Future research on Hispanic students: What have we yet to learn? *and* What new and diverse perspectives are needed to examine Latino success in higher education?

White paper prepared for the Hispanic Association of Colleges and Universities
July 2012

Amaury Nora
Professor and Associate Dean for Research
College of Education and Human Development
The University of Texas at San Antonio
San Antonio, TX 78249
210-458-4112
Amaury.nora@utsa.edu

Gloria Crisp
Assistant Professor
Educational Leadership and Policy Studies
The University of Texas at San Antonio
San Antonio, TX 78249
210-458-7191
Gloria.crisp@utsa.edu

Future research on Hispanic students: What have we yet to learn? *and* **What new and diverse perspectives are needed to examine Latino success in higher education?**

Amaury Nora and Gloria Crisp

Hispanics continue to play an increasing role in shaping American society, as they are currently the largest and youngest minority group and whose birth rate accounts for a quarter of all children born in the United States (Pew Hispanic Center, 2009). This increase in the total number of Hispanics will result in a corresponding increase in college enrollments. Between 2007 and 2018, Hispanic enrollment in degree-granting institutions is expected to increase by 38 percent (National Center for Education Statistics, 2009). Unfortunately, Hispanics currently lag behind other groups in terms of bachelor's degree attainment (Fry, 2004; Llagas & Snyder, 2003) with no significant changes in higher education that could alter graduation rates for this minority group. As such, U.S. President Obama's administrative goal to increase postsecondary attainment levels to exceed all other countries in the next decade will be impossible to reach without finding ways to increase and support the academic success of Hispanic students (Nunez & Crisp, 2011).

There is a profusion of research demonstrating that college is not experienced by all students in the same way and does not have the same impact on all students (Pascarella & Terenzini, 2005). For instance, we have evidence to suggest that social experiences may play a more direct role in the persistence decisions of White students when compared to Hispanic students (e.g., Nora & Cabrera, 1996). Concomitantly, research findings indicate that although institutional commitment may be the number one factor that influences the persistence decisions of White students, commitment to a particular institution plays a much lesser role for Hispanic students (e.g., Nora & Cabrera, 1993). Fittingly, there is a need to better understand the unique

characteristics of diverse populations (including Hispanic students) and the impact that these characteristics have on success (Torres, 2006).

In response, a line of research has been developed specific to identifying the characteristics, experiences, and behaviors associated with Hispanic success in college, including academic performance, educational goal commitments and aspirations, perceived mentorship, classroom validation, support and encouragement, engagement with campus activities/programs, financial concerns, family responsibilities, and campus climate (see review by Nora & Crisp, 2009). However, even with the inclusion of work by Hurtado and associates (1996, 1997, 2008), Olivas (1995, 2005), Nora (2001, 2004) and associates (1990, 1996), Gloria and Castellanos (2003, 2006), Cabrera and La Nasa (2000), Rendon (1994), Gonzalez, Figueroa, Marin, Moreno and Navia (2002), Padilla, Trevino, Gonzalez, Trevino (1997), Solorzano (1995), and others, there are specific areas in the literature that have not been investigated fully, theoretically, and/or empirically (Hurtado & Ponjuan, 2005; Torres, 2003). For example, new and theoretically-sound notions of Hispanic student success have failed to advance the study of Hispanic undergraduate students (Rendon, Jalomo, & Nora, 2001).

In turn, this effort extends a recent review by Nora and Crisp (2009) by offering a line of investigation that identifies research most needed to advance our understanding of how Hispanic students experience college, with a focus toward identifying factors that support student success. First we highlight several specific methodological, conceptual, and theoretical issues limiting the existing knowledge base on Hispanic students. Within the identification of those issues, we call for new perspectives that we hope researchers will consider in studying the success of Hispanic college students. We then discuss what we believe to be areas of research that deserve the

immediate attention of higher education scholars, incorporating recommendations from scholars engaged in work on Hispanic student success.

Methodological, Conceptual, and Theoretical Issues

An abundance of descriptive work has been conducted over the past 25 years with the intention of highlighting the disproportionate numbers of Hispanic students not graduating from high school, not enrolling in colleges and universities, and/or not persisting to degree completion (Crissey, 2009; National Center for Education Statistics, 2003b). At the same time, theoretical and conceptual work has been developed in response to prevailing cultural deficit notions, refuting myths and stereotypes of Hispanic students as lacking in ambition or not valuing higher education (Cuadraz, 2005). While there is a need to provide illustrative profiles of Hispanic students and value in work that dispels inaccurate stereotypes, we believe that there is urgency for researchers to begin work toward producing methodologically and theoretically-sound studies (both qualitative and qualitative). More specifically, we feel there is a need for experiential work that is able to produce findings that can assist faculty, administrators, and policy makers in identifying specific strategies/programs that have been empirically shown to directly or indirectly influence the success of Hispanic students.

Current research points to a relationship between various characteristics, experiences, and behaviors during college and student success for Hispanic students. Based strictly on an experimental design, little research has been able to measure a "causal effect." As random assignment is very difficult to achieve in educational settings, an alternative is to select a well-matched comparison groups in the design of research studies/evaluations, relying on statistical procedures such as propensity score matching to establish causality (Miller, 2005). Additionally, we encourage the development and testing of theoretically-sound statistical models that are able

to identify the indirect and mediating relationship between participation in formal college programs/activities and Hispanic student outcomes (Hurtado & Ponjuan, 2005). We also support Zurita's (2004) call for researchers to allow Hispanic students to tell about their own college experiences, as rigorous qualitative work is needed that provides a rich description of students' experiences and perceptions specific to the college environment.

