147.

Schweigman, K., Soto, C., Wright, S., & Unger, J. (2011). The relevance of cultural activities in ethnic identity among California Native American youth. *Journal of psychoactive drugs*, *43*(4), 343-348.

Seaton, E. K., Scottham, K. M., & Sellers, R. M. (2006). The status model of racial identity development in African American adolescents: Evidence of structure, trajectories, and well-being. *Child development*, *77*(5), 1416-1426.

Shotton, H., Lowe, S., & Waterman, S. (2013). Beyond the asterisk: Understanding Native American college students.

Smith, C. S., & Hung, L. C. (2008). Stereotype threat: Effects on education. *Social Psychology of Education*, *11*(3), 243-257.

Syed, M., & Azmitia, M. (2009). Longitudinal trajectories of ethnic identity during the college years. *Journal of Research on Adolescence*, *19*(4), 601-624.

Tein, J. Y., Coxe, S., & Cham, H. (2013). Statistical power to detect the correct number of classes in latent profile analysis. *Structural equation modeling: a multidisciplinary journal*, *20*(4), 640-657.

Tsai, K. M., & Fuligni, A. J. (2012). Change in ethnic identity across the college transition. *Developmental Psychology*, *48*(1), 56.

U.S. Census Bureau (2019). *American Community Survey*. Retrieved from https://data.census.gov/cedsci/table?q=S0201&t=006%20-%20American%20Indian%20and%20Alaska%20Native%20alone%20%28300,%20A01-Z99%29%3A009%20-%20American%20Indian%20and%20Alaska%20Native%20alone%20or%20in%20combination%20with%20one%20or%20more%20other%20races%20%28300,%20A01-Z99%29%20%26%20%28100-299%29%20or%20%28300,%20A01-Z99%29%20or%20%28400-999%29&tid=ACSSPP1Y2019.S0201&hidePreview=true.

Van De Schoot, R., Sijbrandij, M., Winter, S. D., Depaoli, S., & Vermunt, J. K. (2017). The GRoLTS-checklist: guidelines for reporting on latent trajectory studies. *Structural Equation Modeling: A Multidisciplinary Journal*, *24*(3), 451-467.

Wardenaar, K. (2020). Latent Class Growth Analysis and Growth Mixture Modeling using R- A tutorial for two R-packages and a comparison with Mplus.

Wu, Y. J., Outley, C., & Matarrita-Cascante, D. (2019). Cultural immersion camps and development of ethnic identity in Asian American youth. *Journal of Youth Development*, *14*(2), 166-182.

Table 1. *List of Participants' Self-Reported Tribal Nations*

Tribal Nation	Number Enrolled
Cherokee	221
Choctaw	159
Chickasaw	87
Muscogee (Creek)	75
Osage	22
Potawatomi	18
Comanche	16
Seminole	13
Kiowa	9
Seneca Cayuga	9
Shawnee	8
Quapaw	7
Wichita	7
Otoe Missouria	5
Caddo	5
Cheyenne and Arapaho	4
Navajo	4
Delaware	3
Kickapoo	2
Miami	2
Pawnee	2
San Carlos Apache	2
Aleut	1
Chitimacha	1
Colville	1
Confederated Tribes of Grand Ronde	1
Doyon Limited	1
Iowa	1
Karuk	1
Kaw	1
Ohkay Owingeh	1
Oneida	1
Quechan	1
Peoria	1
Ponca	1
Santa Clara Pueblo	1
Sokaogon Chippewa Community	1
Tohono O'odam	1
Wyandotte	1
Pueblo of Zuni	1
Declined to Answer	97

Table 2. *T-test Comparison of Demographic factors for Participants Who Were Included and Excluded in This Study*

	Included *M*	Excluded *M*	*t*	*df*	*p*
Age at First Measurement Occasion	20.98	22.85	-6.88	1829.6	<.001
Final Cumulative GPA	3.26	3.07	6.31	1846.3	<.001
Persistence Rate	12.67	14.02	-8.06	1326.6	<.001
Ethnic Identity Time Point 1	2.79	2.84	-1.87	1668.1	.06

