

Chicano(a) and Mexican American College Students: Examining the Relationship between Academic Self-Concept and Academic Achievement

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The relationship between academic self-concept and academic achievement of Chicano(a) and/or Mexican American students at Colorado State University was investigated in this study. The participants included 114 undergraduate, full-time students who self-identify as Chicano(a) and/or Mexican American. The quantitative instrument utilized to measure academic self-concept was developed by Reynolds, Ramirez, Magrina, and Allen (1980) and called the "Academic Self-Concept Scale" (ASCS). The results of this study clearly indicate that there is a high correlation and positive relationship between academic self-concept and academic achievement for Chicano(a) and Mexican American college students. The academic self-concept constructs designed by Reynolds, et al. provide support to the importance of acknowledging and valuing non-cognitive variables as an important aspect in the development and academic success of college students, particularly racially, ethnically, and culturally diverse students.

Educators began to give attention to the idea and value of self-concept through the belief that non-cognitive variables have a role in the academic success of students (Cokely, 2000; Frazier & DeBlasie, 1982; Gerardi, 1990; House, 1997; Messick, 1979; Nettles & Johnson, 1987; Reynolds, 1988; Reynolds, Ramirez, Magrina, & Allen, 1980; Shavelson & Bolus, 1982; Shavelson & Stuart, 1977; Smith, Reynolds, & Serlin, 1986). Researchers have identified students' academic self-concept as a significant predictor of future academic achievement for students pursuing higher education (Cokley, 2000; Gerardi, 1990; House, 1997; Lent, Brown, & Gore, 1997; Reynolds, 1988; Reynolds et al., 1980). Academic self-concept can generally be regarded as how a student believes his or her academic ability and academic standing compares to his or her academic peers. Brookover, Paterson, and Thomas (1962) defined academic self-concept as "a person's conception of his [or her] own ability to learn the accepted types of academic behavior . . . [and academic] performance in terms of school achievement" (p. 271). While academic self-concept has been studied, there has been little research dedicated to the construction of Chicano(a) and Mexican American college students' academic self-concept.

Enrollment of students from Chicano(a) and Mexican American ethnic backgrounds has been increasing at colleges and universities over the past few decades in record numbers; however, this population lacks the proportional representation in higher education enrollment and graduation rates (Aguirre & Martinez, 1994; Gandara, 1994; McGlynn, 1998; Nevarez, 2001; Solorzano & Solorzano, 1995). Overall, Chicano(a) and Mexican American students are the least likely to complete high school, pursue higher education, and graduate with a college degree (McGlynn, 1998; Nevarez, 2001). An examination of the literature related to Chicano(a) and Mexican American college students suggests that they are academically and emotionally under-prepared for college, which can have effects on their academic self-concept (Gloria, 1999; Nevarez, 2001). With the growing number of Chicano(a) and Mexican American college students in the American educational system, it becomes important for student affairs practitioners to understand the construction of students' academic self-concept and become more cognizant of their academic needs.

There have been few academic self-concept and academic achievement studies that examine college students and there are even fewer studies that focus specifically on ethnically diverse populations (Cokley, 2000; Gerardi, 1990; House, 1997; Nettles & Johnson, 1987). Gerardi's research concluded that non-cognitive measurements of academic self-concept are a better predictor of grade point average (GPA) for minority and low-socioeconomic background students than are cognitive predictors, such as standardized test scores. This research indicated "that the empirical reality of minority and low-socioeconomic background students' academic potential becomes unrecognizable and unelucidated, because these academic capabilities are hidden behind the traditional cognitive variables as the sole predictor of academic success" (Gerardi, 1990, p. 406). Gerardi's study infers that valuing only cognitive variables for academic achievement misrepresents the academic potential of minority and students of low socioeconomic status.

