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Impact of the Academic-Social Context on American Indian/Alaska Native Student's Academic Performance

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ABSTRACT

American Indian/Alaska Native students have the highest dropout rates of any racial-ethnic group. This study posits that a poor Academic-Social Context contributes to low grade point average (GPA), which in turn negatively affects AI/AN students' persistence to graduation. The present study compares the self-reported academic performance of AI/AN undergraduate students with that of students from other ethnic backgrounds, in order to evaluate whether variation in students' ASC and any identified medical conditions differentially affected AI/AN students. Findings suggest that AI/AN students enter college with poorer ASC and have lower GPA scores. This study points to further investigations into the effects of social contexts on AI/AN students' academic achievement and retention in college, especially social belongingness.

INTRODUCTION

According to the United States Census Bureau (2000), minorities comprised approximately 28 percent of the population (n.d.). Minorities represent about the same rates in student populations of U.S. colleges and universities. Currently, Whites make up about 60 percent of U.S. new college student enrollment, with African Americans representing about 14 percent, Hispanics making up about 13 percent and American Indian/Alaska Natives (AI/ANs) consisting of only about 0.8 percent of all college students nationwide (O'Brien, 1992). Of the approximate 19 million college students in the United States, AI/AN students are the minority within the minority (U.S. Department of Education, 2009).

American Indian/Alaska Natives enter college at very low rates and, unfortunately, their completion rates are also extremely low. The gap between underrepresented minorities, specifically AI/AN students (Braxton, Brier, & Steele, 2008; National Center for Education Statistics, 2004; Patterson et al., in press; Tinto, 1975, 1993), and other student populations is paramount. According to Brown, Robinson, and Kurpius (1997), 75 percent to 93 percent of AI/AN students drop out of college prior to degree completion. The fact is, if AI/AN students do get a high school diploma and begin attending college, they have the highest rate of dropping out of college compared to any other student demographic.

Previous efforts have sought to explain AI/AN student dropout from a systems perspective. For instance, several studies have examined the educational system's designs (see, Goodlad, 1984; Sherman & Sherman, 1990; Weis, Farrar, & Petrie, 1989); instructor attitudes (see, Deyhle, 1989; Platero, et al., 1986; Reyhner, 1990); and ineffective curriculum and instruction techniques (see, Freeman & Freeman, 1988; Reyhner, 1992; Swisher & Deyhle,

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1989). These studies have revealed that the educational structure is partly to blame for high dropout rates for AI/ANs.

There are also plenty of efforts to study and search for individual issues of students who drop out from college. For instance, poor preparatory education and lack of community role models (see Brayboy, Fann, Castagno, & Solyom, 2012) have been identified as factors in poor performance in higher education.

The most powerful factor associated with college completion is being successful *in college*. There is a distinct and reliable relationship between academic performance and college completion (see, Adelman, 1998, 1999; DesJardins, Ahlburg, & McCall, 1999; DesJardins, et al., 2002). The boundaries of academic and social activities create a context that promotes success in college. This paper takes the position that a successful academic-social context (ASC) is one that best serves the student in relation to academic performance. For instance, the established literature indicates that full-time attendance increases the likelihood that students will persist to graduation (Bradburn, 2002; Horn, 1998; King, 2003; Metzner & Bean, 1987; Starkey, 1994). Persistence to degree completion is also related to relationship status. Students who are in a relationship living together or who become parents are more likely to drop out of college (Adelman, 1999; Stratton, O'Toole, & Wetzel, 2007).

Students who commute to class are less likely than those who live on campus to socialize as student learners, engage regularly with faculty, and have friends who are students (Chickering, 1969, 1974; Bean, & Metzner 1985). Historically, the literature indicates that employment and hours worked per week are associated with college success (see, Alfred, 1973; Lenning et al., 1980; Peng & Fetters, 1978); the more time students have dedicated to scholarly efforts, the more beneficial it is to academic success. Having the additional responsibilities related to

employment places a burden on academic endeavors. On the other hand, students who do have time to volunteer benefit personally and academically from those experiences. Many youth are eager to volunteer their time and make meaningful contributions to their society (Youniss & Yates, 1999). Having the opportunity to connect with and put into practice their own values improves a student's prospects both personally and academically (Fiske and Taylor, 1991).

