The relationship between college experience and academic performance among minority students

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Introduction

A number of factors have been identified as important to the retention and success of minority students in American higher education. Perhaps the best-known conceptualization of student retention is Tinto’s (1993) theory of university departure, which identifies academic and social integration as the two most important factors in the retention of college students. Academic integration includes such variables as grade point average, perceived intellectual development, and perceived faculty concern for teaching and students. Social integration includes such variables as self-esteem, extent and quality of relationships with peers, and quality of informal interactions with faculty. According to Tinto (1993), these variables are especially important for minority students who face greater risks of dropping out of college than their European American counterparts.

There is also considerable research about student academic and interactive behaviors in the learning environment that correspond to Tinto’s (1993) concepts of academic and social integration. The use of effective study habits has been associated with academic integration and university retention (Heath et al., 1991), with high-achieving students more likely to use effective strategies than their low-achieving counterparts (Stoynoff, 1996). Effective strategies may include: rehearsal strategies, including highlighting or underlining passages in texts; review strategies in preparation for exams, such as rereading texts and notes and reviewing main points from lecture notes; record keeping strategies, including taking notes or tape recording lectures; and transformation strategies to write essays, such as developing a thesis statement, outlining, and composing drafts.

Another important aspect of academic integration is contact with faculty and fellow students. Faculty members set high expectations and standards for all students' performance in their classes, which in turn may increase students' motivation to excel (Rowser, 1994). Interaction with faculty outside of class is also an important aspect of social integration. Faculty, in their role as mentors, act as gatekeepers to help students succeed (Redmond, 1990). Thus, the inaccessibility of faculty may have a negative impact on student retention; students who have difficulty getting their questions answered are more likely to drop out (Johnson, 1997). Students' relationships with fellow students, like those with faculty, also foster social integration and academic success. Peers can directly assist one another by acting as peer mentors and sources of academic information (Stoynoff, 1996). Fellow students may provide anything from advice on course selection to access to lecture notes and previous examinations. Contact with other diligent students can also positively affect study behavior (Griffin, 1991). Consequently, friendships can perform a positive role in assisting in student success (Fisher and Hartmann, 1995).

In residential campuses, living in student dormitories is one primary way of making friends with fellow students (Tinto, 1975). On a commuter campus, there are fewer opportunities to form friendships. Consequently, such activities as eating at the campus food court or participating in study groups in the library are some of the activities that students may use to form friendships with peers. Social integration can also occur in the form

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Abstract

A number of factors have been identified as important to the retention and success of minority students in American higher education. Foremost among these factors are college experience variables like academic integration and social integration. The purpose of this study was to model the relationship between college experience and academic performance for minority students enrolled in an American institution of higher learning. Using structural equation modeling techniques, a model of the college experience consistent with past research was proposed and tested. The results provide support for the proposed model. Implications of the findings for improving research and practice in the field of educational management are outlined.
of attending campus performances, whether of sports activities or fine arts events. These also constitute opportunities to become involved in campus life and to cultivate friendships with other students.

Participation in campus organizations and volunteer work is another way to promote social integration on campus and student retention, although many students do not participate in campus activities (Bennett and Okinaka, 1990; McCannon and Bennett, 1996). A lack of time, particularly for students with heavy work schedules, often influences their ability or willingness to participate in campus organizations (McCannon and Bennett, 1996). In some cases, although minority students have reported the importance of participating in on-campus organizations, they feel unwelcome by members of other ethnic groups and become unwilling to participate (Fisher and Hartmann, 1995).

Informal social circles are yet another aspect of social integration. Negative impressions of other students can increase the likelihood of freshmen dropping out (McGrath and Braunstein, 1997). In situations where students, particularly minority students, feel uncomfortable with the social atmosphere at largely European American campuses, they are likely to experience a sense of isolation or alienation (Bennett and Okinaka, 1990). Many students feel as if they do not “fit in” on campus (Hurtado, 1994). In some cases, students choose to associate primarily with students from a similar ethnic or racial background to provide security and racial identity (Dorsey and Jackson, 1995). The importance of positive interaction with other students is so great that personal attributes may be less important than how individuals are treated by peers (Zea et al., 1997). Many students also rely on an established support system of family members and outside friends to facilitate their success in college (Canabal, 1995a; Hood, 1992; Lango, 1995; Lopez, 1995), although, in some cases, these friends are not university graduates (D’Augelli and Hershberger, 1989).