Equally important is the need for longitudinal databases that have been merged with unit records from state databases with institutional records and that successfully track students from kindergarten through graduate school (e.g., efforts in Texas, Ohio, Wisconsin). Although researchers have access to nationally representative datasets that combine survey data with students' transcripts (e.g., NELS, BPS, ELS), the goal of those data collections is concentrated toward expectations of accountability and outcomes rather than non-cognitive measures. As such, there is a need to incorporate non-cognitive (e.g., psychological, social, cultural) measures in databases rather than simply focusing on cognitive success outcomes. While there is no denying the importance of measuring outcomes such as grades, retention rates, and graduation counts, these cognition-related outcomes do not occur in isolation of student attitudes, their values and perceptions, and their academic and social behavior on- and off-campus. For example, it is unrealistic to think that the interactions among and between students and faculty do not have significant impacts on Hispanic student outcomes. If studies are to focus more on longitudinal models rather than on cross-sectional views to help explain student behavior and outcomes, behavioral and perceptual data need to be measured and included in large national, longitudinal data-gathering efforts. Moreover, as suggested most recently by Chen and DesJardins (2010), longitudinal datasets would be improved by providing full information for

observable and measurable variables that may change over time (e.g., family income, GPA, parental support).

(Re)Conceptualizing Student Success. We believe that research on Hispanic students would also be enhanced by a broadening of current definitions of "student success" that are currently focused on cognitive outcomes. These success outcomes have shortcomings in two major areas: (1) their ability to represent appropriate measures of constructs under investigation, and (2) their ability to capture the same conceptual meaning among different racial/cultural student populations. Rather than accepting current definitions of student success, why not expand current frameworks to include psychological and behavioral outcomes. For instance, student satisfaction, while definitely a measure of overall gratification, it can also be viewed as the culmination of the academic and social experiences that students are subjected to while attending college, thereby representing the resultant outcome of the interactions among students, faculty, peers, and their environments.

Additionally, success should not solely represent an individual benefit. Giving back to society and engaging in the betterment of that society can also be considered as a gauge of student success as well as that of an institution. The desire to be an active participant in the larger community has recently entered into the discussion of what constitutes student success. While there are those that would consider such an outcome as outside the responsibility of higher education, others fully understand the need for a much wider conceptualization of student success (citations).

Infusing Cultural Sensitivity in Theoretical Frameworks. Work on Hispanic students has begun to consider criterion measures that better reflect Hispanic cultures and/or the experiences of diverse groups (Hurtado & Carter, 1997; Quintana, Vogel, & Ybara, 1991). Theoretically,

though, research on Latino students can be enhanced by taking a more ecological approach that allows for indicators of support from other persons in the student's life, such as family, faculty, and peers (Dennis, Phinney, & Chuateco, 2005) and by work that focuses on the access and conversion of various forms of social and cultural capital (Nunez, 2009). Furthermore, work specific to Hispanic students would be enhanced by the development of theoretical models that account for the local context that may influence the knowledge and/or support that students need to succeed at a particular institution (Padilla, Trevino, Gonzalez, & Trevino, 1997).

Needless to say, we continue to recommend the *development* and *use* of race-sensitive conceptual frameworks to help guide the data collection, analysis, and/or interpretation of future investigations. Up to now, research on minority students has depended primarily on the use of existing databases, making it necessary to rely on ethnocentric definitions and conceptualizations of variables. Rendon et al. (2005), Tierney (1993), and others have criticized the use of current theoretical models to study racial/ethnic student groups. Arguments on this issue center on the inappropriateness of variables to capture the complex differences, culturally and ethnically, of Hispanic, African American, and Asian American students. However, these researchers focus primarily on the inclusion (or exclusion) of constructs in current theoretical models. The criticism should direct its focus on the way in which these factors culturally and differentially capture student experiences and perceptions. A good example is the incorporation of academic and social integration in current frameworks on student persistence. The issue is not whether those constructs are functional for all groups, but rather how the measurement of those constructs can capture the cultural and ethnic differences of all groups (e.g., how different groups socially integrate themselves on campus).

One can argue that culturally-sensitive models of student success have not been tested extensively, that current measures of student integration and engagement may not be appropriate for minority students, and that familial and other circumstances are often not incorporated in existing models. While those arguments have validity, the discourse should not focus solely on the applicability of those models to study minority student persistence but on the need to better identify appropriate measures of theoretical constructs that can more fully capture the ethnic and racial nature of variables in persistence models. Current misspecifications of persistence models as they apply to Hispanics are representative more of measurement issues and not conceptual ones. As a result, more elaborate theoretically-driven perspectives that truly capture the experiences of minority students are still needed as well as the re-measurement (quantitatively) of established variables in current models.

Diversifying Perspectives. From both conceptual and methodological points of view, investigative efforts in education and in the fields of psychology, anthropology, and sociology are changing the manner in which we conceptualize different observable facts and the way we select empirical tools to guide our observations and investigations (Hurtado, 1997; Rosaldo, 1989). Hurtado (1997) advocates for a more nonlinear, multidisciplinary and multi-method approach, where one prevailing group is not privileged over other groups, and that is inviting of critique and subsequent analysis. Based on these notions, higher education cannot afford to remain entrenched in traditional and inappropriate theoretical frameworks in future studies of Hispanic students. Newer models informed by a variety of disciplines and points of view, as well as theory refinements to existing frameworks, are needed that consider the central theoretical issues associated with the specific experiences of Hispanic students in higher education.

deliberately, the time has arrived when culturally-relevant theory more identifiable to Hispanic students must consider *psychological*, *social*, *cultural*, and *environmental* perspectives.

Psychological Perspectives. Despite the fact that a limited number of perceptual and behavioral variables have been incorporated into existing databases, most simply scratch the surface or do not adequately capture the in-depth nature of the constructs that they are measuring. Moreover, even though psychological scales and instruments exist and are used in other disciplines, most have not found their way into the higher education literature. Constructs such as coping, efficacy and self-esteem currently do exist, but a good number have not been tested alongside variables presently found in persistence models. Recent calls for more cross-disciplinary studies that focus on the success of Hispanic students emphasize the sentiment that psychological (and other) factors must be accorded a more significant role in theoretical frameworks. Such psychological variables involve coping, spirituality, college efficacy, personal efficacy, stereotype threat, resiliency, depressive symptomatology, self-esteem, and distress, all needed as part of our conceptual frameworks.

Social Perspectives. Just as it is necessary to focus on psychological factors, there is a corresponding call to center current and future frameworks on social constructs. This argument rests on the notion of depth and breadth, not exclusion. While researchers touch on the importance of civic engagement, social support systems, and campus climates, measures (items/scales/variables) that are currently used in the literature do not fully or conceptually capture core constructs such as: (1) mentoring experiences, (2) family and community support systems, (3) faculty and institutional support, (4) cultural sensitivity, (5) student alienation and manipulation, (6) satisfaction with the collegiate experience, (7) on- and off-campus social

involvement and engagement, (8) academic integration and participation, and (9) sense of belonging.