Table 3. *Descriptive Statistics for all Study Variables*

Variable	N	Min	Max	M	SD	Skew	Kurtosis	Percent Missing
Ethnic Identity Time Point 1	791	1	4	2.79	.59	0	-.01	0.00%
Ethnic Identity Time Point 2	791	1	4	2.78	.58	.01	-.06	0.00%
Ethnic Identity Time Point 3	357	1	4	2.80	.59	-.03	-.07	54.87%
Off campus cultural immersion	778	1	5.42	2.07	.80	1.24	1.5	1.64%
Campus comfort	788	1	5	3.91	.62	-.47	.64	0.38%
Campus Experience with Race	789	1	5	3.68	.52	.08	-.12	0.25%
Campus Classroom Experience	790	1	5	3.53	.61	-.27	.09	0.13%
Experience with Faculty	697	1	5	2.22	.60	.69	.16	11.88%
Native Expectations	790	1	5	2.25	.75	.44	.02	.13%
Explicit Discrimination	682	1	10.7	2.27	1.78	2.17	4.79	11.88%
Personal Discrimination	702	1	5	1.68	.94	1.4	1.01	11.25%
Group Discrimination	702	1	5	3.07	1.34	-.15	-1.07	11.25%
Final Cumulative GPA	791	1	4	3.26	.51	-.88	.85	0.00%
Persistence Rate	774	.54	23.67	12.67	3.68	-1.17	1.2	2.15%

Table 4. *Correlations Among Study Variables*

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Ethnic identity Time Point 1													
2. Ethnic identity Time Point 2	.65†												
3. Ethnic identity Time Point 3	.64†	.69†											
4. Off campus cultural immersion	.68†	.59†	.58†										
5. Campus comfort	.07	.15†	.12*	.08*									
6. Campus Experience with Race	-.11°	-.03	-.09	-.10°	.38†								
7. Campus Classroom Experience	.26†	-.25†	-.29†	-.25†	.30†	.44†							
8. Experience with Faculty	.11°	.15†	.20†	.08*	.28†	.08*	.04						
9. Stress Related to Others' Expectations due to being Native American	.40†	.37†	.40†	.35†	-.21†	-.65†	-.69†	.04					
10. Explicit Discrimination	.42†	.42†	.48†	.43†	-.04	-.15†	-.44†	.13†	.45†				
11. Personal Discrimination	.47†	.48†	.48†	.49†	-.02	-.12°	-.39†	.06	.43†	.53†			
12. Group Discrimination	.23†	.22†	.18†	.20†	.07	.06	-.14†	.04	.13†	.26†	.50†		
13. Final Cumulative GPA	-.15†	-.06	-.14°	-.17†	.06	.02	.10°	.14†	-.11°	-.20†	-.11°	.03	
14. Persistence Rate	-.08*	-.03	-.04	-.08*	.05	.04	.00	.13†	-.05	-.06	-.02	.06	.22†

Note. † Indicates significance at the $p < .001$ level, ° indicates significance at the $p < .01$ level, and * indicates significance at the $p < .05$ level.

Table 5. *Model Comparison Between Models Based on Number of Trajectory Classes*

Model	Class Number	N	Percent in Class	Intercept	Slope
1 Class	1	791	100.00%	2.790	0.001
2 Class	1	278	35.15%	3.313	0.016
	2	513	64.86%	2.493	-0.001
3 Class	1	157	19.85%	2.160	-0.022
	2	461	58.28%	2.749	0.011
	3	173	21.87%	3.494	0.003
4 Class	1	75	9.48%	3.737	-0.026
	2	207	26.17%	3.128	0.038
	3	386	48.80%	2.629	0.006
	4	123	15.50%	2.087	-0.033
5 Class	1	6	.76%	2.284	-0.589
	2	205	25.92%	3.141	0.042
	3	125	15.80%	2.089	0.025
	4	382	48.29%	2.651	0.003
	5	73	9.23%	3.744	-0.024