Connectivity to campus services and offices has also been found to contribute to students’ academic and social integration. In a recent study by Junn et al. (1995), minority students rated the level of staff service lower for almost half of the offices, indicating a lower level of satisfaction with services than European American students. Because faculty members now do less student advisement than in past years, students must depend more for academic assistance on non-faculty personnel (Wagener and Lazerson, 1995). Many minority students cite a need for assistance in such subjects as study skills, math skills, and time management, assistance that is frequently provided by non-faculty university personnel (Rowser, 1997).

Although Tinto’s (1983) model focused primarily on university factors, a number of additional variables were cited as important in the retention of college students. Among them are intrapersonal variables based upon students’ intentions or goals and commitments to the university and a number of background variables. Foremost among the background variables are the highest grade level completed by parents, parental financial support, and the number of hours employed per week. Success and retention at the university are also positively related to self knowledge, including realistic goals and intentions (Rowser, 1994). Students are more likely to obtain good grades and persist academically if they realistically believe their efforts will be successful and will lead to vocational success (Pringle, 1995). In contrast, college students who are over-optimistic in their projections of academic achievement may perceive themselves as failures if they do not meet their academic goals (Rowser, 1994). Other students may overreact to academic setbacks with the belief that their academic difficulties are out of their control and resistant to change (McKean, 1994; Perry et al., 1993). Consequently, minority students' goals and intentions may change over the course of their college career to reflect more realistic or pessimistic attitudes. Freshmen who report optimistic intentions for success may become upperclassmen who view themselves as university “survivors” (Bennett and Okinaka, 1990; Hood, 1992). Nevertheless, realistic self knowledge of one’s capacities and abilities is believed to be a key to success (Fuertes et al., 1994).

Another aspect of students’ college experience that affects their self knowledge is their sense of self-efficacy, or their belief that they can organize cognitive, behavioral, and social skills to achieve desired objectives (Bandura, 1986). When applied to college students, self-efficacy involves confidence in the ability to perform course-related tasks, maintain harmonious relationships with room mates, and have rewarding social interactions with others (Solberg et al., 1993). Self-efficacy is related to the willingness to undertake challenging tasks, persistence at tasks, and successful performance (Harrison et al., 1997). According to Rodriguez (1996), academic self-efficacy is especially important for minority student success. Student health and stress can also positively or adversely affect students’ academic and social integration. Test anxiety has been shown to be a source of stress for
low-achieving students of lower socioeconomic status (Sapp et al., 1995). Other important sources of stress are financial concerns and the constraints on time presented by the need to carry heavy work schedules. A type of stress specific to minority students is acculturative stress, defined as the stress occurring when members of one culture make changes in behavior and values to adapt to another culture. Minority students from middle income, educated families may not experience high levels of acculturative stress (Vasquez and Garcia-Vasquez, 1995; Young et al., 1994). In contrast, students from lower income or working class families may find adaptation to the culture of the university more stressful (Young et al., 1994). Finally, a significant source of stress for minority students that crosses ethnic, racial, and economic backgrounds and is believed to play a key role in students’ intention to leave the university is racial tension, discrimination, and harassment (Bennett and Okinaka, 1990; D’Augelli and Hershberger, 1993; Delucchi and Do, 1996; Fisher and Hartmann, 1995; Fuertes et al., 1994; Heath et al., 1991; Hurtado, 1994; Lopez, 1995; Zea et al., 1997).

There is no doubt that all of the above mentioned aspects of academic and social integration help to shape students’ commitment to their university. Students with less positive attitudes toward their university are more likely to depart, and minority students, for a number of reasons, often have less positive attitudes toward their university (D’Augelli and Hershberger, 1993; Zea et al., 1997). Consequently, it is important to understand student attitudes toward aspects of university life to be able to identify institutional modifications which may facilitate students’ academic and social integration into the university (Francis et al., 1993).