Finally, the overall health of the student is an important part of the ASC. A student's health and wellness have been clearly linked to academic success (Buddington, 2002; Case, Fertig, & Paxson 2005; Conley & Bennett 2000; Pritchard & Wilson, 2003; Smith 2005). Students who suffer medically also suffer academically. The factors making up a successful ASC (full-time enrollment status, not being in a relationship, living on campus, not employed, involved in some academic-related volunteer work, and having good health) are all important and have been studied separately. However, it is also important to evaluate a student's success in the context of being enveloped into all of the aforementioned components.

The purpose of this paper is to compare the self-reported academic performance of AI/AN undergraduate students with that of students from other ethnic backgrounds. Further, this paper will study the effects of variables describing a students' academic social context (ASC) on performance. The overall goal is to evaluate factors making up an ASC that could obstruct academic performance and success.

METHODS

Dataset

The present study used data with permission from the American College Health Association (ACHA). These data were collected via four administrations of the National College Health Assessment (NCHA; Fall 2008, Spring 2009, Fall 2009, and Fall 2010), a bi-annual

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survey the ACHA has administered since 2000. A sample survey (ACHA, n.d.c), information about participation history (ACHA, n.d.b), and information concerning the reliability, validity, and generalizability of survey results (ACHA, n.d.a) are available from ACHA's website (http://www.acha-ncha.org/overview.html).

The present study uses data from the Fall 2008 (N = 26,685 students, 40 institutions); Spring, 2009 (N = 87,105, 117 institutions); Fall 2009 (N = 34,208, 57 institutions); and Fall 2010 (N = 30,093, 139 institutions). All students were administered the same item set.

Sample

The sample for this study consists of the subset of students who 1) described themselves as either male or female (versus transgender); 2) were undergraduates and were within three years of the normal age progression for a full time undergraduate student, i.e., 18-21 years for a first year undergraduate; 3) were attending a US institution; 4) did not describe themselves as "international" students, and 5) reported a valid cumulative GPA, i.e., A through D/F. Against the total sample size of 178,091, 273 students failed criterion 1), 44,538 students failed criterion 2), 20,948 students failed criterion 3), 20,948 failed criterion 4), and 11693 failed criterion 5). Removing students failing retention criteria resulted in a final sample of 117,430 students. Table 1 reports the demographics for each subsample and for the total sample. Although the relationship between each demographic variable and the survey subsample was significant at $p < .001$, the *rho* effect sizes were uniformly small, ranging from .014 and .015 for the Biracial/Multiracial and Other race/ethnic categories, respectively, to .090 for the White race/ethnic category. The mean age for the total sample was 19.86 (SD = 1.51) years, but age differed across the four survey subsamples, $F(3, 117{,}426) = 943.03$, $p < .001$, *eta* = .153. The means and standard deviations for the four subsamples were Fall, 2008: $M = 19.62$, $SD = 1.45$;

Spring, 2009: $M = 20.08$, $SD = 1.47$; Fall, 2009: $M = 19.76$, $SD = 1.60$; Fall, 2010: $M = 19.53$, $SD = 1.48$. The association between cumulative GPA, hereafter referred to as GPA, and sample was examined by means of a Chi-Square test and by a univariate ANOVA. Although both statistical tests were significant [$x2(9, N = 117,430) = 180.72$, $p < .001$; $F(3, 117,426) = 36.83$, $p < .001$], the *rho* for the cross tabulation was .023 and the *eta* for the ANOVA was .031.

Grade Variables

Grades were assessed by a single item on the survey that asked for the respondent's approximate cumulative GPA with responses of A, B, C, D/F or N/A. A response of N/A was treated as an invalid response per criterion 5 above. The data were recoded so that D/F = 1, and A = 4.