From very early on, persistence studies have emphasized the importance of a social domain in the lives of college students (e.g., Pascarella & Terenzini, 1991; Bean, 1980; Tinto, 1975, 1987, 1993). With the continuing line of research on student retention, more and more social factors were introduced into the frameworks used to investigate student dropout behavior. Criticism of persistence models calls attention to the inapplicability of those models to very culturally different social constructions (Tierney, 1992). Conversely, one can argue that social circumstances and structures should not be totally dismissed from theoretical models that are tested on traditionally underrepresented groups. More succinctly, social factors are germane to all students, but the manner in which they are conceptualized and measured must be racially sensitive to the experiences of Hispanic students.

Cultural Perspectives. With the exception of a few studies (e.g., Hurtado & Carter, 1997; Rendon, 1994; Gloria & Castellanos, 2003; Padilla, Trevino, Gonzalez, & Trevino, 1997; Nora, 2004), cultural factors have been dismissed by investigators of student persistence. The marginalization (at best) or the total exclusion (at worst) of cultural considerations may begin to see a reversal with the increase in the number of hate crimes, "theme parties," and educational legacies on college campuses. The impact that these negative forces have exerted on minority students makes it salient for the field to reconsider the inclusion of cultural constructs in its research. Issues of cultural consciousness as they relate to policy and the college environment, cultural efficacy, the encouragement of an academic family, ethnic identity within a higher education setting, the level of acculturation imposed on Hispanic students, class identity, campus climates (i.e., acceptance, tolerance, diversity), and the display of cultural competence by

faculty, administrators, and peers are only the beginning of an introduction to factors necessary to studies of Hispanic success.

Internal and External Environments. The final component of a race sensitive theoretical framework to guide research on Hispanic students in higher education should have as a feature the interaction of the internal as well as the external environments on college campuses and their surrounding communities. The importance of the different aspects of a campus climate cannot be downplayed, but it should not preclude the importance of the environment external to the campus. Prior research has found that environmental pull factors constitute perceived barriers to full academic and social integration on campus for Hispanic students (see review by Nora & Crisp, 2009). These facets of both the academic environment and its surrounding communities include such indicators as financial circumstances imposed on the family when students must borrow money or depend on financial aid to offset college costs or when Latino students must depend on off-campus work. Terenzini and Pascarella (1984) focused on the influence that living on campus would play in retaining college students but no studies have comparatively examined the differences in the lives of students of color living on campus versus commuting to college. Even though the researchers also focused on the importance of student/faculty interactions in the classroom, they did not focus on instruction or pedagogy among different racial/ethnic groups. Additionally, environmental issues related to a student's sense of community, campus support programs, perceived discriminatory behaviors, and policy and politics by the state and the institution have not been considered seriously along with other variables often used in studying the success of Hispanic students.

Recommended Areas for Future Research on Hispanic Students

Studies that investigate the impact of attending different types of institutions. Research is needed that examines the impact of student racial/ethnic diversity on different institutional types (Maestas, Vaquera, & Zehr, 2007). More specifically, work is considered necessary regarding the role of the institutional context and environment on Hispanic student success (Torres, 2003, 2006) including Hispanic Serving Institutions (HSIs) and community colleges. Among college-going Hispanic students, nearly half attend HSIs (Laden, 2004; Santiago, Andrade, & Brown, 2004), while half of those HSIs are community colleges (Benitez & DeAro, 2004). HSIs are defined as colleges and universities that enroll 25 percent or more full-time equivalent Hispanic students, with 50 percent of that group classified as low-income students (U.S. Department of Education, 2005). The impact of attending an HSI on Hispanic students' college experience is still not well understood, as research findings to date have been somewhat conflicting. For instance, studies suggest that attending an HSI is related to feeling supported and at ease in an environment with other Hispanic students and/or faculty (Dayton, Gonzalez-Vasquez, Martinez, & Plum, 2004; Maestas, Vaquera, & Zehr, 2007). Yet, Laird, Bridges, Morelon-Quainoo, Williams, and Holmes (2007) have found that the average Hispanic student attending an HSI shows little difference in individual characteristics and performance from Hispanic students attending other institutional types.

Due in part to limitations in how HSI's are classified by the Carnegie system, there is currently little distinction in the student success literature between different types of HSIs (e.g., two- and four-year institutions) despite important differences in the students served, institutional composition, and a host of other key characteristics. If this line of research is to be fully developed, future studies must be designed to identify and account for differences between and

among different HSI's. We agree with Hurtado and Ponjuan's (2005) call for work that

investigates the degree to which and the ways in which institutions (including HSIs and

emerging HSIs) are responding to shifts from predominantly White cultural norms to one of

inclusivity and responsiveness to Hispanic students. Additionally, qualitative work is needed to

answer "how" questions specific to HSI's (De Los Santos, & De Los Santos, 2003). Conversely,

deductive work is required to further examine the direct and indirect relationships between

student attitudes, behaviors, experiences, and outcomes at HSI's within the context of existing

theoretical models and to examine the extent to which social and academic integration at

different types of HSI's is related to students' sense of belonging (Maestas, Vaquera, & Zehr

(2007).

  Studies that focus on increasing Hispanics in STEM fields. Currently, Hispanic students

are underrepresented in the percentage of students pursuing and attaining degrees in science,

technology, engineering and mathematics (STEM) (Oakes, 1990; Young, 2005). Although many

federal programs are focused on increasing the number of students in STEM fields (U.S.

