# Academic Identity and Latino Adolescents' Academic Achievement: Theoretical and Empirical Foundations, Methodological Challenges, and Lessons Learned

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Abstract

Latino children (i.e., persons less than 18 years of age) are the largest and fastest growing ethnic minority group in U.S. public schools. In Texas, Latino children account for the largest numerical increase of all Latino children in all states. Important to consider are the significantly higher school dropout rates of Latinos compared to those of their White and Black counterparts, a pattern that has continued over a 40-year period. Drawing on the Positive Youth Development perspective, the theory of identity development, and the bioecological model, I designed the *ALCANCE* (Spanish for REACH) Project, a mixed-method longitudinal study, to quantitatively and qualitatively address the following two goals: (a) learn more about how Latino adolescents (or middle school students) in Central Texas come to identify with academics and (b) examine relations between sources of support and socialization, academic identity, school belonging, course enrollment, academic achievement, and gender. As such, the project encompasses two separate studies, a quantitative longitudinal study involving telephone interviews and a qualitative study using focus groups. In this white paper, I present the theoretical and empirical underpinnings of academic identity as a catalyst for postsecondary achievement among Latino students but also describe the methodological challenges I have encountered in implementing this study and the lessons learned not typically addressed in research reports.

*Keywords:* Academic achievement, academic identity, adolescence, Latinos, sources of support

# Academic Identity and Latino Adolescents' Academic Achievement: Theoretical and Empirical Foundations, Methodological Challenges, and Lessons Learned

The education of Latino Texas students matters significantly for the future of the United States. Latino children (i.e., persons less than 18 years of age) are the largest and fastest-growing ethnic minority group in U.S. public schools (Fry & Gonzales, 2008). In Texas, where the growth in the number of children was equivalent to the child population growth in the rest of the country (Murdock et al., 2012a), Latino children accounted for the largest numerical increase of all Latino children in all states (931,012 from 2000 to 2010), followed by California (705,395) and Florida (402,085; Murdock et al., 2012b). These large and growing numbers of Latino youth are significant given their higher school dropout rates compared to those of their White and Black counterparts, a pattern that has continued over a 40-year period (Child Trends, 2014). Overall, these figures translate into a need to better prepare these greatly underserved youth, for their individual academic and occupational achievement, to ensure a talented labor force for the success of Texas and the U.S. in the current global economy, and also to allow the broader professional community to be representative of the larger society they likely serve and of which they are a part.

Preparing Latino youth involves having a better understanding of the factors that might contribute to the bleak numbers. There is a low representation of Latinos in courses (e.g., advanced high school math classes) that provide the foundation toward high school completion, but also toward college attendance and persistence (Riegle-Crumb, 2006). Thus, it makes sense to address how Latino youth take fewer advanced courses than those offered in school or compared to their White peers. For example, there is work that examined whether or not grades received in math courses might explain the differences in math levels completed, but this work

conducted using a nationally represented sample suggests that when Latinos begin at the same math level as Whites in high school, Latinos complete lower levels of the high school math course sequence compared to their White counterparts, and that this finding is *not* explained by grades (Riegle-Crumb, 2006).

An important aspect to consider in addressing the lower levels of advanced classes that Latino youth complete, such as those in math, is the role of cognitive development in course selection. In particular, the emergence of complex thought processes, such as those that contribute to identity development, occur in adolescence (Erikson, 1968); and, it is in adolescence when youth begin to make choices about what classes they take (e.g., in middle school). Together, these more advanced cognitive abilities may be reflected in a specific type of identity process, *academic* identity, or the extent to which individuals self-understand and define themselves in terms of their educational context. In other words, it is important to examine the development of an academic identity among Latino adolescent students and how academic identity relates to students deciding to pursue a certain level of coursework that, in turn, has implications for their postsecondary achievement.