Table 6. *Fit Statistics for Model Comparison*

Model	AIC	BIC	Sample Size Adjusted BIC	Entropy
1 Class	3425.058	3448.425	3432.55	-
2 Class	2933.116	2970.502	2945.1	0.721
3 Class	2746.685	2798.091	2763.16	0.735
4 Class	2702.407	2767.833	2723.38	0.709
5 Class	2686.582	2766.028	2712.04	0.736

Table 7. *Group Differences between Ethnic Identity Trajectory Classes*

Variable	F	df	P	η^2	Class 1 Mean: Low Ethnic Identity Level	Class 2 Mean: Moderate Ethnic Identity Level	Class 3 Mean: High Ethnic Identity Level
Campus Comfort	5.939	2,785	.003	.01	3.83a	3.89a	4.05b
Campus Experience with Race	2.903	2, 786	.055	.01	3.75a	3.68ab	3.62b
Campus Classroom Experience	30.83	2, 787	<.001	.07	3.76a	3.55b	3.26c
Experience with Faculty	6.01	2, 694	.003	.02	2.11a	2.21a	2.35b
Native Expectations	73.85	2, 787	<.001	.16	1.82a	2.22b	2.74c
Explicit Discrimination	96.14	2, 679	<.001	.22	1.50a	1.95b	3.80c
Personal Discrimination	104.9	2, 699	<.001	.23	1.19a	1.55b	2.52c
Group Discrimination	25.97	2, 699	<.001	.07	2.68a	2.10b	3.66c
Final Cumulative GPA	4.12	2, 788	<.017	.01	3.32a	3.27ab	3.17b
Persistence Rate	1.43	2, 771	.24	<.01	13.12	12.58	12.50

Table 8. *Proportion of Responses for Cultural Connection Qualitative Questions*

"Please describe your involvement in your tribal community. List activities, rituals, ceremonies, celebrations, etc., that you participate in."			
	Low Ethnic Identity Level Observed N/ Column %	Moderate Ethnic Identity Level	High Ethnic Identity Level
No Participation/ N/A	66/42%	135/29%	6/3%
Partipated/Other Answer	28/18%	168/37%	126/73%
Did Not Respond	63/40%	158/34%	41/24%
"Please describe your connection to your tribal community. Describe what you believe connects you to your tribal community."			
No Connection/ N/A	46/29%	89/19%	6/3%
Connected/Other Answer	50/32%	207/45%	117/68%
Did Not Respond	61/39%	165/36%	50/29%

Note. These resonses were coded by hand. Particiapnt has to explicitly state they did not particpate of had no connection. All other responses were put into the participated/other answer category.