Government Accountability Office, 2005), little is known about attracting students to and

retaining them in STEM majors (Fenske, Porter, & DuBrock, 2000). What we do know is that

pre-college preparation (Tyson, Lee, Borman, & Hansen, 2007), test scores (Barton, 2003),

academic experiences in math and science prior to high school (Eamon, 2004), and math

achievement (Moreno & Muller, 1999; Simpson, 2001) have been shown to attract students to

STEM majors, while academic aptitude (Astin & Astin, 1992), GPA and mathematics SAT

scores (Bonous-Hammarth, 2000; Sondgeroth & Stough, 1992), and financial aid (Rakow &

Bermudez, 1993) have been found to aid in the retention of students in STEM fields. Because

much is still necessary to learn regarding the participation, enrollment, retention, and graduation

of Hispanics in STEM fields, it is highly recommended that the problem be examined through a problem-to-solution "strand" approach. With so few studies currently available, the first strand of the approach should focus on: (1) the identification of barriers that have not yet been addressed, either because they are not known or simply because not enough attention has been paid to those impediments, (2) the clarification of specific issues that are pertinent to improving the access and success of Hispanic students in STEM, (3) the concentration on descriptive findings and trend analyses of major outcomes associated with STEM majors, and (4) the definition and redefinition of key inputs, outputs, and outcomes that are culturally-specific and sensitive to Hispanic students. The second component of the approach should then utilize findings from phase one to provide: (1) implications for practice, interventions, and policy, (2) the identification of pertinent outcomes and factors that predict those outcomes for program/institution evaluation, and (3) the refinement of programmatic and administrative efforts.

Another much needed approach to research on Hispanic students in STEM fields is one that adheres to a P-20 pathways perspective focused on research examining the preparation of students in elementary, middle, and high schools for majors in fields such as engineering, biochemistry, computer science, technology, and medicine. Specific research questions to be addressed within this approach include: (1) What practices/policies or structural barriers currently exist that prevent or support Hispanic students in becoming academically prepared to major in a STEM field in college? (2) What factors attract Hispanics to and deter Hispanics from entering STEM fields? (3) In what ways do teacher attitudes or stereotypes relate to Hispanic students pursuing STEM degrees? and (4) What specific counseling techniques/practices are most effective in attracting Hispanics to careers in science- or math-related fields?

Studies that measure the impact of specific institutional interventions. Existing research on students tells us that a variety of interventions/programs are related to student success. For example, learning communities, student success courses, supplemental instruction, and service learning have all been shown to be positively related to student retention and grades (e.g., Berson & Younkin, 1998; Derby & Smith, 2004; Hodge, Lewis, Kramer, & Hughes, 2001; Hollis, 2002; Raftery, 2005; Raymond & Napoli, 1998; Stovall, 1999; Wolfe, 1991; Zaritsky & Toce, 2006). However, we know little about specific institutional programs/interventions that might be more or less effective, or effective in different ways for specific student populations, including Hispanic students. Moreover, most data is limited by selection bias, as students typically volunteer to participate in programs/interventions, thereby making it difficult to isolate the programmatic effect from student characteristics that may predispose the student in participating. To recap, there is a need for methodologically sound research that studies the impact of specific institutional interventions and campus activities that contribute to greater satisfaction and success for Hispanic students (Fisher, 2009). As one example of institutional influence, Johnson, Soldner, and Leonard (2007) suggest that work be done to measure the role of the residence hall environment with regard to minority students' sense of belonging.

Studies that advance our understanding of the impact of coping processes. One of the most important aspects of interdisciplinary studies is the informative value that one discipline brings to another. Early persistence literature borrowed from a variety of disciplines, including psychology and examined the relationship between how students deal with stress and stressors and outcomes such as persistence and academic performance (e.g., Chacon, Cohen, & Strover, 1986). To date, though, research on Hispanic students has not capitalized on the focus revealed by earlier studies that students' coping processes have on an array of success outcomes. More

recent studies (e.g., Swail, Cabrera, & Williams, 2005) reveal that Hispanic students, more often than not, attend college on a part-time basis adding to the time it takes to earn a college degree and are less likely to remain continuously enrolled in college when compared to White students. Each of these situations no doubt exerts a certain degree of mental stress on Latino students as they bring with them barriers to the completion of an undergraduate degree. Nora and Cabrera (1996) suggest that a similar set of circumstances, such as a mediocre academic performance, is perceived differently by minorities, ultimately leading Hispanics and African American students to doubt their sense of belonging at an educational institution. In much the same way, attending college part-time (or "on" and "off") may lead Latino students to despair the prolonged length of time to graduation, consequently affecting their academic performance and, ultimately, their decisions to remain enrolled in college.

It is suggested that future work on Latino students qualitatively and quantitatively explore how students' abilities to cope with stressors or obstacles during college, such as criticism from faculty or family obligations, are related to various success outcomes. More specifically, we suggest that a deeper and more complex view of Hispanic students' coping processes be examined, encompassing such areas as critical consciousness, emotional coping, and instrumental coping (Gloria & Castellanos, 2003), as these factors are thought to more fully represent the psychological and sociological nuances that underlie a student's coping behavior. This line of research may also include work that more thoroughly examines the relationship between Hispanic students' academic performance, study skills, and learning as influenced by criticism from faculty (Cole, 2008) and/or how Hispanic students cognitively and affectively process negative encounters and/or perceptions on campus (Hernandez, 2000; Museus, Nichols, & Lambert, 2008). Moreover, researchers need to better understand the relationship between

Hispanic students' perceptions of obstacles and challenges and those individuals in the lives of students who provide the challenges (e.g., staff, faculty, parents) (Lopez, 1995).

Studies that advance our understanding of the role of various forms/sources of support. Research specific to Hispanic students suggests that educational support from various sources and in differing forms positively contributes to the academic adjustment of Hispanic students. Support from family through verbal, emotional, psychological, or financial means, as well as positive interactions and mentoring experiences with faculty have been found to influence Hispanic student retention (see review by Nora & Crisp, 2009). Still, fellow scholars conducting research on Hispanic students continue to call for additional work to guide institutional policies and practices specific to counseling, faculty advising, and mentoring programs. We agree with requests from the field for work investigating the role of peer and social support on campus (Cole & Espinoza, 2008; Hurtado & Carter, 1997). For instance, it has been suggested that research further explore the types of social support that contribute to Hispanic students' college adjustment (Solberg & Villareal, 1997) and whether certain types of social support are able to moderate the relationship between stress and adjustment (Solberg, Valdez, & Villareal, 1994). In addition, Toews and Yazedjian (2007) more recently suggested that research examining the relationship between peer support and outcomes should also consider diversity in terms of generational support and ethnic sub-group.