The purpose of this study was to model the relationship between college experience and academic performance for minority students enrolled in American institutions of higher learning. Using structural equation modeling techniques, a model of the college experience consistent with past research was proposed and tested. We believe the research methodology used in this study represents an initial step to develop or extend theories that can explain why some students outperform others. The remainder of the paper is divided into four sections. The first section presents a conceptualization of the model used to examine the effects of various aspects of the college experience on academic performance. The second section focuses on the data gathering methods and provides a description of a novel program for fostering the retention of college students called “The education equity program”. The next section provides the results. The final section discusses the implications of the results for improving practice in educational management.

### Testing a model of college experience

Figure 1 presents our proposed theoretical model of college experience. The outcome of interest is scholastic grade point average (GPA). The proposed model posits the existence of several variables which together comprise various aspects of college experience that, in concert, are believed to influence GPA. The variables included in this model of the college experience are organized below according to our interpretation of the current literature on the topic.

### College experience

There are 13 variables that are considered indicators of college experience. These include:

1. **Father’s education.** The highest education level attained by a student’s father.
2. **Self understanding.** The degree to which a student reports self knowledge, a concept which subsumes a variety of personal characteristics, including the strength or clarity of a student’s self concept and a rational yet positive self-appraisal of ability or performance.
3. **Friendships with students of different backgrounds.** The degree to which a student reports making friends with students from different socioeconomic backgrounds, heritages, and/or national origin.
4. **Adequacy of financial resources.** The degree to which a student reports the availability of adequate funding to attend college.
5. **Practical applications of course work outside of college.** The degree to which a student reports the ability and opportunity to apply concepts and information studied in courses to work and social situations outside of the university.
6. **Talk with professor about a course.** The degree to which a student reports talking with professors about coursework in conversations which often occur immediately before and after class or during office hours.
7. **Advice from friend about academic problems.** The degree to which a student reports soliciting advice from friends about academic difficulties.
8. **Participation in campus life.** The degree to which a student reports involvement in or
Method

Subjects
Each year a small group of at-risk undergraduate students are selectively assigned to an educational equity program to receive special counseling, faculty and peer mentoring, a semester course on adjustment to university life, and a range of social activities which foster a sense of social community. The educational equity program at California State University, Fullerton is dedicated to fostering the retention of students at risk for college failure. These students, of different ethnic groups and races, enter the university while lacking one or more courses usually necessary for admission to the undergraduate program. Unlike students who qualify for the campus’ educational opportunity program, these students do not require financial aid. A number of elements of the program are involved in fostering social and academic integration. Academic integration is fostered by providing students with study skills in the University 100 course and by assigning students faculty mentors able to assist with academic difficulties. Social integration is provided by peer group discussions in the University 100 class, by assigning peer mentors, and by encouraging faculty mentors and students to become involved in nonacademic activities together. Stress is addressed in the University 100 class to better enable students to cope with college life.

A total of 89 students actively participated in the program during the 1996-97 academic year. Complete and usable assessment questionnaire data were available from 30 students (representing 34 percent of the total group) at the close of the spring semester. Nearly two-thirds of the program participants were completing their second year of university studies, while the remainder were finishing their freshman year.

Figure 1
Proposed model of the relationship between college experience and academic performance

V1
V2
V3
V4
V5
V6
V7
V8
V9
V10
V11
V12
V13

College Experience

GPA
Since most distinctions between the two subgroups were very slight (i.e. those with complete and usable questionnaires versus those without), background attributes are discussed for the participants as a whole. Virtually all the participants were unmarried and were living at home with parents and siblings. As with so many other students attending urban universities in the USA, most were employed to finance transportation and at least part of their educational cost. Not surprisingly, the sophomores were more likely to hold jobs and work longer hours than the first-year students (a median of 24 versus 16.5 hours).