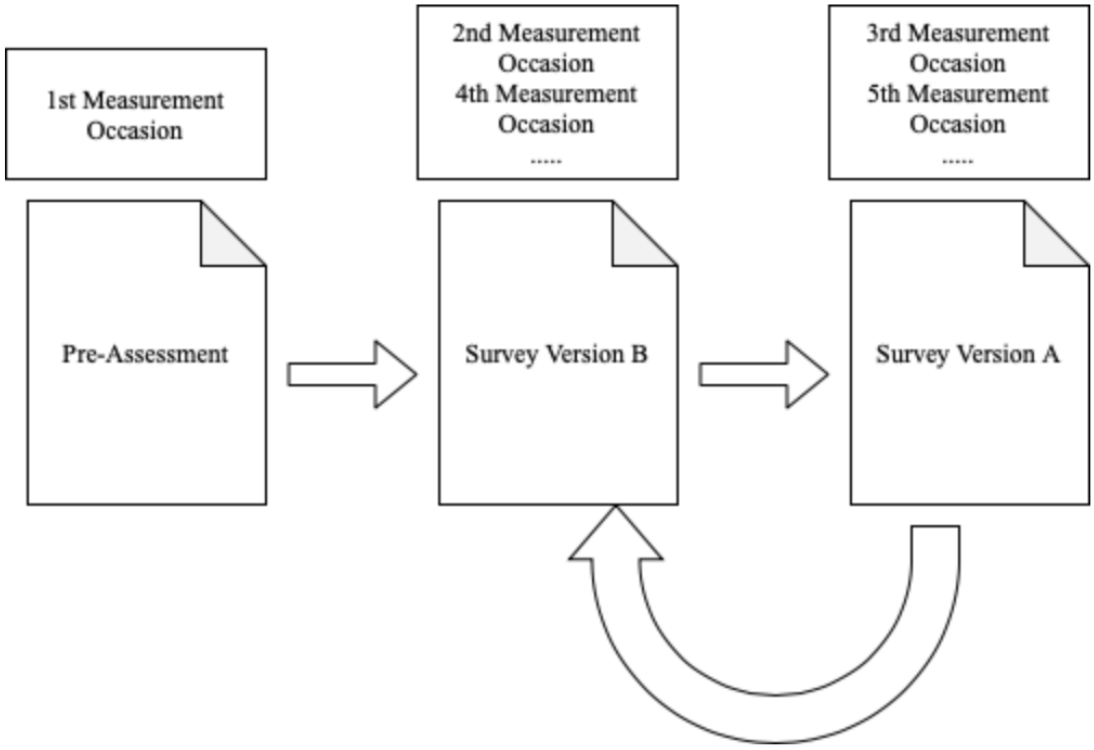


Figure 1. Survey Flow

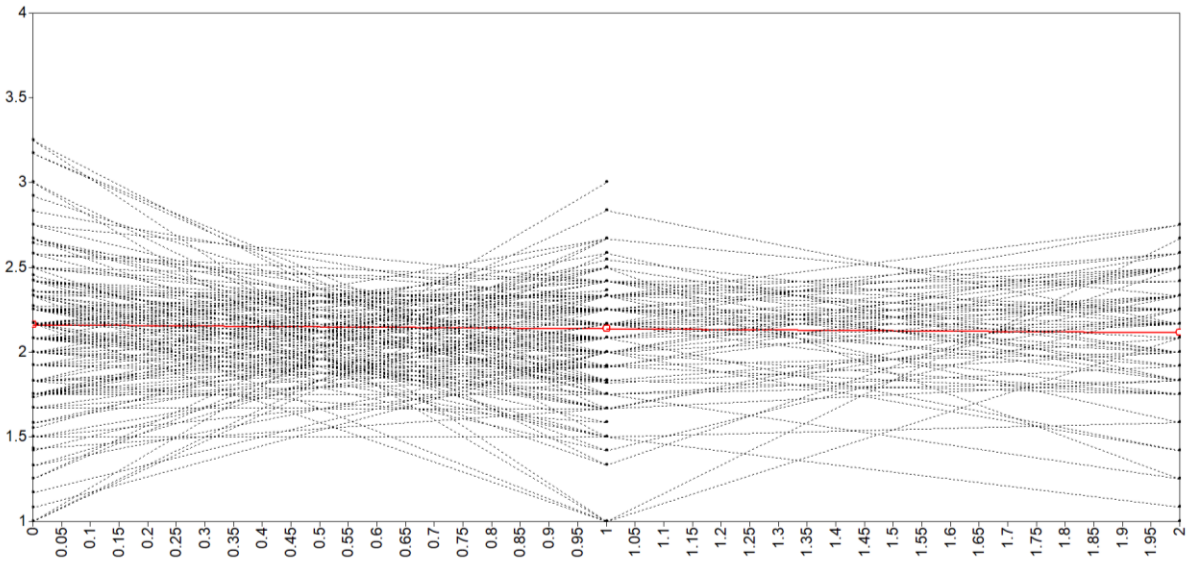


Figure 2. Class 1- Low Ethnic Identity Level