The author of this study was unable to locate any academic self-concept studies conducted exclusively with Hispanic, Latino(a), Chicano(a), or Mexican American college students. There is, however, academic self-concept research pertaining to African American and Asian American college students (Cokley, 2000; House, 1997). Cokley used the Academic Self-Concept Scale (ASCS) developed by Reynolds et al. (1980) and revealed a positive correlation between academic self-concept and academic achievement for African American students attending predominately white institutions and historically black colleges and universities. The largest predictor of academic self-concept was GPA, with student-faculty interactions second, and class status third (Cokley, 2000). House discovered that Asian American college students' academic self-concept was significantly correlated with high school curriculum, financial goals, social goals, achievement expectations, desire for recognition, and GPA. In addition, academic self-concept was the strongest predictor of GPA (House, 1997).

Purpose of the Study

The purpose of this study is to investigate the relationship of academic self-concept and academic achievement of undergraduate, full-time students who have self-identified as Chicano(a) and/or Mexican American at Colorado State University. The research questions of the study are: (1) What is the relationship between academic self-concept of Chicano(a) and Mexican American college students and academic achievement? (2) Which of the seven academic self-concept constructs (grade and effort dimension, study habits/organization self-perceptions, peer evaluation of academic ability, self-confidence in academics, satisfaction with school, self-doubt about ability, or self-evaluation with external standards) predict academic achievement for Chicano(a) and Mexican American college students? (3) What is the relationship between the demographic variables (sex, age, academic classification, first-generation college student status, and family/household income) and academic achievement for Chicano(a) and Mexican American college students?

Method

Participants

The population of interest is all undergraduate, full-time students who self-identify as Chicano(a) and/or Mexican American college students attending Colorado State University ($n = 1,024$). The researcher distributed 512 mailings, which included a letter requesting the population of interest's consent and participation in the study, a demographic questionnaire, and the ASCS as approved by the Colorado State University Human Research Committee. The total response used in the analysis was 114 completed surveys or 23% of the total population surveyed. Table 1 displays the demographic variables and cumulative GPA for the study population. The sample demographics appear to be similar to the general Hispanic population at Colorado State University, which can also be examined in Table 1.

Instrument

The quantitative instrument, the ASCS (Reynolds et al., 1980), was used to measure academic self-concept in this study. The instrument consists of 40 Likert-scale items regarding an individual's academic self-concept and is keyed in a positive direction extending from (1) strongly disagree to (2) disagree to (3) agree to (4) strongly agree. Within the ASCS, the seven constructs of academic self-concept include: grade and effort dimension, study habits/organization self-perceptions, peer evaluation of academic ability, self-confidence in academics, satisfaction with school, self-doubt about ability, and self-evaluation with external standards. Reynolds et al. formulated the seven constructs of academic self-concept and the ASCS has been utilized in repeated studies on various college student populations (Cokley, 2000; Lent et al., 1997; Reynolds, 1988). Reynolds (1988) elected to measure academic achievement by GPA stating, "academic achievement in the form of college grades is viewed as a more salient value and attribute by which a student may judge himself or herself" (p. 225).

The ASCS instrument has been found to have an estimated reliability (internal consistency) of 0.91 (Reynolds et al., 1980; Reynolds, 1988). Reynolds et al. and Smith et al. (1986) reported correlations between ASCS and students' GPA of 0.40 ($p < 0.001$). Cokley (2000) reported the test-retest reliability to be

0.88 and the Cronbach's alpha for the entire scale was reported at 0.92. The convergent validity, after correction for attenuation is reported to be 0.44 and the discriminant validity with the Marlow-Crowne Social Desirability Scale is reported to be 0.17 (Reynolds, 1988). Reynolds and Lent et al. (1997) performed studies on undergraduate students using the ASCS along with other self-concept measurements that established a correlation between academic self-concept and academic achievement. The results of the study concluded that academic self-concept related to the overall academic achievement of their participants and the measurement of academic self-concept may be useful in forecasting aggregate academic performance (Lent et al., 1997). These data lend support to the reliability and validity of the use of the ASCS as a measurement of academic self-concept.