The large number of Latino youth that continue to lag behind peers of other ethnic groups in levels of academic achievement, not having a clear understanding of why Latino youth are also less likely to pursue advanced coursework, and a keen interest in the development of identity at a crucial academic time are the impetuses for this study of academic identity and how it relates to academic achievement, or as a catalyst to postsecondary achievement. I would like to note that I have been particularly motivated to conduct this work with Mexico-origin youth given the sizeable Mexican segment of the growing Latino population in the U.S. (65%), of which only 26% attained a high school diploma and a scarce 9% completed a bachelor's degree (of those 25

years and older in 2010; Motel & Patten, 2012). My intent was to examine the within-group variability of academic identity processes among Mexico-origin adolescents. For example, I intended to address whether patterns are similar or different for highly acculturated adolescents whose families have been in the U.S. for multiple generations versus less acculturated adolescents whose families have recently immigrated to the U.S., and for those between. However, I have encountered numerous methodological challenges in this work that have necessitated further attention, such as experiencing a low response rate during recruitment that led to widening my target participants from Mexico-origin adolescents and their parents to more broadly defined Latino adolescents and their parents. As such, the purpose of this white paper is twofold: a) to present the theoretical and empirical underpinnings of academic identity as a catalyst for postsecondary achievement among Latino students and b) to describe methodological challenges and lessons learned from a study of academic identity among Latino adolescents in Texas.

## Theoretical Foundations

### Positive Youth Development Perspective

In studying how Latino youth's postsecondary achievement can be facilitated, it is imperative that we continue to move our attention to the developmental assets of these youth, moving away from deficit models that have been the focus in the field over several decades. In particular, the Positive Youth Development (PYD) perspective is a strength-based model that seeks to identify the interrelated individual and contextual factors that optimize developmental progress, or that promote thriving (e.g., Lerner et al., 2005; Lerner et al., 2013; Lerner & Overton, 2008). Through this lens, we are able to capture key resources (e.g., individual, familial, school) that are available, or can be made available, to Latino youth at various points

during adolescence (e.g., middle school, high school, college) and that result in higher levels of academic achievement (e.g., postsecondary achievement).

**Erikson's Theory of Identity Development**

Adolescence, in particular, is a time when youth make important advances in their social and cognitive capacities (Keating, 2004; Smetana, 2011), processes important for the emergence of identity development. Erikson (1968) posited identity as a process that indeed begins to occur as a formative task during the adolescent period, in which adolescents experience "identity crises" as they address the question, "Who am I?" A successful navigation of this experience prepares adolescents for healthy developmental outcomes. At the crux of this process is the convergence of individuals' internal (e.g., individual cognition) and external worlds (e.g., educational social context) that make sense of the self in the social world (Hammack, 2015), such as that of the student in the academic setting.

**Bioecological Model**

Furthermore, it is important to understand that adolescents' identities (e.g., academic identities) are socialized and supported in a social world consisting of different contexts or systems (Bronfenbrenner & Morris, 2006), including the home (i.e., parents) and school (i.e., teachers and peers). The bioecological model posits that it is the interactions between individuals and their various ecological systems (i.e., microsystem, mesosystem, exosystem, macrosystem, and chronosystem) that play a key role in their development. The microsystem is the most immediate system and is comprised of settings that adolescents have direct contact with, such as families, friendships, and schools. The mesosystem is the next most immediate system that looks beyond a single system to the interactions among multiple microsystems (e.g., interactions between families, friendships, and schools). The microsystem and mesosystem are embedded

within three larger systems: the exosystem (i.e., settings that the adolescent does not have direct contact with, such as the workplace of parents), the macrosystem (i.e., socio-cultural contexts, such as ethnic cultural beliefs and attitudes), and the chronosystem (i.e., all of the other systems and interactions among those systems that change as adolescents age); these larger systems (e.g., macro- and chronosystems) influence all of the nested subsystems (e.g., micro- and meso-systems). Thus, the multiple contexts of adolescents' social world, including the home, school, ethnic culture, and developmental age, contribute to the academic identity development of Latino adolescents.