Ethnicity Variables

Respondents were offered seven "select as many as apply" options for race-ethnicity, as shown in Table 1. Inspection of the endorsement patterns revealed that all combinations of options were marked, including none marked and all marked. We elected to treat the Asian, Black, Hispanic, AI/AN, and White options as primary categories and Biracial/Multiple and Other as secondary categories. We found that 491 students marked AI/AN with no other primary categories and 935 students marked both AI/AN and White with no other primary categories. Some of the 491 AI/AN and the 935 AI/AN-white students marked one or both of the Biracial/Multiple or Other categories as well. Across the four samples, the percentages of AI/AN students ranged from 0.233% to 0.812% and the percentages of AI/AN-White students ranged from 0.689% to 1.075%. The remaining 115,566 students were defined as the reference group. Among the reference group were students who had marked AI/AN as well as one other primary category; however, their numbers were fewer than 100 in each case, and thus were judged to be

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too small to be analytically meaningful. In addition, 438 respondents marked no ethnicity options and were scored as missing.

Academic Social Context Variables

Five dimensions of students' academic-social context were selected from the slightly larger set of questions in the ACHA survey. Frequencies for each variable and cross tabulations with ethnicity were examined to guide the collapsing of response categories with small frequencies, so as to yield analyzable cell frequencies. Respondents reported whether a) they were attending full-time (n = 113,806; 97.29%) or part-time/other (n = 3,169; 2.71%); b) they were not involved in a relationship (n = 62,896; 53.67%), in a relationship but not living together (n = 46,292; 39.50%) or living together (n = 8,008; 6.83%); c) they lived in school-sanctioned housing (residence halls, sororities, fraternities) (n = 64,550; 55.07%), with parents (n = 16,916; 14.43%) or in off-campus housing (n = 35,751; 30.50%); d) they did not work for pay (n = 54,746; 46.80%), worked 1-9 hours per week (n = 22,571; 19.30%), worked 10-19 hours per week (n = 22,783; 19.48%) or worked 20 or more hours per week (n = 16,870; 14.42%); and, finally, e) they did no volunteer work (n = 73,339; 62.93%), volunteered 1-9 hours per week (n = 38,486; 33.03%) or volunteered 10 or more hours per week (n = 4,707; 4.04%).

Disabilities and Medical Conditions Variables

Respondents were asked whether or not they had any of eight disabilities or medical conditions: attention deficit and hyperactivity disorder (ADHD), chronic illness, deafness/hearing problems, learning disability, mobility/dexterity disability, partially sighted/blind, psychiatric condition, speech/language disorder. The prevalence of the conditions ranged from 0.54% (mobility/dexterity disability) to 5.39% (ADHD). The four most prevalent conditions were retained for analysis: ADHD (n = 6,290; 5.39%), chronic illness (n = 3,652;

3.13%), learning disability (n = 4,110; 3.52%), and psychiatric condition (n = 4,209; 3.61%). Variables were coded for 1 = Yes.

RESULTS

Ethnicity and Gender

Table 2 presents the descriptive statistics for the ANOVA of GPA by Ethnicity and Gender. Multiple regressions were used to examine the independent effects of ethnicity, gender and their interaction, while controlling for sample effects. The All Else ethnic group and males were the reference categories for ethnicity and gender, respectively. The equation with sample contrasts only was significant [$F(3, 116988) = 36.11$, $p < .001$; $R = .0304$; $R^2 = .0093$]. Adding the ethnicity contrasts yielded a significant increase in R squared [$F(2, 116986) = 29.92$, $p < .001$; $\Delta R^2 = .0005$; b(AI/AN) = -0.240±0.031; b(AI/AN-White) = -0.030±0.022]. Adding the gender contrast (Female) yielded an additional significant increase in R squared [$F(1, 116985) = 556.98$, $p < .001$; $\Delta R^2 = .0047$; b = -0.099±0.004]. However, the ethnicity-gender interaction was not significant [$F(2, 116983) = 1.71$, $p > .05$; $\Delta R^2 = .00003$]. The results of the final regression equation showed that, compared to the All Else reference group, AI/AN students averaged 0.183±0.056 grade points lower, which was significant at $p < .001$, but that AI/AN-White students averaged 0.016±0.040 grade points higher, which was not significant. Females averaged 0.100±0.004 grade points higher, which was significant at $p < .001$.