In addition, the population of interest was asked to answer dichotomous and nominal demographic characteristic questions to be used in analyzing relationships between demographic variables and academic achievement

Table 1
Demographic Information of Study Participants and the Total Self-Identified Hispanic Population at Colorado State University

	<u>Study Population</u> (n=114)		<u>CSU Hispanic Population</u> (n=1,024)	
	n	%		%
<u>Sex</u>				
Female	81	71.1		61.9
Male	33	28.9		38.1
<u>Academic Classification</u>				
Freshmen	40	35.1		32.0
Sophomore	31	27.2		24.3
Junior	17	14.9		18.8
Senior	26	22.8		24.9
<u>First Generation Status</u>				
Yes	76	66.7		56.3
No	38	33.3		43.7
<u>Age</u>				
18 and under	25	21.9	(no data available)	
19-20	53	46.5		
21-22	18	15.8		
23-24	11	9.7		
25 and over	7	6.1		
<u>Family/Household Income</u>				
\$25,000 and below	26	22.8	(no data available)	
\$25,001-\$50,000	27	23.7		
\$50,001-75,000	24	21.0		
\$75,001-\$100,000	17	14.9		
\$100,001 and above	10	8.8		
Do not know	10	8.8		

Reliability Analysis

The statistical analysis was conducted employing the Software Package for Social Sciences. Descriptive statistics were employed to calculate mean values and the standard deviation of the cumulative GPA of the study population for each item on the ASCS. A reliability analysis was used to verify the item total scale correlations for each of the ASCS surveys that were completed. The reliability analysis was performed on the 114 completed surveys and yielded a Cronbach's coefficient alpha of 0.9608, which is an extremely high measure of reliability.

Findings Related to Research Question One

The main purpose of this study was to determine if there was a relationship between academic self-concept and academic achievement for Chicano(a) and Mexican American college students. A correlation matrix was created to address question one; correlation matrices disclose the Pearson correlation coefficients and the significance levels. Of the 40 ASCS items, 37 of the questions were highly correlated with cumulative GPA at the 99% confidence level, two ASCS items were highly correlated with cumulative GPA at the 95% confidence level, and one item was not correlated. The total value of the ASCS is correlated with GPA by 0.701, which is highly significant at the 99% confidence level.

Cokley (2000), Lent et al. (1997), and Reynolds (1988) illustrated a significant relationship between academic self-concept and cumulative GPA. Cokley found that “students with higher GPAs had statistically higher academic self-concept scores than students with lower GPAs” (p. 161). According to Lent et al. (1997) “the ASCS self-concept measure yielded the only significant path to overall term grades” (p. 313). The findings related to research question one indicate that there is a strong, highly correlated relationship between academic self-concept and academic achievement.

Findings Related to Research Question Two

Another purpose of the study was to determine which of the seven constructs of academic self-concept (grade and effort dimension, study habits/organization self-perceptions, peer evaluation of academic ability, self-confidence in academics, satisfaction with school, self-doubt about ability, and self-evaluation with external standards for academic achievement) was correlated with cumulative GPA among Chicano(a) and Mexican American college students. A correlation matrix was also created to address research question two. Each of the academic self-concept factors were highly correlated to cumulative GPA at the 99% confidence level. The findings related to research question two indicate that each of the seven constructs of academic self-concept have a strong, high correlation to academic achievement.

Findings Related to Research Question Three

This study also sought to determine if there was a relationship between the demographic variables of sex, age, academic classification, first-generation college student status, and family/household income with academic achievement for Chicano(a) and Mexican American college students. Table 2 shows the mean and standard deviation of cumulative GPA for each demographic variable examined.