## Empirical Foundation

I draw on the PYD perspective, the theory of identity development, and the bioecological model, recognizing that positive youth development (e.g., postsecondary achievement) can be extended to at-risk youth by identifying and understanding how well adjusted youth traverse the different contexts that they experience. Latinos are underrepresented at various points of the educational pathways that lead to an attainment of a postsecondary education (e.g., high school graduation; Cooper, 2011). Of particular interest is the representation of Latino youths in courses (e.g., mathematics and science) that provide a foundational knowledge for access to and persistence in postsecondary education (Grossman & Porche, 2013; Syed et al., 2011) and postsecondary degree attainment (Tyson et al., 2007). Orientations toward math and science or, more specifically, those that lead into science, technology, engineering, and mathematics (STEM) education, expand the educational and career options available to students (Wang & Degol, 2013). For example, transitioning from middle school to high school ready for Algebra I better positions students to graduate with advanced high school math courses that make them eligible to enroll in college, further allowing them to be prepared for college coursework and, in

turn, future careers. Thus, the level of math completed by the end of high school is as important for college entrance and preparation as much as for keeping STEM career options open. Yet, the number of STEM degrees awarded to Latinos has remained low; for instance, physical science B.A. or Ph.D. awards to Latinos increased only slightly from 4% in 1985 to 6% in 2005 (National Science Board, 2008). To understand the processes that could be the turning point away from these dismal trends necessitates an examination about how Latino adolescents identify to their academic selves (i.e., academic identity) at the earliest pivotal time, adolescence or middle school.

Furthermore, recognizing that adolescents' academic identities are socialized and supported in different contexts, it is important to also consider the characteristics of the contexts of Latino youth (Bronfenbrenner, 1989). Depending on socialization and support efforts (Chen, 2005), youth may be more readily available to explore various academic domains and further commit to them (Erikson, 1968). Such efforts might include emotional (e.g., encouragement), instrumental (e.g., helping with homework, providing educational supplies), and cognitive (e.g., conveying a value of education) support. Furthermore, these efforts might be specific to the cultural beliefs and values of adolescents' ethnic group. For instance, there is work suggesting that having stronger identifications to their ethnic origins enhances their educational experiences (e.g., Fuligni et al., 2005); or, support efforts might be dependent on adolescents' gender. In the STEM pipeline, for example, females are also greatly underrepresented (National Science Board, 2008), which might be due to Latino fathers and mothers who are known to socialize and support their adolescent girls and boys differently across support dimensions (Parke & Buriel, 2006). As such, it is also important to consider support systems (e.g., families, peers, teachers), the cultural processes under which those support systems are embedded, and adolescent gender when

addressing the academic identity of Latino youth.

Finally, another important factor to study is whether or not adolescents feels a sense of belonging at school (Vaquera, 2009), which might not only derive from sources of support but also from adolescents' academic identity. In fact, school belonging is closely related to academic identity and has been examined as a dimension of academic identity (e.g., Matthews, 2013). However, it is important to disaggregate identity to better examine specificity in achievement models.

## Methodological Challenges and Lessons Learned

The *ALCANCE* (Spanish for REACH) Project was designed to examine academic identity and its role in predicting postsecondary achievement. The project was designed as a mixed-method longitudinal study in which to quantitatively and qualitatively address the following two goals: (a) learn more about how Latino adolescents (or middle school students) in Central Texas come to identify with academics and (b) examine relations between sources of support and socialization, academic identity, school belonging, course enrollment, academic achievement, and gender. As such, the project encompasses two separate studies, a quantitative longitudinal study involving telephone interviews and a qualitative study using focus groups. Below, I describe further details on the proposed methods for the study. Under each of the proposed methods, I address challenges I have encountered in implementing those methods and lessons learned.

### A Longitudinal Study Predicting Academic Achievement

**Recruitment and data collection.** The planned study involved collecting multi-reporter longitudinal data (i.e., in spring of 2015, spring of 2016, and spring 2017) from 150 Mexico-origin 8th grade students (50% female), their mothers, fathers, and teachers from two targeted

school districts in Central Texas, one in an urban city (A) and the other in a suburban city (B). Eligible participants were to meet the following criteria: (a) be an 8th grader, (b) have biological mothers and biological or long-term adoptive fathers living in the home, and (c) have mothers who were of Mexican origin. Eligible adolescents would be stratified by school and gender. Furthermore, adolescents were to be randomly selected within these stratification indicators to maximize variability in the study processes being examined.