One-quarter of the participants were 18 years old while the remainder were 19 or 20 years old. The students were 56.7 percent of Latino or Hispanic heritage, 20 percent of Filipino heritage, 10 percent of African-American heritage, and the remaining percentage a mixture of other groups. Given their ages, it is not surprising to learn that the educational equity students’ dependency on their families for economic support was far greater than any reciprocal contribution to the family’s economic well-being; 57 percent received half or more of the necessary college funds from their respective families. Conversely, 69 percent reported that they supplied “very little” or “none” of the family financial need. Finally, contrary to the widely held belief that participants in these types of programs generally represent the first from their families to attend a university, almost two-thirds of the students’ parents had completed at least some collegiate study or had university degrees. Thus, while the participants may be classified as “at risk” because of deficiencies in high school performance or placement test scores, they did have immediate family role models who understood the complexities and demands of university life.

Questionnaires
Multiple observed indicators were used to measure all of the variables included in the model as prescribed in the literature (e.g. Harris and Schaubroek, 1990). In addition to collecting academic performance information, a student satisfaction rating, and demographic data, all subjects completed adapted versions of the occupational stress indicator, a student stress inventory, and the college student experiences questionnaire (see Sadri et al., 1996; Sadri and Marcoulides, 1997). The final 93-item questionnaire was designed to be comprehensive in scope and took approximately 40 minutes to complete.

Analysis and results
Structural equation modeling (SEM) techniques are considered today to be a major component of applied multivariate analyses (Marcoulides and Schumacker, 1996). A structural model can be viewed as a guide that allows one to determine the relative strength of each variable included in explaining a desired set of outcomes. In its broadest sense, SEM is concerned with testing complex models of functional relationships between observed variables and latent variables. The functional relationships are described by parameters that indicate the magnitude of the effect (either direct or indirect) that independent variables have on dependent variables. The proposed model in this study was tested using the LISREL VIII computer program (Jöreskog and Sörbom, 1993).

Table I presents the LISREL parameter estimates of the proposed model. These parameter estimates are indices that represent the simultaneous contribution of each observed and latent variable to the overall model. While these estimates provide important information about the relationship of college experience to GPA, they do not provide any indication of the assessment of the fit of the hypothesized model to the actual data. Since we posited an a priori defined model to be tested, our primary interest is in the model fit. Once the model fit is determined, the significance of the various parameter estimates can be ascertained. Without a significant model fit, however, we would have to consider alternative models.

Table II presents the criteria describing the overall fit of the model. Assessment of fit can be determined by the goodness-of-fit index (GFI) and the comparative fit index (CFI). It is generally recognized that values above 0.90 indicate a good model fit. For this model the GFI is 0.94 and the CFI is 0.96, which indicate a reasonably good model fit. These indices are measures of the relative amount of variance and covariance in the data accounted for by the model under examination. In contrast, the root mean square (RMS) residual and the root mean square error of approximation (RMSEA) are measures of the average unexplained variances and covariances in the model. These indices should be close to zero if the model fits the data well. For this model, the RMS is 0.08 and the RMSEA is 0.07, indicating that very few of the variances and covariances are left unexplained. Finally, parameter estimates with t-ratios that are greater than 2 are considered to provide evidence that the parameter is significantly different from zero and important to the proposed model. The estimates of
the direct and indirect effects between variables in the model were tested through $t$ ratios (the ratio of the estimate to its standard error), and all were found to be significant ($p < 0.01$). Given the variety of tests that were used to assess the fit of the model, we would consider that the proposed model fairly accurately accounts for the variability observed in the data.

**Discussion**

A model about the relationship between college experience and scholastic grade point average was proposed in this study. As indicated above, the variables included in the model encompass variables associated with Tinto’s (1987, 1993) concepts of background variables, academic integration, and social integration. This section examines the degree to which our results are consistent with previous research findings and offers some thoughts on the implications of these findings for improving research and practice in the field of educational management.