To further explore the differences among the three ethnicity groups with respect to GPA, ethnicity was crosstabulated against GPA. About two-thirds as many AI/AN students report ‘A’s compared to either AI/AN-White or all other students (20.6% versus 32.5% and 34.2%, respectively). Larger percentages of AI/AN students report ‘B’s than either AI/AN-White or all other students (56.6% versus 52.6% and 51.9%, respectively). The same is true for ‘C’s: (21.0%

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versus 14.0% and 13.2%, respectively). Although a larger percentage of AI/AN students report 'D's or 'F's, the percentage is based on 9 students. Thus, the GPA distribution for AI/AN students seems to be shifted downward at each GPA level rather than showing a deficit at a particular letter grade category.

Academic-social context

To explore the academic and social context of AI/AN students compared to that of other students, five dimensions variables were first crosstabulated against ethnicity. Table 3 reports these data. As shown there, four of the five variables had significant chi square values: Enrollment status, Relationship involvement, Current residence, and Paid work participation. However, the effect sizes (*Rho*) of the relationships were uniformly small, ranging from .011 (Enrollment status) to .025 (Relationship involvement). Overall, about 97.3% of students declared a full-time enrollment. Full time enrollment was about 1.6 percentage points lower for AI/AN students. With respect to relationship involvement, higher percentages of both AI/AN and AI/AN-White students reported being in a relationship compared to all other students (about 56.2% and 52.2% versus 46.3%, respectively). In addition, larger percentages of both AI/AN and AI/AN-White students reported living together (about 19.4% and 10.1% versus 6.8%, respectively). Of the 8,008 students who reported living together, the majority (66.2%) reported their marital status as "single" and only 27.2% reported being "married or partnered." Unsurprisingly, a much larger percentage of AI/AN students reported residing in off-campus and non-parental settings (about 43.1%) than either AI/AN-White or all other students (about 33.7% and 30.4%, respectively). Compared to all other students (53.2%), a higher percentage of AI/AN-White students worked (57.6%) but a slightly lower percentage of AI/AN students (51.2%) worked. When either AI/AN-White students or AI/AN students, in particular, worked, they

worked more hours than all other students. Twenty-two percent of AI/AN students and 18% of AI/AN-White students were 20 or more hours per week while only 14% of all other students did so.

Table 4 reports how GPA varied with the academic-social context dimensions examined in this study. All analyses were significant; eta values ranged from .026 (Relationship involvement) to .115 (Volunteer work). Comparisons of the means revealed the following points: a) part-time students reported a lower mean GPA than full-time students. b) Students living together in a relationship reported a lower mean GPA than students either in a relationship but not living together or not in a relationship. c) Students living with parents reported the lowest mean GPA while students living on-campus reported the highest mean GPA. d) Students working 20 or more hours per week reported the lowest mean GPA while students working fewer than 10 hours per week reported the highest GPA. Lastly, e) students doing no volunteer work reported a lower mean GPA than students who participated in volunteer work.

Next, separate equations were examined on how each of the ASC variables were related to GPA and whether each interacted with ethnicity. The final demographic model was the first analyzed, and it included the study contrasts, ethnicity contrasts, and female which had a multiple R of .0787. In overview, each of the academic-social context variables had a significant main effect. Except for Paid work, none of the variables had a significant interaction with ethnicity variables. The results are as follows: 1) Adding Part-time yielded a significant increase in *R* squared [$F(1, 116535) = 457.81$, $p < .001$; $\Delta R^2 = .0038$; $b = -0.262 \pm 0.012$]. 2) Adding the Relationship contrasts (reference was No involvement) yielded a significant increase in *R* squared [$F(2, 116756) = 41.87$, $p < .001$; $\Delta R^2 = .0007$; b(not living together) = 0.011 ± 0.004; b(living together) = -0.064 ± 0.008]. 3) Adding the Residence contrasts (reference was On

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campus) yielded a significant increase in *R* squared [$F(2, 116777) = 524.96$, $p < .001$; $\Delta R^2 = .0089$; *b*(Parents) = -0.160±0.006; *b*(Off-campus) = -0.110±0.004]. 4) Adding the Paid work contrasts (reference was No paid work) yielded a significant increase in *R* squared [$F(3, 116529) = 411.43$, $p < .001$; $\Delta R^2 = .0104$]. In addition, the Paid work by Ethnicity interaction also yielded a significant increase in *R* squared [$F(6, 116524) = 2.25$, $p = .036$; $\Delta R^2 = .0001$. Of the six interaction terms, only the interaction term between Native and working 1-9 hours per week was significant (*b* = -0.229±0.099). Combining the main and interaction effects of Native and 1-9 hours of paid work yielded an effect of *b* = -0.378±0.089. 5) Adding the Volunteer work contrasts (reference was No volunteer work) yielded a significant increase in *R* squared [$F(2, 116100) = 707.95$, $p < .001$; $\Delta R^2 = .0120$; *b*(1-9 hours) = 0.159±0.004; *b*(10 or more hours) = 0.113±0.010].