To recruit participants, the plan was to have the *ALCANCE* team, i.e., Principal Investigator (PI) and graduate students, visit the participating schools to meet with 8th grade homeroom classrooms, where the team would hand out packets to students. The packet would include a letter to families explaining the study, a form for the families to fill out regarding eligibility criteria, consent forms for mothers and fathers, assent forms for 8th graders, and response sheets to be used during telephone interviews. All forms included in the packet would be in English and Spanish. Instructions included in the packet would ask that families fill out all forms and return them to their schools (except for the response sheets). Texas State University merchandise (lanyards, sunglasses, stress stars, pens, and pencils) that were donated by various Texas State University offices (e.g., Marketing Office) would be used as incentives for students who returned their completed packet to their schools. Members of the project team, including the PI, graduate students, and undergraduate students would contact interested families and check their eligibility for the study. Team members would then schedule telephone interviews with eligible adolescents, their mothers, and fathers. During telephone interviews, adolescents would be asked to provide math and science teacher names. Teachers would be asked to fill out short surveys for each participating student. School principals would also be asked to complete a short questionnaire on the cultural context of the schools.

The plan was for adolescents, mothers, and fathers to complete interviewer-administered telephone surveys and teachers would complete self-administered surveys, one per year across the adolescents' 8th, 9th, and 10th grades. Each participating family would receive $25 for their participation in the adolescents' 8th grade year. In order to maintain an attrition rate of 20% in longitudinal studies with Mexican-origin families, adolescent and family payments were to increase each year by $5 (e.g., Alfaro et al., 2009). Math and/or Science teachers would be compensated $5 per student each year. School record data would also be collected each year and participating schools would receive $250 for permitting the collection of record data each year. The interviewing teams would include graduate and undergraduate students, consisting of bilingual and English-speaking interviewers, and me. I would provide extensive training to all interviewers through frequent training sessions in the fall. The training would cover theoretical perspectives, existing empirical literature, and interviewing techniques.

***Methodological challenges.*** I was presented with several challenges. First, the project team was not able to begin data collection in early spring of 2015 as planned due to several delays, including in finding research assistants, with approvals of the study from the Institutional Review Board (IRB) and from the school districts, with translations and back translations, and with a low participant response rate during recruitment. Second, School District A approved recruitment at their high school campuses but not at their middle school campuses. School District B approved data collection in middle class campuses, but only three principals agreed to have the project team recruit at their campuses. Third, I had a low response rate when recruiting Mexico-origin adolescents and their families and adolescents living with both mothers and fathers. Furthermore, due to the low response rate, there was no stratification by school and gender or random selection. Fourth, School District B did not allow the project team to recruit by

visiting classrooms. Instead, the district allowed that packets be delivered to the administrative offices who would then pass on to the homeroom teachers. The homeroom teachers would be instructed to pass out the packets to all students who registered as Hispanic. Of the 387 possible Hispanic students at the three schools, 27 returned packets back to the schools and completed interviews.

***Lessons learned.*** I would like to begin this section by addressing the most important of lessons learned on this project: No matter how well a study is designed, it is important to acknowledge that unanticipated problems will emerge at every stage of the project. Mine began in the planning stages when I was hiring graduate students and finding volunteer undergraduate research assistants. The students in my program are either undergraduate students or master's students; we do not have doctoral students. Our current master's program is designed to attract students interested in working in applied settings (e.g., hospitals as Child Life Specialists). Our master's program takes students about two years to graduate; and, in their last one to two semesters, they are likely at a practicum or internship site. This is important in planning whom to hire in a longitudinal study. Training graduate students takes time. Making sure graduate students understand the study protocol and are able to supervise others (e.g., undergraduate research assistants) also takes time. Thus, as an investigator I hope to hire students whose time I can maximize on the project while they are in their degree program. Although I took all possible precautions in my search for graduate students, the first one I hired and trained (as my lead supervisor, nonetheless) left soon after training for a rare job opportunity she could not pass up in the Child Life field, her area of study and career goal. The next two graduate students I hired have been on the project for one year and intend to graduate this spring. A challenge I am facing now is that I do not currently have a student in a later cohort that could help transition the project

into a new team, as my graduate students are in the same cohort. I should mention that I am also using a third graduate student part-time from her teaching assistant duties on the project; she is also graduating this spring. In planning for graduate research assistants, it is important to understand the degree program requirements, take necessary precautions to maximize student time on the research project, and consider taking students from different cohorts in a longitudinal study.