Similarly, we reaffirm researchers' recommendations for additional work that examines the role of *la familia* on Hispanic student success. Future research must consider both the quality and quantity of parental support regarding college that is provided to Hispanic students and how students respond to various forms of support (Toews, 2007). Likewise, research is needed to better understand the role of family and how familial ties may draw Hispanic students off

campus or away from college (Hernandez, 2002). An example of such work is the examination

of how older siblings in Hispanic families support their younger siblings' decisions to attend and

remain in college (Hurtado-Ortiz & Gauvain, 2007; Zurita, 2004).

Studies that focus on Hispanic students' participation and engagement in the classroom.

An area that has been largely ignored in the Hispanic success literature is the participation and

engagement of students in the classroom. Such a focus in future studies would require an

investigative interest in issues of class content, pedagogy, and cultural perspectives. For years,

Hispanic scholars have touted the many benefits of making classroom discussion and activities

interesting and culturally relevant to students in order to maximize student learning (Arbona &

Nora, 2007b; Banks, 2007; Gay, 2000; Ladson-Billings, 1995a, 1995b). While that body of

literature currently exists, missing among those studies are any that examine the impact of that

instructional approach to outcomes such as persistence in a course, student engagement, and

year-to-year retention of Hispanic undergraduate students.

At the same time, scholars have been calling for the transformation of teaching, learning,

and counseling on higher education campuses. Despite the fact that extensive studies on

pedagogy are abundant in K-12 settings, they are desperately needed in higher education

(Rendon, 1994). Rendon argues that a transformation in teaching should be based on the

literature surrounding the different ways of acquiring knowledge by varying groups.

Unfortunately, alternative approaches to teaching/pedagogy are often taken as a sign that courses

(and curriculum) are watered-down versions of the traditional ways of teaching. It is thought that

the introduction of a culturally relevant perspective within a classroom is often taken as a sign of

political suitability and that any significant benefits attributed to such an approach are inevitably

suspect. As such, we recommend that empirical work be conducted to investigate the relationship

between providing culturally relevant curriculum/perspectives and success outcomes for Hispanic students.

   Studies that advance our understanding of the economic factors impeding Hispanic success. A large quantity of empirical studies has been dedicated to the impact of student finances and financial assistance on access and academic success. Eventually, scholars integrated persistence models with economic factors to address the issue of student dropout behavior (e.g., Cabrera, Nora, & Castaneda, 1993; St. John, Cabrera, Nora, & Asker, 2000). Although these studies have contributed much to our knowledge of financial aid and student finances, there is still a great deal to uncover regarding cultural factors within the role of financial aid and the dropout process (Chen & DesJardins, 2010). For example, the role of debt-burden (i.e., loans vs. grants) as a deterrent for Hispanic students has not been fully examined. Is fear of withdrawal from college with a substantial debt to repay serve as a barrier to access, a stressor to cope with, or a negative influence on family relationships?

   Additionally, an examination of the higher education literature reveals the interest in pre-paid state plans (e.g. Texas, Ohio), federal and state initiatives regarding loans, grants and scholarships for students, state revenues, and the amount of resources dedicated per student by an institution. These econometric studies focus on examining the relationships between different sources of revenue and traditional student outcomes (e.g., academic performance, hours attempted/hours earned, graduation rates, etc.) but ignore the more intangible (or psychological) component associated with financial assistance. As such, we recommend research be conducted to extend the work of Nora (e.g., Cabrera, Nora, & Castaneda, 1993; Nora, 2004; Nora, Cabrera, Hagedorn, & Pascarella, 1996) by examining the link between financial aid and psychological impacts for Hispanic students. Research efforts are needed to better understand how students'

stress, anxiety, depression and/or considerations to withdraw from college are alleviated or enhanced by the want of money or its abundance.

Concluding Remarks

Although scholars have embarked on research that focuses on Latino students on our campuses, much more is needed to further the scholarship of Hispanic students in different areas that have remained unexplored. Moreover, in union with these empirical investigations, researchers must take care to employ different methodological perspectives in testing and validating those frameworks.

Because the areas of interest include such complex issues as the development of Latino students' self-concept, their involvement with significant others and peers, the validation of cultural identities, and the establishment of a sense of belonging on campuses, more current and more apposite statistical techniques and qualitative procedures are required to truly ascertain the underlying processes represented in Latino student behavior. Findings derived from the proposed research agenda will serve to operationalize what and how Hispanic students who may enter higher education with an inappropriate preparation for post secondary success can build the potential to navigate through barriers to graduation. A mixture of newer methodological approaches and inclusive conceptualizations of structures, factors, and themes would advance our understanding of what contributes to important Latino student outcomes such as persistence and student success.

Plausibly, nested models that include faculty and student characteristics could add to our understanding of student experiences. More contemporary statistical techniques such as hierarchical linear modeling (HLM) and multi-level structural equation models that are capable of testing nested models would allow a more encompassing perspective of the focal structural

patterns among multiple measures of predictor variables and outcomes of interest. Nested models underlying student and faculty attitudes, behaviors and perceived support networks are more apt to depict and gauge the interactions taking place between faculty and students.

To better understand Latino processes, experiences and practices, rigorous case studies, narrative-based inquiries and ethnographic studies are a necessity. More in-depth case studies are needed that would require institutional or programmatic histories, document analyses, participant interviews and measures of change over time. The use of narrative-based approaches would allow more thorough investigations of student and faculty experiences both inside the classroom as well as outside on campus. In addition, a smaller form of ethnography that consists of interviews and participatory observations focused specifically on culture may serve to incorporate additional student and faculty information necessary about the cultural interactions between students and faculty. These types of qualitative methodological approaches extend the knowledge-base by illustrating more specific inquiries that better represent concepts or current issues regarding Latino students.

An empirically-based body of literature on Latino students that truly and appropriately captures the complexities associated with their educational lives, experiences, and decision making can only be derived through more culturally connected and astute theoretical frameworks and methodological approaches. If not, we will continue to face prohibitive dropout rates and undesirable graduation rates among Latino students.