**Background variables**

Higher levels of a father’s education, greater self-understanding, and adequate financial resources were background variables found to be associated with higher GPA. A higher level of parental education has been directly and indirectly associated with academic success in a number of previous studies. For example, Vazquez and Garcia-Vazquez (1995) and Young et al. (1994) found that higher levels of parental education were directly associated with higher GPAs for Latino students and African-American students. A number of aspects of self-understanding have also been associated with academic success in previous studies. For example, in a study of successful African-American students, Dorsey and Jackson (1995) reported strong self-concepts as the key ingredient for academic success and persistence in college. Similarly, studies of freshman Mexican-American students with strong academic self-concepts reported higher GPAs (Rodriguez, 1996), while studies of Asian students (Fuertes et al., 1994) with strong and realistic self-concepts were more likely to persist in college. Interestingly, some researchers believe so strongly in the importance of self-understanding that increasing self-understanding is a primary goal of many college retention programs (Dale and Zych, 1996).

Having adequate funds to attend college without extensive financial worries is also a variable strongly associated with academic achievement and persistence in previous studies. For example, McGrath and Braunstein (1997) found that receiving financial aid predicted students’ GPA. In a study of several retention programs throughout the USA, over half of the students who left the university indicated that insufficient funds were the cause (Chaney et al., 1998). Although low family income may not directly decrease some students’ persistence in college, student persistence in school and academic achievement can be adversely affected by a heavy workload (Canabal, 1995b; Di, 1996). Cabrera et al. (1992) and Taylor and Olswang (1997) also found that greater availability of financial resources indirectly facilitates students’ social integration by allowing them to allocate larger amounts of time to campus social activities.

**Academic integration**

Practical applications of course work outside of college, talking with a professor about a course, and positive experience with the educational equity program were academic integration variables associated with higher GPA. The practical application of course work to situations outside of college may be a positive factor in students’ GPA for a number of reasons. Students who are able to apply course work to their work setting perceive immediate value in their scholastic pursuits and may be more motivated to achieve in school. Similarly, students who talk with professors about their courses appear to

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**Table I**

Parameter estimates for proposed model

<table>
<thead>
<tr>
<th>Variable</th>
<th>Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>VAR1 Father’s education</td>
<td>0.21</td>
</tr>
<tr>
<td>VAR2 Self understanding</td>
<td>0.76</td>
</tr>
<tr>
<td>VAR3 Friendships with students of different backgrounds</td>
<td>0.71</td>
</tr>
<tr>
<td>VAR4 Adequacy of financial resources</td>
<td>0.93</td>
</tr>
<tr>
<td>VAR5 Make practical applications</td>
<td>0.46</td>
</tr>
<tr>
<td>VAR6 Talk with professor about a course</td>
<td>0.39</td>
</tr>
<tr>
<td>VAR7 Advice from friend about academic probation</td>
<td>0.23</td>
</tr>
<tr>
<td>VAR8 Participate in campus life</td>
<td>0.50</td>
</tr>
<tr>
<td>VAR9 Scanning notices of campus events</td>
<td>0.65</td>
</tr>
<tr>
<td>VAR10 Attendance at athletic events</td>
<td>0.64</td>
</tr>
<tr>
<td>VAR11 Use of the library for quiet studying</td>
<td>0.60</td>
</tr>
<tr>
<td>VAR12 Attend campus events in fine arts</td>
<td>0.90</td>
</tr>
<tr>
<td>VAR13 Positive experience with educational equity program</td>
<td>0.73</td>
</tr>
<tr>
<td>College experience -- grade point average (GPA)</td>
<td>0.40</td>
</tr>
</tbody>
</table>

**Table II**

Measures of model fit

| Goodness of fit index (GFI)  | 0.94 |
| Comparative fit index (CFI)  | 0.96 |
| Root mean square residual (RMR) | 0.08 |
| Root mean square error of approximation (RMSEA) | 0.07 |
obtain direct and indirect benefits from their interaction. Perhaps students’ perception of faculty members has an important effect on their overall academic and social experience of a university campus. The use of the library for quiet studying also provides a variety of benefits. Perhaps because many freshmen and sophomores live with their parents, use of the library appears to provide them with a quiet place for uninterrupted study periods. Without the use of the library, some students may find it difficult to find optimal conditions for study. Use of the library for studying also increases students’ time on campus and increases their opportunity to interact with peers during study breaks, a potential benefit in increased social integration.