Table 2
Mean and Standard Deviation of the Cumulative GPA by Participant Demographic Variables

	<u>Cumulative GPA</u>	
	Mean	Standard Deviation
	(n=114)	
<u>Sex</u>		
Female	3.066	0.685
Male	2.962	0.656
<u>First Generation Status</u>		
Yes	3.036	0.711
No	3.035	0.606
<u>Academic Classification</u>		
Freshmen	3.179	0.592
Sophomore	2.680	0.589
Junior	2.900	0.865

Senior	3.329	0.571
<u>Age</u>		
18 and under	3.182	0.534
19-20	2.813	0.740
21-22	3.282	0.459
23-24	3.056	0.459
25 and over	3.536	0.199
<u>Family/Household Income</u>		
\$25,000 and below	3.272	0.506
\$25,001-\$50,000	2.814	0.638
\$50,001-75,000	2.832	0.942
\$75,001-\$100,000	3.202	0.421
\$100,001 and above	2.886	0.648
Do not know	3.377	0.454

A generalized linear model was fit to quantify the overall relationship between the demographic variables and academic achievement. Table 3 specifies the effects of the variables on cumulative GPA. This table shows the highly significant relationship between academic classification, family/household income, as well as a smaller yet, significant relationship with age and cumulative GPA. Sex and first-generation status are not significant effects.

In addition, independent sample t-tests were used to assess the relationship between sex and first-generation college student status with cumulative GPA. Separate one-way ANOVAs were used to address possible effects that age, academic classification, and family/household income have on cumulative GPA.

An independent samples t-test was conducted using sex and cumulative GPA, resulting in a test statistic of -0.740 with 112 degrees of freedom. The data indicates that there was no significant difference between the relationship of cumulative GPA between females and males since the 2-tailed significance level is 0.461. Likewise, Cokley (2000), Lent et al. (1997), and Reynolds (1988) found the differences between females and males were negligible and not statistically significant.

Table 3
Generalized Linear Model Testing the Effect of Demographic Variables on Cumulative GPA

	Sum of Squares	df	Mean Square	F	P-Value
<u>Covariates</u>					
Age	0.895	1	0.895	2.337	0.129
<u>Main Effects</u>					
Gender	0.220	1	0.220	0.575	0.450
Academic Classification	4.708	3	1.180	4.097	0.009
First Generation Status	0.000	1	0.000	0.000	0.993
Household Income	4.616	5	0.923	2.410	0.042
Model	12.818	12	1.068	2.788	0.003
Residual	38.689	101	0.383		
Total	51.507	113	0.456		

An independent samples t-test was conducted using first-generation status and cumulative GPA, resulting in a test statistic for the independent samples t-test of 0.012 with 112 degrees of freedom. The data indicate that there is no significant difference between cumulative GPA between those who are first-generation college students and those who are not since the 2-tailed significance level is 0.990. The researcher found no other studies involving the relationship of first-generation status and academic achievement in an academic self-concept framework.

Table 4 shows the ANOVA testing effect of academic classification on cumulative GPA. The effect of academic classification on cumulative GPA was significant, with a p-value of 0.001. The LSD multiple

comparisons procedure revealed that freshmen and sophomores are statistically different with a p-value of 0.001, sophomores and seniors are statistically different with a p-value less than 0.001, and juniors and seniors are statistically different with a p-value of 0.032. There was no significant difference between sophomores and juniors. As hypothesized and confirmed by Reynolds (1988), academic classification will yield an effect on a student's academic self-concept; a student will exhibit a higher cumulative GPA in the upper levels of college. Cokley (2000) found this to be untrue in his study and found that underclassmen had higher mean academic self-concept scores than upperclassmen. Cokley (2000) attributed this difference to the "cross-sectional non-experimental design of the study" (p. 161).