Lastly, the complete model was tested with all main effects and the ethnicity-paid work interaction. Table 5 shows the results for the analysis with all main effects and the interaction included and it reveals that AI/AN, but not AI/AN-White, students retain a decrement in reported GPA after controlling for academic-social context. Of the significant academic and social context variables, some are associated with an increment in GPA while other are associated with a decrement in GPA. Part-time enrollment, living with parents and living off campus all showed decrements in GPA. On the other hand, any volunteer work, regardless of the hours spent, was associated with an increment in reported GPA for all students. The picture was more complex for paid work. Fewer than ten hours of paid work showed an increment in GPA for all other students; for AI/AN students, that same amount of paid work showed a decrement in GPA. Ten to nineteen hours showed essentially no effect on GPA for all other students but showed an increment in GPA for AI/AN students. On the other hand, twenty or more hours of paid work for

all other students showed a decrement in GPA, but showed a slight increment for AI/AN students. AI/AN-White students showed a small increase in GPA for any level of work less than twenty hours but a decrement for twenty or more hours of work.

Medical Conditions

Table 6 reports the prevalence of the four studied medical conditions (ADHD, chronic illness, learning disability, and psychiatric condition) by ethnic group (Ethnic3). Although the association between ethnicity and each of the conditions except ADHD was significant, the effect sizes (*rho*) of the associations were small, ranging from .006 for ADHD to .016 for Chronic illness. Although both AI/AN and AI/AN-White students reported numerically higher prevalence for all four conditions, a series of logistic regressions found that only the AI/AN-White contrast was significant for Chronic illness ($b = 0.730 \pm 0.137$, $OR = 2.08$), Learning disability ($b = 0.486 \pm 0.144$, $OR = 1.63$), and Psychiatric condition ($b = 0.541 \pm 0.139$, $OR = 1.72$). Also, each of the conditions was significantly related to GPA beyond the .001 level and students with the condition reported a lower mean GPA, except for Chronic illness, which was not significantly related. The eta effect sizes of the relationships were .088 for ADHD, .083 for Learning disability, and .017 for Psychiatric condition.

Next, separate equations were examined regarding how each of the medical condition variables, except for Chronic illness, was related to GPA and whether each interacted with ethnicity. As with the ASC analyses, analysis began with the final demographic model. It was found that 1) adding ADHD yielded a significant increase in *R* squared [$F(1, 116316) = 120.00$, $p < .001$; $\Delta R^2 = .0062$; $b = -0.256 \pm 0.009$]. Although the ethnicity by ADHD interaction contrasts were significant as a group [$F(2, 116313) = 3.19$, $p = .041$; $\Delta R^2 = .0001$], neither of the contrasts were significant and it was elected not to retain the interaction group. 2) Adding the Learning

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disability yielded a significant increase in R squared [$F(1, 116362) = 785.62$, $p < .001$; $\Delta R^2 = .0007$; $b = -0.303 \pm 0.011$]. And, 3) Adding Psychiatric condition yielded a significant increase in R squared [$F(1, 116314) = 49.03$, $p < .001$; $\Delta R^2 = .0004$; $b = -0.075 \pm 0.011$].

Combined Effects

A final model (see Table 7) was estimated, which added the significant medical condition variables to the academic-social context analysis reported in Table 5. The model had a multiple R^2 of .0441 (multiple R = .0778). Of this quantity, an R^2 of .0061 was attributable to demographics, an R^2 of .0278 was attributable to academic-social context variables, and an R^2 of .0103 was attributable to medical conditions. Of the three medical condition variables added, only ADHD and Learning disability remained significant. The effect for ADHD showed that students who reported ADHD had an average GPA decrement of 0.19 grade points and the effect for Learning disability showed a decrement of 0.23 grade points. All other main effects and interactions identified as significant in prior analyses remained significant.