References

Arbona, C., & Nora, A. (2007b). The influence of academic and environmental factors on

Hispanic college degree attainment. *The Review of Higher Education, 30*(3), 247-269.

Astin, A. W., & Astin, H. S. (1992). Undergraduate science education: The impact of different

college environments on the educational pipeline in the sciences. Final Report to the

National Science Foundation (Grant Number SPA-8955365). Los Angeles: The higher

Education Research Institute, University of California, Los Angeles.

Banks, J. A. (2007). *Educating citizens in a multicultural society*. 2nd ed. New York, New York:

Teachers College Press.

Barton, P. E. (2003). Hispanics in science and engineering: A matter of assistance and

persistence. Princeton, NJ: Educational Testing Service.

Bean, J.P. (1980). Dropout and turnover: The synthesis and test of a causal model of student

attrition. *Research in Higher Education, 12*, 155-187.

Benitez, M., & DeAro, J. (2004). Realizing student success at Hispanic Serving Institutions. In

B. Vigil Laden (Ed.), *Serving minority populations* (pp. 35–49). San Francisco, CA:

Jossey-Bass.

Berson, J. S., & Younkin, W. F. (1998). *Doing well by doing good: A study of the effects of a*

service-learning experience on student success. Paper presented at the Annual Meeting of

the Association for the Study of Higher Education (23rd, Miami, FL, Nov. 5-8, 1998).

(ERIC Document Reproduction Service No. ED427568)

Bonous-Hammarth, M. (2000). Pathways to success: Affirming opportunities for science,

mathematics, and engineering majors. Journal of Negro Education, 69(1/2), 92–111.

Cabrera, A., & La Nasa, S. (2000). On the path to college: Three critical taks facing America's disadvantaged. *Research in Higher Education, 42*, 119-149.

Cabrera, A. F., Nora, A., & Castaneda, M. B. (1993). College persistence: Structural equation modeling test of an integrated model of student retention. *Journal of Higher Education, 64*(2), 123-137.

Chacon, M.A., Cohen, E., & Strover, S. (1986). Chicanas and Chicanos: Bariers to progress in higher education. In M.A. Olivas (Ed.), *Latino college students*. New York: Teachers College Press, 296-324.

Chen, R., & DesJardins, S. J. (2010). Investigating the impact of financial aid on student dropout risks racial and ethnic differences. *The Journal of Higher Education, 81*(2), 179-208.

Cole, D. (2008). Constructive criticism: The role of student-faculty interactions on African American and Hispanic students' educational gains. *Journal of College Student Development, 49*(6), 587-605.

Cole, D. G., & Espinoza, A. (2008). Examining the academic success of Latino students in Science, Technology, Engineering, and Mathematics (STEM) majors. *Journal of College Student Development, 49*(4), 285-300.

Crissey, S. R. (2009). Educational Attainment in the United States: 2007. In U. S. C. Bureau (Ed.). Washington, D.C.

Cuadraz, G. H. (2005). Chicanas and higher education: Three decades of literature and thought. Journal of Hispanic Higher Education, 4(3), 215-234. DOI: 10.1177/1538192705276547

Dayton, B., Gonzalez-Vasquez, N., Martinez, C. R., & Plum, C. (2004). Hispanic-serving institutions through the eyes of students and administrators. *New Directions for Student Services, 105*, 29–40.

Dennis, J. M., Phinney, J. S., & Chuateco, L. I. (2005). The role of motivation, parental support, and peer support in the academic success of ethnic minority first-generation college students. *Journal of College Student Development, 46*(3), 223-236.

Derby, D. C., & Smith, T. (2004). An orientation course and community college retention. *Community College of Research and Practice, 28*, 763-773.

Eamon, M. K. (2004). Socio-demographic, school, neighborhood, and parenting influences on the academic achievement of Latino youth adolescents. Journal of Youth and Adolescence, 34, 163–174.

Fenske, R. H., Porter, J. D., & DuBrock, C. P. (2000). Tracking financial aid and persistence of women, minority, and needy students in science, engineering, and mathematics. *Research in Higher Education, 41*(1), 67.

Fisher, M. J. (2009). Settling into campus life: Differences by race/ethnicity in college involvement and outcomes. *The Journal of Higher Education, 78*(2), 125-156. DOI: 10.1353/jhe.2007.0009

Fry, R. (2004). Latino youth finishing college: The role of selective pathways. Pew Hispanic Center. Retrieved June 24, 2004 from the Pew Hispanic Center Web site: Finn, J. D. (1989). Withdrawing from school. *Review of Educational Research, 59*(2), 117-142.

Gay, G. (2000). *Culturally responsive teaching: Theory, research, and practice*. New York, NY: Teachers College Press.

Gloria, A.M., & Castellanos, J. (2003). Latina/o and African American students at predominantly white institutions: A psychosociocultural perspective of cultural congruity, campus climate, and academic persistence. In J. Castellanos & L. Jones' (Eds.), *The majority in*

the minority: Expanding the representation of Latina/o faculty, administrators and students in higher education. Sterling, Virginia: Stylus Publishing, LLC.

Gloria, Am., & Castellanos, J. (2006). Sustaining Latina/o doctoral students: A psychosociocultural approach for faculty. In J. Castellanos, A. Gloria, & M. Kamimura's, *The Latina/o pathway to the Ph.D.: Abriendo caminos*. Sterling, Virginia: Stylus Publishing, LLC.

Gonzalez, K.P., Figueroa, M.A., Marin, P., Moreno, J.F., & Navia, C.N. (2002). Inside doctoral education in America: Voices of Latinas/os in pursuit of the Ph.D. *Journal of College Student Development, 43*(4), 540-557.

Hernandez, J. C. (2000). Understanding the retention of Latino college students. *Journal of College Student Development, 41*(6), 575-584.

Hernandez, J. C. (2002). A qualitative exploration of the first-year experience of Latino college students. *NASPA Journal 40*(1), 69-84.

Hodge, G., Lewis, T., Kramer, K., & Hughes, R. (2001). Collaboration for excellence: Engaged scholarship at Collin County Community College. *Community College Journal of Research and Practice, 25*, 675-690.

Hollis, S. A. (2002). Capturing the experience: Transforming community service into service learning. *Teaching Sociology, 30*(2), 200-213.