In hiring graduate students for a study being conducted in English and Spanish, another factor to consider is that it might be difficult to find bilingual graduate students. A very limited number of bilingual graduate students have come to our master's program. For instance, the only bilingual student with whom I have had experience in the almost six years I have been in my program is the student that left for the rare job opportunity. It is important to recognize that in such circumstances it may be necessary to reach out to other programs. In the school I work under at my university, we are encouraged to hire students within one of our five programs. I was able to find two bilingual students in a discipline (i.e., Merchandising) not related to my own (i.e., Family and Child Studies). This, of course, presents a different kind of challenge when it is also needed to provide a brief training on the discipline to these students. Thus, it is important to keep in mind the demographic of the students in your program and be open to other avenues that might help in meeting the needs of the project.

Another lesson learned on students is that undergraduate students make for a great resource in a research project. I reached out to the entire undergraduate community at my institution via email to invite them to participate as volunteer research assistants on the project. The students who have come to volunteer on the project relay that they were excited to learn about the research opportunity and that they find a limited number of projects with the kind of

opportunities that the *ALCANCE* project offers on campus (e.g., working with Latino families in the community). In my experience with working with approximately 50 undergraduate volunteers in the first two semesters of the project, however, it is important to explain that the number of volunteers dwindle as the semester progresses. Some volunteers are more reliable than others. Some volunteers may not be a good fit for the project. From this experience, I have also learned that it is in the best interest of the project to overestimate the number of volunteers needed for a project.

A final note on my experiences with my students is that I truly believe having both graduate and undergraduate students on a research project is mutually beneficial in my relationship with each of them, but also in the relationships that undergraduate and graduate students have with each other. My graduate students have been a key asset to the project; I am most grateful for all of their hard work. The undergraduate students provide graduate students with supervision and mentoring experiences as well. If research projects do not have the funds to pay undergraduate students, it is highly recommended to enlist volunteers on a project.

The challenges encountered in the planning stages in hiring students were followed by my application submissions to the university IRB and targeted school districts. Both types of application review processes took longer than I anticipated; school District A was particularly late, having taken one year (from Fall 2014 to Fall 2015) to complete. It is important to be aware that through this process different kinds of issues might arise. For instance, the IRB reviews might take several rounds of revisions that include different feedback by language if your materials are in more than one language. My materials are in English and Spanish and as part of my revisions it was also important to make sure both versions matched. Another issue is that targeted planned sites for recruitment might reject the project altogether or certain aspects of the

project. In my case, reviewers from School District A rejected data collection at middle schools, but approved data collection in high schools, which had not been requested as it was not part of the design of the study. Hence, it is also important to be aware that planned data collection sites might change in some capacity. Overestimating the number of districts needed for a project would be a good strategy.

As for my project, I decided to focus on School District B. However, this decision brought on other needed considerations. With the low response rate from the principal-approved recruitment strategy (i.e., sending packets home with students) at School District B, it was necessary to submit an additional request to the school district; however, it was not to the external research office, where initial requests to work with school districts typically begin. My request was with the open record office where I submitted a request to recruit families who opted to have their contact information available to external investigators. Please note that not all school districts have this option available (e.g., School District A), which is another lesson learned. Each school comes with its own sets of rules and regulations by which they abide when they are considering external research to be conducted at their campuses or via their campuses; nonetheless, it is important to be aware that there might be other options to attempt. As soon as I submitted this request, my team and I began planning for the possibility of recruiting by telephone in order to begin recruitment without any other delays should the request be approved. We revised the recruitment protocol (e.g., wrote up new recruitments scripts in English and Spanish; revised consent and assent forms) and submitted new review requests to the IRB. The new protocol included broadening the target population to Latinos, rather than only targeting Mexico-origin adolescents and their families. Furthermore, we also opened recruitment to include adolescents in single-parent homes and to adolescents without a biological father living

in the home as eligible. The IRB and School District B both approved the revisions. The shortcoming was that these new steps led to not having a randomized sample and instead having a convenience sample. With the new approvals, I decided to apply for summer graduate student funding, which was granted by my school. As such, my team and I were able to recruit and interview an additional 33 families with the new strategy.