DISCUSSION

The purpose of this paper was to compare the self-reported academic performance of AI/AN undergraduate students with that of students from other ethnic backgrounds and to evaluate whether variation in students' ASC and any identified medical conditions differentially affected AI/AN students. These questions were examined in a secondary analysis of four waves of data from a self-selected sample of US-based colleges and universities. Two analytically usable but numerically small groups of AI/AN students were identified, based on students' responses to a multiple response ethnicity question. One group identified as AI/AN but not White, Hispanic, Asian, or Black and the other group identified as both AI/AN and White. It was discovered that AI/AN students, but not AI/AN-White students, had a decrement in GPA relative

to other students. While female students reported higher GPAs, there was no interaction with ethnicity. And with the exception of one variable, working 1 to 9 hours per week, there was no interaction between ethnicity and any of the variables examined.

One group of variables concerned students' ASC and differences were found between AI/AN and all other students and, to a lesser extent, between AI/AN and AI/AN-White students. However, the differences were small in effect size terms. Nearly 95% of students were enrolled full-time, but full-time enrollment was lower for AI/AN students. A larger percentage of AI/AN students were in a relationship and living with their partners and, naturally, living off-campus. A larger percentage of both AI/AN and AI/AN-White students worked at least twenty hours per week compared with other students. Relationship involvement, residence, and paid work were negatively associated with GPA, but volunteer work, which had roughly equal participation among all three student groups, was positively associated with GPA. The second group of variables concerned medical conditions. AI/AN-White students reported higher prevalence of chronic illness, learning disability, and psychiatric conditions, but not ADHD. And while learning disability, psychiatric conditions and ADHD were related to GPA, there was no evidence that these conditions had a more adverse impact on AI/AN or AI/AN-White students.

To what extent do the variables examined account for the decrement in GPA for AI/AN students? Comparing the unstandardized coefficient for AI/AN students across the three regression analyses shows that the two sets of variables reduced the coefficient by about 7.5%, from -0.240 in the first analysis to -0.222 in the final analysis. Clearly, other, more salient variables remain to be identified.

The ideal behind the ASC is important for students' GPA scores. The boundaries of academic and social activities create a context that promotes success in college. As stated earlier,

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this paper takes the position that a successful ASC is one that best serves the student in relation to academic performance. The factors making up a successful ASC are all important separately and simultaneously occurring. Students who are measured as having positive ASC factors (e.g., enrolled full-time, living on or close to campus, working less than twenty hours, single without children, and volunteer) have higher GPA scores compared to students with a lower ASC. Unfortunately, some students enter college without any control over their current ASC situation. Some students have to work full or part-time. They have an existing family and all of the accompanying responsibilities. Some students are unable to attend college full-time. These factors (i.e., poor ASCs) place them at a disadvantage and are related to GPA scores.

The ASC condition varied among different students in this sample. Students who identified as being solely AI/ANs had a poorer ASC, which is reflected in their lower GPA scores. For reasons unknown, AI/ANs students are entering college within a context that lowers their ability to focus exclusively on being a student. While an AI/AN student's ASC factor is important, it does not account for all of the differences in GPA scores. An important factor, or number of factors, remains unaccounted for in these findings.

A factor that is not captured in these data which has been shown to impact GPA scores as well as retention rates is the feeling of belongingness. Students who feel like they belong in college usually remain and have higher GPA scores (Walton & Cohen, 2011). The cyclical effects of having a higher GPA score resulting from getting higher course grades, would in turn boost academic self-esteem. Given the ample evidence that minority students feel like they do not belong in academic settings (Steele, Spencer, & Aronson, 2002) the benefit of doing well and feeling connected is undoubtedly significant.

It is crucial to continue to investigate the factors related to the low academic success rate for AI/ANs and other underrepresented minorities. This study suggests that a student's academic social context (ASC) impacts their GPA and overall success rates. However, there are factors that remain excluded from the context that do not fully illuminate the method and model of academic success. For AI/AN students, an important factor that should be included is a measure of college belongingness. Other important factors were not collected or included in this dataset which might account for GPA differences, but fortunately, this study does provide the guidance that the student's ASC does impact GPA scores. A good ASC is associated with higher GPA, which in turn, leads to other positive academic outcomes.