Table 4
ANOVA Testing Effect of Academic Classification on Cumulative GPA

	Sum of Squares	df	Mean Square	F	P-Value
Between Groups	7.288	3	2.429	6.043	0.001
Within Groups	44.219	110	0.402		
Total	51.507	113			

Table 5 shows the ANOVA testing effect of age on cumulative GPA. The effect of age on cumulative GPA was significant, with a p-value of 0.008. The LSD multiple comparisons procedure revealed that 18 year olds and under are statistically different with a p-value of 0.020, 19-20 year olds and 21-22 year olds are statistically different with a p-value of 0.009, and 19-20 years olds and 25 year olds and above are statistically different with a p-value of 0.006. The researcher found no other studies pertaining to the relationship between age and academic achievement but hypothesizes that age is similar to academic classification; the older a student is, the more experienced and confident they are, which results in a higher academic self-concept.

Table 5
ANOVA Testing Effect of Age on Cumulative GPA

	Sum of Squares	df	Mean Square	F	P-Value
Between Groups	6.013	4	1.503	3.602	0.008
Within Groups	45.494	109	0.417		
Total	51.507	113			

Table 6 shows the ANOVA testing effect of family/household income on cumulative GPA. The effect of family/household income on cumulative GPA was significant, with a p-value of 0.027. The LSD multiple comparisons procedure revealed that those from family/household incomes of \$25,000 and below are significantly different from those from \$25,001-\$50,000 and \$50,001-\$75,000 with a p-value of 0.012 and 0.019, respectively. Also, those from the study population who did not know their family/household income are significantly different from those from the \$25,001-\$50,000 and \$50,001-\$75,000 income by 0.021 and 0.028, respectively. The researcher found no other studies pertaining to the relationship between family/household income and academic achievement in an academic self-concept framework

Table 6
ANOVA Testing Effect of Family/Household Income on Cumulative GPA

	Sum of Squares	df	Mean Square	F	P-Value
Between Groups	5.634	5	1.127	2.653	0.027

Within Groups	45.873	108	0.425
Total	51.507	113	

Conclusions

Throughout the literature relating to the academic factors for Chicano(a) and Mexican American college students, a consistent theme was providing the adequate and appropriate access and opportunity for successful academic endeavors. *The Council for the Advancement of Standards in Higher Education Book of Professional Standards for Higher Education* discusses the need for all students to have the opportunity to be assisted in the development of their academic learning, in the enhancement of their self-esteem, and in the improvement of their academic skills to be successful in the classroom (2001).

The results of this study denote that academic self-concept is a critical factor in a student's academic achievement. In addition, the results of this study clearly indicate that there is a positive relationship between academic self-concept and academic achievement for Chicano(a) and Mexican American college students in this study population. The results also lend support for the ASCS as a measurement to be used with Chicano(a) and Mexican American college students. These data illustrate the presumption that students with higher academic self-concepts will have higher GPAs and those with lower academic self-concepts will have lower GPAs. The academic self-concept constructs suggested by Reynolds et al. (1980) also support the importance of acknowledging and valuing non-cognitive variables as an important aspect in the development and academic success of college students, particularly racially, ethnically, and culturally diverse students. The significant relationships found between the demographic variables and cumulative GPA of academic classification, family/household income, and age are important to note. Understanding the significance of the demographic variables can aid student affairs professionals, campus administrators, and faculty members in assisting and understanding factors of students' academic development.

Recommendations

The following recommendations are based upon the research conducted and the literature related to Chicano(a) and Mexican American college students and academic self-concept. Each of the recommendations calls for a bridging of the gap between academic and student affairs.

First, it is important to weave academic development programming and student development theory aimed at increasing students' overall academic self-concept and the specific constructs of academic self-concept. There is also a need to create programs built to increase formalized relationships and mentorship opportunities for students with peers, student affairs professionals, and faculty members. Furthermore, incentives and standards should be developed for faculty members to diversify and infuse multiculturalism into the daily curriculum. In addition, programs in higher education should be created to provide early outreach to primary and secondary schools on admission, financial aid, and postsecondary educational opportunities. Lastly, research should continue to examine the relationship of academic self-concept and academic achievement for Chicano(a) and Mexican American college students. This study has produced statistically significant results, which may be of use to various campus offices and departments; however, further research is needed for increased understanding and utilization of these results and recommendations.

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