In addressing my experiences with School District B, I would be remiss to not mention the relationships investigators must foster with principals and staff at the different campuses. At the beginning of the project, I contacted each of the three principals and one principal took it upon himself to facilitate discussions about how to go about with our recruitment strategy at the three campuses. His participation in the discussions was instrumental to receiving support from the other two principals. As it turns out, the campus that this principal headed was the campus with the highest level of returned packets. In fact, one of the other campuses had students who returned a third of the total packets and the third campus did not have any returned packets. The campus with the highest number of returned packets was also the most affluent of the three campuses, which is not surprising given that middle-class families, who have parents more likely to have attended college and have had experience with psychological research, compared to low-income families (Roosa, Knight, Umaña-Taylor, 2012).

My next attempt at forming partnerships with schools will start by beginning relationships earlier with principals so that they can each have a better understanding of the goals of the project and so that we can identify ways to have the project give back to the individual schools. It will also involve identifying ways to meet families in person at open house nights or other school events where we can have a booth, given that the district and principals emphasized that taking time away from the school day is highly unlikely. Although it might be inevitable to

send materials home with students, it might not be optimal with 8th graders, unlike recommended procedures to send packets home with students by researchers who were recruiting elementary school children (5th graders; Roosa et al., 2012). The principal who had no students return packets reached out to me to let me know that he had spoken to several of his Hispanic-origin parents regarding the packets and the parents had no knowledge of ever receiving packets at home. Thus, a face-to-face introduction at a school event might make parents more knowledgeable about a study and more apt to have their families participate. These types of face-to-face meetings might be more likely when principals and other school personnel are also engaged in the project.

**Tracking families.** Once a student is recruited into a longitudinal study, it is important to find ways to address attrition rates. The plan for the *ALCANCE* Project was for families to be contacted twice between annual data collection to track families. Each summer, families would receive $5 for returning postcards updating contact information. Each fall, project staff was to call families to update their contact information. Several methods were to be used to search for families who could not be reached (e.g., school/district records, contact family and friends provided by participants).

***Methodological challenges.*** Given the delays with commencing data collection, our first attempt at tracking will be this spring. In planning for this process, I have learned that the university requires monetary incentives to be sent using certified mail, which is costlier. Thus, we changed our protocol.

***Lessons learned.*** Over the winter break, we sent our families holiday cards. Next, this January, we are sending calendars given we have entered a new year. Finally, we will be sending a $5 gift card as our token of appreciation for having families confirm their contact information

as well as sending back signed letters (that we send to them to sign) with the information of relatives of friends who they give permission for us to contact should we have a difficult time locating them.

**Measures.** For the planned study, we would prepare to have adolescent and parent surveys and instructions in English and Spanish. All surveys would include closed-ended questions with Likert-type response scales and would include the same items each year of data collection. Everything would be translated into Spanish and back translated to promote accuracy and equivalence of meaning by two bilingual Spanish speakers at the beginning of this study.

Adolescents and parents were to report on their demographic/background information (e.g., gender, language use, nativity status, mother/father level of education, family income), academic identity (e.g., Chen & Yao, 2010; Matthews, 2013), cultural values (Knight et al., 2010), and ethnic identity (e.g.; Sellers, Rowley, Chavous, Shelton, & Smith, 1997; Yip, 2014); parents and teachers were to report on the academic support they offer adolescents, and adolescents were to report on parent, teacher, and peer academic support (e.g., Chen, 2005; Sands & Plunkett, 2005); adolescents would report on their school belonging (e.g., Vaquera, 2009) and on their academic achievement (e.g., course enrollment in honors and general courses, course grades, pre-AP/AP exam plans, postsecondary expectations and aspirations); teachers would also report on adolescents' course enrollment, grades, and engagement. All adolescent measures used have been found reliable (Cronbach's alphas above .71) and valid for use with adolescent samples and in most cases with those of Latino origin. See Table 1 for the current descriptive statistics for the study variables.

Table 1.