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Table 1
Demographics by Sample and Total

Demographic Variable	Fall, 2008 (N = 18,375)	Spring, 2009 (N = 58,091)	Fall, 2009 (N = 21,023)	Fall, 2010 (N = 19,941)	Total (N = 117,430)	Effect Size
Female	69.82%	65.42%	65.76%	65.68%	66.21%	.033
Undergraduate year in school						.051
1st year	33.93	28.07	33.65	36.27	31.38	
2nd year	20.18	24.65	21.72	22.88	23.13	
3rd year	23.10	23.19	20.67	21.84	22.50	
4th year	18.20	18.91	17.38	14.33	17.75	
5th year or more	4.59	5.17	6.58	4.67	5.25	
White, non-Hispanic	79.22	79.28	76.73	68.97	77.05	.090
Black, non-Hispanic	6.63	5.06	6.38	7.82	6.01	.044
Hispanic/Latino	8.60	6.36	6.54	10.48	7.43	.060
Asian/Pacific Islander	9.30	8.77	9.82	13.18	9.80	.053
American Indian	1.71	1.24	2.25	2.24	1.66	.036
Bi/Multi-Racial	4.25	3.61	3.36	3.80	3.69	.014
Other	2.88	2.26	2.10	2.34	2.34	.015
Cumulative GPA						*Rho* = .023
A	36.04	33.67	32.96	34.78	34.10	*Eta* = .031
B	52.40	51.45	53.26	51.36	51.91	
C	10.97	14.00	13.27	12.98	13.22	
D/F	0.59	0.88	0.51	0.88	0.77	

Note. Multiple race/ethnic category selections allowed. All cross tabulations are significant at $p < .001$. Effect size is rho.

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Table 2
Cumulative GPA by Ethnicity Category and Gender (N = 116,992)

Gender		AI/AN	AI/AN-White	All Else	Total
Male	N	147	298	39063	39508
	Mean	2.95	3.14	3.13	3.13
	SD	0.719	0.722	0.699	0.699
Female	N	344	637	76503	77484
	Mean	2.97	3.18	3.23	3.23
	SD	0.691	0.670	0.672	0.672
Total	N	491	935	115566	116992
	Mean	2.96	3.17	3.19	3.19
	SD	0.699	0.687	0.683	0.683

Table 3
Academic-Social Context by Ethnicity Category Crosstabulations (N = 116,992)

Setting Variable	All else N = 114692-115362	AI/AN N = 486-490	AI/AN-White N = 928-935	Total N = 116539-116786	Effect Size (Rho)
Full-time enrollment**	97.30%	94.65%	97.21%	97.29%	.011
Relationship involvement***					.025
Not in a relationship	53.74%	43.76%	47.81%	53.65%	
In relationship, not living together	39.52%	36.81%	42.14%	39.53%	
In relationship, living together	6.75%	19.43%	10.05%	6.83%	
Current Residence***					.014
On-campus	55.14%	42.04%	52.36	55.06%	
Parents	14.44%	14.90%	13.92	14.44%	
Other	30.42%	43.06%	33.73	30.50%	
Paid Work***					.015
None	46.84%	48.78%	42.43%	46.81%	
1-9 hrs.	19.33%	11.84%	17.40%	19.29%	
10-19 hrs.	19.45%	17.14%	22.34%	19.47%	
20+ hrs.	14.37%	22.24%	17.83%	14.44%	
Volunteer Work					.006
None	62.96%	63.19%	60.99%	62.95%	
1-9 hrs.	33.02%	31.29%	33.73%	33.02%	
10+ hrs.	4.02%	5.52%	5.28%	4.03%	

Note. *$p < .05$; **$p < .01$; ***$p < .001$.