Hurtado, A. (1997). Understanding multiple group identities: Inserting women into cultural transformations. *Journal of Social Issues, 53*(2), 299-328.

Hurtado, S., & Carter, D. F. (1997). Effects of college transition and perceptions of the campus racial climate on Latino college student's sense of belonging. *Sociology of Education*, 70, 324-435.

Hurtado, S., & Ponjuan, L. (2005). Latino educational outcomes and the campus climate. *Journal of Hispanic Higher Education, 4*(3), 235–251.

Hurtado-Ortiz, M. T., & Gauvain, M. (2007). Postsecondary education among Mexican American youth: Contributions of parents, siblings, acculturation, and generational status. *Hispanic Journal of Behavioral Sciences, 29*(2), 181-191. DOI: 10.1177/0739986307299584

Johnson, D. R., Soldner, M., Brown, J. L., Alvarez, P., Kurotsuchi, K. I., & Longerbeam, S. D. (2007). Examining sense of belonging among first-year undergraduates from different racial/ethnic groups. *Journal of College Student Development, 48*(5), 525-542. DOI: 10.1353/csd.2007.0054

Laden, B. V. (2004). Hispanic-serving institutions: What are they? Where are they? *Community College Journal of Research and Practice, 28*, 181–198.

Ladson-Billings, G. (1995a). But that's just good teaching! The case for culturally relevant pedagogy. *Theory into Practice, 34*(3), 159-165.

Ladson-Billings, G. (1995b). Toward a theory of culturally relevant pedagogy. *American Educational Research Journal, 32*(3), 465-491.

Laird, T. F., Bridges, B. K., Morelon-Quainoo, C. L., Williams, J. M., & Holmes, M. S. (2007). African American and Hispanic student engagement at minority serving and predominantly White institutions. *Journal of College Student Development, 48*(1), 39–56.

Llagas, C., & Snyder, T.D. (2003). *Status and trends in the education of Hispanics*. Washington, DC: U.S. Department of Education, National Center for Educational Statistics. (NCES 2003–008).

Lopez, E. M. (1995). Challenges and resources for Mexican American students within the family, peer group and university: Age and gender patterns. *Hispanic Journal of Behavioral Sciences, 17*(4), 499-508.

Maestas, R., Vaquera, G. S., & Zehr, L. M. (2007). Factors impacting sense of belonging at a Hispanic-serving institution. *Journal of Hispanic Higher Education, 6*(3), 237–256.

Miller, L. S. (2005). Exploring the high academic performance: The case of Latinos in higher education. *Journal of Hispanic Higher Education, 4*(3), 252-271. DOI: 10.1177/1538192705276549

Moreno, S. E., & Muller, C. (1999). Success and diversity: The transition through first year calculus in the university. *American Journal of Education, 108*(1), 30–57.

Museus, S. D., Nichols, A. H., & Lambert, A. D. (2008). Racial differences in the effects of campus racial climate on degree completion: A structural equation model. *The Review of Higher Education, 32*(1), 107-134.

National Center for Educational Statistics. (2003b). *Status and trends in the education of Hispanics*. (NCES No. 2003-008). Retrieved from the IES web site: http://nces.ed.gov/pubs2003/Hispanics/index.asp

National Center for Education Statistics. (2009). *Projections of education statistics to 2018*. (NCES 2009-062). Retrieved from the IES web site: http://nces.ed.gov/programs/projections/projections2018/sec2c.asp

Nora, A. (2001). The depiction of significant others in Tinto's "Rites of Passage:" A reconceptualization of the influence of family and community in the persistence process. *Journal of College Student Retention: Research, Theory & Practice, 3*(1), 41-56.

Nora, A. (2004). The role of *habitus* and cultural capital in choosing a college, transitioning from high school to higher education, and persisting in college among minority and non-minority students. *Journal of Hispanic Higher Education, 3*(2), 180-208.

Nora, A., Attinasi, L., & Matonak, A. (1990). Quantification and testing of qualitative measures of precollege factors in Tinto's model of student attrition among a community college student population. *Review of Higher Education, 13*(3), 337-355.

Nora, A., & Cabrera, A. F. (1996). The role of perceptions of prejudice and discrimination on the adjustment of minority students to college. *Journal of Higher Education, 67*(2), 119-148.

Nora, A., & Cabrera, A.F. (1993). The construct validity of institutional commitment: A confirmatory factor analysis. *Research in Higher Education, 34*(2), 243–262.

Nora, A., Cabrera, A., Hagedorn, L. S., & Pascarella, E. (1996). Differential impacts of academic and social experiences on college-related behavioral outcomes across different ethnic and gender groups at four-year institutions. *Research in Higher Education, 37*(4), 427-451.

Nora, A., & Crisp, G. (2009). Hispanics and higher education: An overview of research, theory, and practice. In J. C. Smart (Ed.) *Higher Education: Handbook of Theory and Research, 24*, (pp. 321-358). Springer Publishing.

Nunez, A. M. (2009). Latino students' transitions to college: A social and intercultural capital perspective. *Harvard Educational Review, 79*(1), 22-48.

Oakes, J. (1990). Opportunities, achievement and choice: Women and minority students in science and mathematics. *Review of Research in Education, 16*, 153–222.

Olivas, M. A. (2005). Higher education as "place": Location, race, and college attendance policies. *The Review of Higher Education, 28*(2), 169-190.

Padilla, R. V., Trevino, J., Gonzalez, I., & Trevino, J. (1997). Developing local models of minority student success in college. *Journal of College Student Development, 38*, 125-135.

Pascarella, E. T., & Terenzini, P. T. (1991). *How college affects students: Findings and insights from twenty years of research.* San Francisco, CA: Jossey-Bass.

Pascarella, E. T., & Terenzini, P. T. (2005). *How College Affects Students, Volume 2,, A Third Decade of Research*. San Francisco, CA: Jossey-Bass.

Pew Hispanic Center. (2005). *Hispanics: A people in motion*. Washington, DC: Pew Hispanic Center.

Pew Hispanic Center. (2009). *Between two worlds: How young Latinos come of age in America*. Washington, DC: Pew Hispanic Center.