*Descriptive Statistics for Study Variables (*N = *120).*

| Variables | *M* | *SD* | % | Median |
|---|---|---|---|---|
| 1. Parents' Education Level | 6.08 | 4.86 | | |
| 2. Support | 1.87 | .99 | | |
| 3. Academic Identity-Science | 3.19 | 1.30 | | |
| 4. Academic Identity-Math | 3.41 | 1.24 | | |
| 5. School Belonging | 3.45 | .73 | | |
| 6. Ethnic Identity | 4.07 | 1.04 | | |
| 7. Familism | 4.47 | .74 | | |
| 8. Academic Achievement | 2.12 | 1.38 | | |
| 9. Female | | | 50.00 | |
| 10. Self-Identified Hispanic | | | 43.80 | |
| 11. Self-Identified Latino/a | | | 10.74 | |
| 12. Self-Identified Mexican/Mexican American | | | 40.50 | |
| 13. Self-Identified Chicano | | | 00.83 | |
| 14. Self-Identified Guatemalan | | | 00.83 | |
| 15. Self-Identified African American | | | 01.65 | |
| 16. Self-Identified White | | | 02.48 | |
| 17. Mom's Reported Monthly Income | | | | $4,500.00 |
| 18. Dad's Reported Monthly Income | | | | $3,500.00 |

Notes: 1. Scale from 1-9 with 1=middle school and 9= Doctorate/Advanced Degree; the average was "Some College"; 2. Scale from 1-5, lower values = higher levels of support; 3/4. Scales from 1-5, higher values=higher levels of academic identity; 5. Scale from 1-4, higher values=higher levels of school belonging; 6. Scale from 1-5, higher values=higher levels of ethnic identity; 7. Scale from 1-5, higher values = higher levels of familism; 8. Scale from 1-8 with 1=Mostly A's and 8=Mostly below D's; 9. Began asking participants to self-identify gender after the study had begun (N=110).

***Methodological challenges.*** The biggest challenge I encountered in preparing the measures to be included in the study was in the translation and back translation process. This was a time-consuming task that might be due to having a graduate student who was of Honduran origin and a translation consultant of Mexican origin.

***Lessons learned.*** Hiring a translation consultant was helpful. She was able to consult on best practices for this process, assist with translations, and finalize materials (measures and consent/assent forms). It will be important to revise future translation/back translation activities to include staff of similar Spanish language background. In particular, any staff working on

translations should be of the background of the targeted Latino ethnic population. Given I am targeting a majority Mexican origin sample, translating staff should have a Mexican Spanish background.

**Plan of analysis.** The analysis plan includes using quantitative procedures (e.g., aggregate, means, frequencies, correlations) that include estimating path models using Mplus (Muthén & Muthén, 2007). Full information maximum likelihood will be used to include cases with missing data (Schafer & Graham, 2002). Acceptable model fit will be determined by a chi-square/degrees of freedom ratio below 3, values above .90 on the Comparative Fit Index (CFI), and values below .08 for the Root Mean Square Error of Approximation (Kline, 2005).

***Methodological challenges.*** To test the analytic model, I hired a statistical consultant. After my first meeting with her, which was after the project had begun, she advised that in order for me to have sufficient power to test my conceptual model that I should aim for a minimum sample size of 300.

***Lessons learned.*** An important lesson learned is that I should have found ways to consult with a statistician before the beginning of the project. As a result of the new information regarding my sample size, I have revised my plan to move budgeted funds in order to be able to afford increasing the size of my sample. For instance, I am no longer collecting data from teachers. In my budget, I also allocated funds for travel. I am now planning to use the majority of those funds to use as incentives for families. As of last semester (fall 2015), my team and I have collected data on 120 families. We will continue collecting data for this cohort of families through the end of spring 2016.

**Academic Identity and Socialization Focus Groups**

**Recruitment and data collection**. For the focus group sample, the plan was to invite a subsample of families (and teachers) who were to be randomly selected to participate in focus group interviews. All participants would then complete additional consent/assent forms for this portion of the study. The plan included conducting focus groups in early spring 2015. I planned to conduct focus groups to gather information on how mothers, fathers, and adolescents identify with the academic domains of mathematics and science as well as on the different contexts that serve as sources of academic support and socialization, namely, family and schools (i.e., teachers and peers). The plan was to collect focus group data from 12 groups: four groups with Mexican-origin adolescents partitioned by gender and enrollment in advanced math and science courses (two of these groups will include English language learners), four groups with adolescents' parents, and four groups with adolescents' teachers. Each group would include six to eight people to promote discussion while maintaining intimacy (Krueger, 1994). Participants would be given $25 for their participation in the 90-minute focus groups.