Social integration

Social integration variables associated with higher GPA encompass a variety of activities and behaviors, including friendships with students of different economic or social backgrounds, advice from friends about academic problems, participation in campus life, scanning notices of campus events, attendance at athletic events, attendance at fine arts events on campus, and positive experience with the educational equity program.

Friendships with students from different backgrounds or countries on a highly diverse campus provide exposure to a variety of values and perspectives as well as ensuring that students do not confine their acquaintanceships to a limited and homogeneous circle of friends. A number of researchers (Fisher and Hartmann, 1985; Hurtado and Carter, 1997; Taylor and Olswang, 1995) have cited the fact that students, particularly minority students, often emphasize the importance of socializing with students of other cultures. Similarly, students’ positive impressions of other students on campus can be an important factor in social integration, contributing to their social effort (Davis and Murrell, 1983) or college persistence (McGrath and Braunstein, 1987).

Soliciting advice from a friend about academic problems, although an aspect of social integration, is also beneficial to the student’s academic integration on campus. Seeking assistance from peers or support personnel signals a student’s willingness to seek assistance and help in resolving academic difficulties, increasing the probability of a successful resolution.

Participation in campus life subsumes a variety of behaviors and activities as well as measuring a student’s global perception of his or her social integration. A variety of campus factors can contribute to a student’s sense of community on a college campus, also described as a sense of belonging, being needed, and sharing common values (Lounsbury and DeNeui, 1995). On campuses where prejudice is so great that social segregation occurs (Fisher and Hartmann, 1985), some students, particularly African-Americans, may cope by making friends predominantly with members of the same racial group and avoiding participation in groups dominated by European Americans. Although these students are able to effectively establish social ties with supportive peers, they may be limited in their participation in the campus life as a whole (Fisher and Hartmann, 1995; Gossett et al., 1998; James, 1998). Participation in campus life in general, as well as attendance at specific events, may serve as an indication of a student’s degree of comfort with the campus social climate.

Scanning notices of upcoming events is a little-studied aspect of social integration. Nevertheless, by scanning notices of upcoming events, students indicate an interest in participating in campus activities and may be more likely to attend campus events. Attendance at athletic events includes participation in or attendance at spectator sports. Because virtually all athletic events on campus include school athletes and teams, attendance may indicate not only an interest in the sports activities of the university but social integration with the university (Schurr et al., 1993). Athletic events also provide opportunities for school friends to socialize outside of class, another aspect of social integration. Interestingly, some previous studies (e.g. Chaney et al., 1998; Schurr et al., 1993) have found that participants or spectators in campus recreation or sports were more likely to persist in college than nonparticipants or attendees. Thus, attendance at all types of campus events indicates social integration with the campus because it provides excellent opportunities for students to socialize outside of classes. A positive experience with participating in the educational equity program also includes aspects of social integration and positive benefits for student retention. In particular, having students enrolled together in an instructional course was perceived to encourage social integration through the formation of friendships (see also Chaney et al., 1998).

Based on the variables examined in this study, a portrait of an academically successful student emerges. The academically successful student has a moderate family socioeconomic and educational background, possesses a high level of self understanding, is assertive in seeking assistance from faculty, staff, and other students, applies course work to other aspects of life, and is
socially active by scanning and participating in a variety of campus events.

Despite the important findings which emerged from this study, there are some problems with the present research. First, it is difficult to generalize the present findings to samples outside of the USA and future research needs to test our model with samples drawn from other countries. Second, we have presented a model of college experience and sampled only from a small group of at-risk students. Consequently, generalizing the observed results to other groups of students may also be problematic. Finally, the majority of our measures are self-report indices and this increases the possibility of bias in our findings. As such, any future research on models of this nature should try to include more behavioral indices. Nevertheless, the results presented in this study represent an initial step toward describing and evaluating important aspects of the academic experience. Expanding on this beginning will be a profitable goal for future research.

References