Quintana, S. M., Vogel, M. C., & Ybarra, V. C. (1991). Meta-analysis of Latino students' adjustment in higher education. *Hispanic Journal of Behavioral Sciences, 13*(2), 155-168. DOI: 10.1177/07399863910132003

Raftery, S. (2005, Spring). Developmental learning communities at Metropolitan Community College. *New Directions for Community Colleges, 129*, 23-72.

Rakow, S. J., & Bermudez, A. B. (1993). Science is ''ciencia'': Meeting the needs of Hispanic American students. *Science Education, 77*(6), 669–683.

Raymond, L., & Napoli, A. R. (1998). An examination of the impact of a freshman seminar course on student academic outcomes. *Journal of Applied Research in the Community College, 6*(1), 27-34.

Rendon, L.I. (1994). Validating culturally diverse students: Toward a new model of learning and student development. *Innovative Higher Education, 19*(1), 23-32.

Rendon, L.I., Jalomo, R., & Nora, A. (2001). Minority student persistence. In J. Braxton's (Ed.), *Rethinking the departure puzzle: New theory and research on college student retention*. Nashville, TN: Vanderbilt University Press.

Rendon, L. I., Novack, V., & Dowell, D. (2005). Testing race-neutral admissions models: Lessons learned from California State University-Long Beach. *The Review of Higher Education, 28*(2), 221–243.

Rosaldo, R. (1989). *Culture and truth: The remaking of social analysis*. Boston, MA: Beacon Press.

Santiago, D. A., Andrade, S. J., & Brown, S. E. (2004). Latino student success at Hispanic-serving institutions. Washington, DC: Excelencia in Education, Inc. Retrieved from the web site: http://www.cierp.utep.edu/projects/lss/pbrief.pdf

Simpson, J. C. (2001). Segregated by subject—racial differences in the factors influencing academic major between European Americans, Asian Americans, and African, Hispanic, and Native Americans. Journal of Higher Education, 72(1), 63–100.

Solberg, V.S., Valdez, J. & Villarreal, P. (1994). Social support, stress, and Hispanic college adjustment: Test of a diathesis-stress model. *Hispanic Journal of Behavioral Sciences 16*, 230–239.

Solberg, V. S., & Villarreal P. (1997). Examination of self-efficacy, social support, and stress as predictors of psychological and physical distress among Hispanic college students. *Hispanic Journal of Behavioral Sciences 19*, 182–201.

Solorzano, D. (1995). The baccalaureate origins of Chicana and Chicano doctorates in the social sciences. *Hispanic Journal of Behavioral Sciences, 17*, 3-32.

Solórzano, D. G., Villallpando, O., & Osegura, L. (2005). Educational inequities and Latina/o undergraduate students in the United States: A critical race analysis of their educational practices. *Journal of Hispanic Higher Education, 4*(3), 272-294.

Sondgeroth, M. S., & Stough, L. M. (1992, April). Factors influencing the persistence of ethnic minority students enrolled in a college engineering program. Paper presented at the American Educational Research Association, San Francisco, CA.

St. John, E. P., Cabrera, A. F., Nora, A., & Asker, E. H. (2000). Economic influences on persistence reconsidered: How can finance research inform the reconceptualization of persistence models? In J.M. Braxton's (Ed.), *Reworking the student departure puzzle*. Nashville, TN: Vanderbilt University Press.

Stovall, M. L. (1999). Relationships between participation in a community college student success course and academic performance and persistence. Unpublished doctoral dissertation, University of Illinois, Urbana-Champaign.

Swail, W.S., Cabrera, A.F., Lee, C., & Williams, A. (2005). *Latino students and the educational pipeline*. Washington, DC: Educational Policy Institute.

Terenzini, P.T., & Pascarella, E.T. (1984). Freshman attrition and the residential context. *Review of Higher Education*, *7*, 111-124.

Tierney, W. (1992). An anthropological analysis of student participation in college. *Journal of Higher Education, 63*(6), 603-618.

Tierney, W. G. (1993). *Building communities of difference: Higher education in the 21st century*, Westport, CT: Bergin & Garvey.

Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research, 45*, 89-125.

Tinto, V. (1987). *Leaving College: Rethinking the causes and cures of student attrition*. Chicago, IL: University of Chicago Press.

Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition (2nd ed.)*. Chicago, IL: University of Chicago Press.

Toews, M. L, & Yazedjian, A. (2007). College adjustment among freshmen: Predictors for white and Hispanic males and females. *College Student Journal, 41*(1), 891-900.

Torres, V. (2003). Influences on ethnic identity development of Latino college students in the first two years of college. *Journal of College Student Development 44*(4), 532-547.

Torres, V. (2006). A mixed method study testing data-model fit of a retention model for Latino/a students at urban universities. *Journal of College Student Development, 47*(3), 299-318.

Tyson, W., Lee, R., Borman, K. M., & Hanson, M. A. (2007). Science, technology, engineering, and mathematics (STEM) pathways: High school science and math coursework and postsecondary degree attainment. *Journal of Education for Students Placed at Risk, 12*(3), 243–270.

U.S. Department of Education. (2005). *Title V developing Hispanic-serving institution programs*. Retrieved from http://www.ed.gov/programs/idueshsi/definition.html

U.S. Government Accountability Office. (2005). *Higher education: Federal science, technology, engineering, and mathematics programs and related trends* (GAO-06-114). Retrieved from the web site: http://www.gao.gov/new.items/d06114.pdf

Wolfe, R. (1991). *Supplemental instruction with mentoring support at Anne Arundel Community College*. Fund for the Improvement of Postsecondary Education. (ERIC Document Reproduction Service No. ED413942)

Young, H. (2005). Secondary education systematic issues: Addressing possible contributors to a

    leak in the science education pipeline and potential solutions. *Journal of Science*

    Education & Technology, 14(2), 205–216.

Zaritsky, J. S., & Toce, A. (2006). Supplemental instruction at a community college: The four

    pillars. *New Directions for Teaching and Learning, 106*, 23-31.

Zurita, M. (2004). Stopping out and persisting: Experiences of Latino undergraduates. Journal *of*

    College Student Retention, 6(3), 301-324.