As a bilingual researcher, I would conduct the focus groups along with a bilingual graduate student to facilitate discussion in English and Spanish (Umaña-Taylor & Bámaca, 2004). I would train the graduate student, covering theoretical perspectives, existing empirical literature, in how to moderate focus groups and analyze qualitative data. The focus groups would be semi-structured interviews (i.e., guided conversation) to promote consistency across groups. The audio recordings would be transcribed in the original language. When necessary, the transcription would be translated from Spanish to English. All transcriptions and translations would be checked by a second person for accuracy.

***Methodological challenges.*** In terms of the challenges the project faced with regard to the recruitment and data collection for the focus groups, I begin by addressing that, as described above, teachers would not be recruited to participate in the study in order to address the sample size for which I am now aiming. Further, it was also a challenge to target specific participants (e.g., English language learners, students in advanced math and science classes) and to obtain as many focus groups and participants in each focus group as we planned. During the fall of 2015, one semester after focus groups were originally scheduled to begin, the team called all of the 60 families who had completed interviews during the spring and summer of 2015, in random order. Participants who agreed to attend the focus groups included 25 adolescents and 32 parents. Reminder postcards and emails were sent to those that agreed to participate before the scheduled focus group times. Of those who agreed to attend, 13 adolescents and 17 parents showed.

***Lessons learned.*** In starting the qualitative project, I assembled an additional team focusing on the focus groups. This started with a collaboration with a new faculty member in my program. This collaboration has been especially instrumental for the planning and execution of the focus groups, as she has had extensive training in qualitative methods. As part of this collaboration, she has led qualitative meetings with the new team (which also includes two of my graduate students) and she helped facilitate one of the focus groups. In return for her work on this project, I have given her access to my focus group data and we have plans to co-write qualitative publications. Here, I offer a recommendation to other researchers who do not feel especially strong in a specific method, to reach out to colleagues in their respective fields and offer ways for their involvement to be mutually beneficial.

With the additional faculty member leading the collection of focus group data, we collected data with two adolescent groups (in English and Spanish) and two parent groups (in

English and Spanish) during the fall 2015 semester and we plan to collect data on an additional four (adolescent and parent) focus groups during the spring 2016 semester. In the focus group data, we collected in the fall, we recruited approximately 15 members per group; however, only about 5-10, per group, attended. In this semester's recruitment plan, we will aim to invite a higher number of participants.

**Plan of Analysis.** For the qualitative analysis, a graduate student and I would separately code each transcript in NVivo (Richards, 2006), guided by grounded theory. We will use open coding to identify concepts and utilize axial coding to determine the most salient codes.

***Methodological challenges.*** The team and I have not started analyzing the focus group data and thus have not encountered any challenges. We are currently finalizing the transcription procedures. The only change to these procedures is that we will not be using NVivo.

## Conclusion

I designed the *ALCANCE* Project as a means to examine academic identity and its role in predicting postsecondary achievement. In this white paper, I wanted to present the background and significance for the study but also to use my study and my experiences with implementing its design as an example that would illustrate that the execution of study protocol is not always the smooth process it is implied to be in publication reports. In research reports, we do not typically read about the methodological challenges in method sections. As described here, challenges arise at every stage. From my experiences executing this project, I have learned important lessons through these challenges. For instance, I have learned that careful recruitment and selection of project staff is critical to how well the study is implemented. Also important are the procedures researchers need to follow in requesting to work with schools (and perhaps targeting more schools than one needs) and the forming of partnerships with school personnel. I have learned

that the recruitment of Latino participants can largely affect the progress of a study; in my particular case, it was difficult to obtain a 100% Mexican-origin sample with the eligibility requirements with which we began the project. Questions that are necessary to answer, in this regard, have to do with how it is we attract participants that represent the true variability of an ethnic group (e.g., participants at all different points on the acculturation or enculturation continuums) in order to get at the richness of the different types of assets available to Mexico-origin adolescents. I anticipate other challenges in the future of the project as well. For example, I have concerns for attrition rates. I currently find myself in a stage of trying to anticipate what might arise in order to plan ahead. All in all, I offer my experiences and different strategies I have turned to in my work on Latino adolescents' academic identity and academic achievement.

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