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Table 4
GPA by Academic-Social Context

Variable	N	Mean	SD	Eta
Enrollment status				0.063
Full-time	113806	3.20	0.680	
Part-time/Other	3169	2.93	0.743	
Relationship involvement				0.026
Not in a relationship	62896	3.19	0.688	
In relationship, not living together	46292	3.21	0.673	
In relationship, living together	8008	3.14	0.697	
Current residence				0.096
On-campus	64550	3.25	0.671	
Parents	16916	3.09	0.711	
Other	35751	3.14	0.681	
Paid work				0.104
None	54746	3.20	0.683	
1-9 hrs.	22571	3.29	0.660	
10-19 hrs.	22783	3.20	0.676	
20+ hrs.	16870	3.05	0.697	
Volunteer work				0.115
None	73339	3.13	0.691	
1-9 hrs.	38486	3.30	0.654	
10+ hrs.	4707	3.25	0.679	

Note. All ANOVAs were significant at $p < .001$.

Table 5
Results of Regression of GPA on Demographic and Academic-Social Context Variables (N = 115,017).

Variable	B±SE	Beta
(Constant)	3.152±0.007	
Study Wave 2	-0.045±0.006	-.033***
Study Wave 3	-0.029±0.007	-.016***
Study Wave 4	-0.028±0.007	-.015***
AI/AN	-0.231±0.044	-.022***
AI/AN-White	-0.019±0.034	-.002
Female	0.084±0.004	.058***
Part-time	-0.180±0.012	-.043***
Not living together	0.023±0.004	.017***
Living together	0.016±0.009	.006
Live with parents	-0.117±0.006	-.060***
Live off-campus	-0.080±0.005	-.054***
Work 1-9 hours	0.080±0.005	.046***
Work 10-19 hours	0.004±0.005	.002
Work 20+ hours	-0.102±0.006	-.053***
Volunteer 1-9 hours	0.149±0.004	.102***
Volunteer 10+ hours	0.122±0.010	.035***
AI/AN--Work 1-9 hours	-0.235±0.100	-.008*
AI/AN--Work 10-19 hours	0.092±0.086	.004
AI/AN--Work 20+ hours	0.125±0.079	.005
AI/AN-White--Work 1-9 hours	-0.029±0.063	-.002
AI/AN-White--Work 10-19 hours	0.031±0.058	.002
AI/AN-White--Work 20+ hours	-0.055±0.063	-.003

Note. *$p < .05$; **$p < .01$; ***$p < .001$.

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Table 6
Prevalence of Medical Condition by Ethnicity

	All else N = 114900-115009	AI/AN N = 489-490	AI/AN-White N = 933-935	Total N = 116323-116431	Effect Size (Rho)
ADHD	5.37%	6.94%	6.43%	5.39%	.006
Chronic illness***	3.10%	3.27%	6.22%	3.12%	.016
Learning disability**	3.49%	4.29%	5.56%	3.51%	.010
Psychiatric condition***	3.58%	3.90%	6.00%	3.61%	.012

Note. *$p < .05$; **$p < .01$; ***$p < .001$.

Table 7
Results of Regression of GPA on Demographic, Academic-Social Context Variables, and Medical Conditions (N = 113,810).

Variable	B±SE	Beta
(Constant)	3.177±0.007	
Study Wave 2	-0.044±0.006	-.032***
Study Wave 3	-0.029±0.007	-.016***
Study Wave 4	-0.026±0.007	-.014***
AI/AN	-0.222±0.044	-.021***
AI/AN-White	-0.014±0.034	-.002
Female	0.078±0.004	.054***
Part-time	-0.168±0.012	-.040***
Not living together	0.021±0.004	.015***
Living together	0.018±0.009	.007
Live with parents	-0.119±0.006	-.061***
Live off-campus	-0.079±0.005	-.053***
Work 1-9 hours	0.077±0.005	.045***
Work 10-19 hours	-0.001±0.005	.000
Work 20+ hours	-0.105±0.006	-.054***
Volunteer 1-9 hours	0.148±0.004	.102***
Volunteer 10+ hours	0.126±0.010	.036***
AI/AN--Work 1-9 hours	-0.227±0.099	-.007*
AI/AN--Work 10-19 hours	0.096±0.086	.004
AI/AN--Work 20+ hours	0.109±0.079	.005
AI/AN-White--Work 1-9 hours	-0.017±0.063	-.001
AI/AN-White--Work 10-19 hours	0.035±0.058	.002
AI/AN-White--Work 20+ hours	-0.048±0.063	-.003
ADHD	-0.186±0.009	-.061***
Learning disability	-0.234±0.011	-.063***
Psychiatric condition	-0.014±0.011	-.004

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