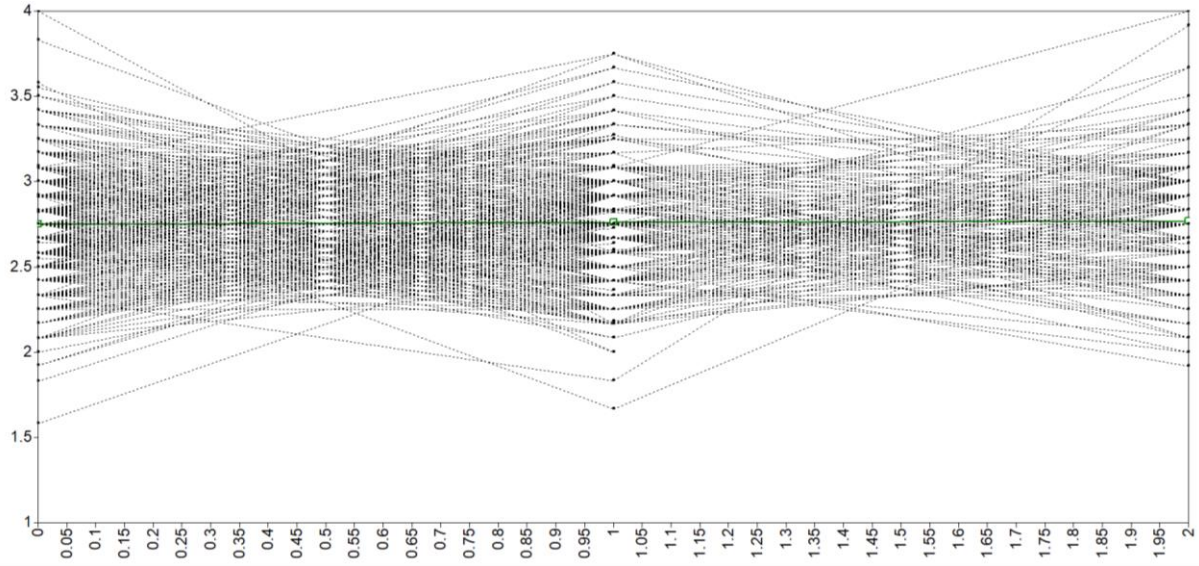


Figure 3. Class 2- Moderate Ethnic Identity Level

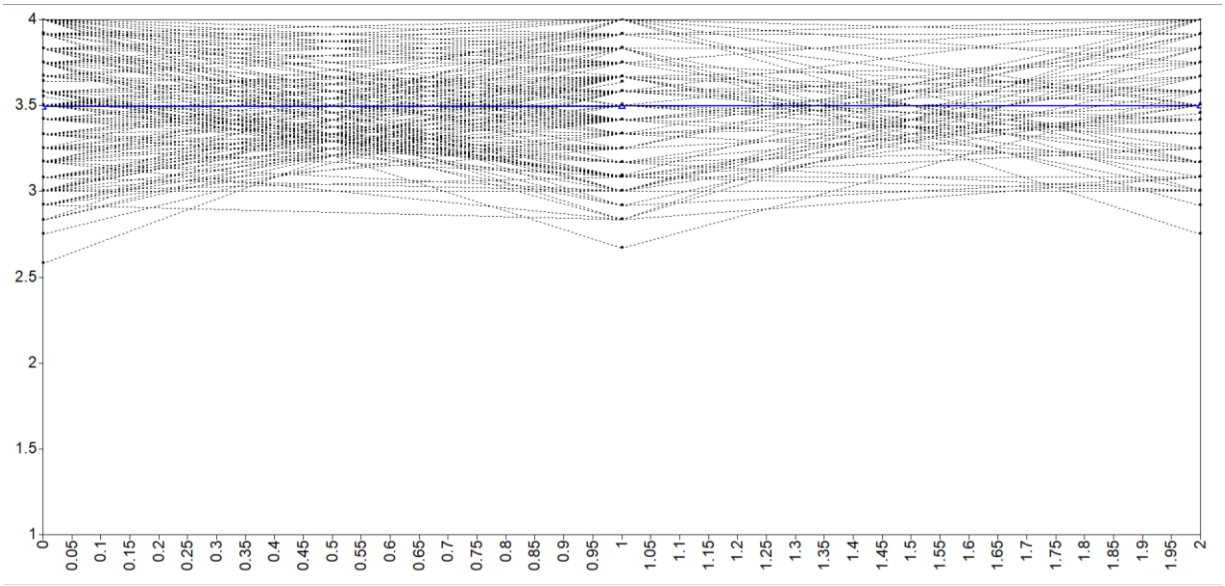


Figure 4. Class 3- High Ethnic Identity Level