Investigating Factors Related to Retention of At-risk College Students

Marcia L. Laskey and Carole J. Hetzel
Cardinal Stritch University

Abstract

The purpose of this study was to investigate the factors that influence the retention and GPA of students in a college program designed for at-risk students. The study was conducted at a midsized private university in the Midwest. The sample consisted of 115 at-risk students enrolled in a Conditional Acceptance Program (CAP). Three years of CAP student data were collected. The study included variables of personality as measured by the NEO-FFI Inventory, high school and college GPA, ACT scores, the number of visits to the tutoring service, high school profile, and the demographic characteristics of student gender and ethnicity. The results indicated that tutoring and personality factors of at-risk students have a positive influence on their retention and college GPA. These findings inform institutions of higher education of the factors that contribute to the success of at-risk students, preparing them to serve this population.

Introduction

Students from varying backgrounds with different academic abilities are being admitted into institutions of higher learning (Laskey, 2004). This results in an influx of diverse students who may not have the skills or the persistence to be successful at the college level. Bryd and MacDonald (2005) report that approximately one-third of all entering college students in the United States need remediation. According to McCabe, "41 percent of entering community college students, and 29 percent of all entering college students are under prepared in at least one of the basic skills (reading, writing, mathematics" (as cited in Fike and Fike, 2007, p. 2). Moreover, it has been estimated that over two million U.S. college students take developmental courses at their colleges or universities (Saxon, Sullivan, Boylan, & Forrest, 2005).

Students who enter college under prepared are often considered at-risk students. At-risk students may have difficulties other than lack of basic

skills. For example, at-risk students may lack the motivation to pursue a college degree. They may also lack soft skills needed to be successful (i.e., attending class, maintaining concentration, using effective study strategies and using social skills necessary to ask questions); they also lack the personality traits needed to enhance scholarly pursuits (Chris, Daigle, & Windy, 2007). Pascarella and Terenzini (1983) connected these student factors to the student's level of commitment to attending and graduating college.

The current study was conducted at a midsized, private, four-year university located in the Midwest. Admission requirements at the university are an ACT composite score of 20 and a high school GPA of 2.0. Students who do not meet the standard admission requirements can apply for admission through a one-year Conditional Acceptance Program (CAP). The CAP program was designed to give those students who have the potential for success the opportunity to be admitted under special circumstances. The requirements for the CAP program are an ACT composite score of at least a 16, a score at or above the cut off in reading and English on the university's placement test, a writing sample that indicates basic writing proficiency, and an interview in which the student demonstrates a potential for success. In the first semester of the CAP program, students are required to meet with a tutor once a week, attend weekly meetings with a small peer group, and take developmental courses, including both College Reading and College Study Strategies. A pre-college math and developmental English course may be required for those who need skill-building in these areas.

CAP students also take a Freshman Year Experience course designed for CAP students, as well as a 100- level freshman psychology course. In the second semester, CAP students are allowed to take up to 12 credits of regular college courses. At the end of the first year, students who have maintained a GPA of 2.0 or above are admitted to the university under regular admission. Those who have not maintained a 2.0 GPA are academically dismissed from the university. The students have the opportunity to appeal the dismissal decision. If they are not readmitted, they can reapply after successful coursework at a two-year technical or community college.

Given the research findings (Chamorrow-Premuzic, Furnham, & Ackerman, 2006; Phillips, Abraham, & Bond, 2003) on the relationship between personality factors and academic achievement, CAP students are also given the Five Factor Inventory (NEO-FFI) (Costa & McCrae, 1992). The NEO-FFI is a self-report inventory measuring the following five personality factors:

1. Neuroticism, the tendency to experience psychological distress
2. Extraversion, the tendency towards sociability, activity, and positive emotions of joy and pleasure
3. Openness, the openness to new experiences
4. Agreeableness, the tendency to be trusting, sympathetic, and cooperative;
5. Conscientiousness, the tendency to be scrupulous, well organized, and diligent.

Literature Review

Identifying profiles of successful versus non-successful at-risk students enables institutions of higher education to expand services—academic, personal, and social—that could bolster weak profiles, thus enhancing student successes and retention in college. Researchers have investigated both traditional academic skills of students (e.g., analytical, didactic, critical thinking abilities), as well as non-cognitive components such as personality and motivation (Scepansky & Bjornsen, 2003). The NEO-FFI five-factor personality model has been used to determine the non-cognitive attributes related to student success (Costa & McCrae, 1992). Certain NEO-FFI factors have demonstrated repeated correlation to academic achievement and success. In fact, the use of such non-cognitive attributes has been somewhat more predictive in determining success among students than academic measures alone (Chamorrow-Premuzic, Furnham, & Ackerman, 2006). Similarly, such measures have explained more of the variance in success of students with dissimilar profiles than academic measures and comparisons alone (Phillips, Abraham, & Bond, 2003).

The effect of the five factor variables in relationship to academic success has had varying research results (Ridgell & Lounsbury, 2004). However, the factor of conscientiousness has been consistently and clearly established as a positive correlate to academic success (Chamorrow-Premuzic et al., 2006; Kelly & Johnson, 2005; Lounsbury et al., 2003; Phillips et al., 2003; Scepancy & Bjornsen, 2003). In a meta-analysis study conducted by Trapmann, Hell, Hirn, & Schuler (2007), conscientiousness emerged as a valid and reliable predictor of academic success, with extraversion, openness to experience, and agreeableness as indicators of success in certain subject matters related to certain occupations (Trapmann et al., 2007). Conscientiousness seems a logical correlate to achievement because of its composite qualities involving organization, care in work, efficiency, and dependability. In addition to personality characteristics, Dollinger, Matyja, & Huber (2008) noted the importance of academic skill profiles (such as verbal ability measured by standardized aptitude tests and past academic performance) in evaluating student successes, specifically performance on exams.

Research has also shown that academic support services are critical for the success of students who may be unprepared for college level work (Tinto, 1999). Rheinheimer and Mann (2000) noted that " . . . academic support services can help underprepared or at-risk students not only catch up to but, in some cases, surpass their better prepared counterparts" (p. 10).

One of the support services offered to assist students in building their skills is developmental courses (courses designed to help students learn reading and study strategies). For example, developmental math and reading courses are designed to build academic skills by reviewing basic concepts that students need to comprehend higher order concepts.

Another important component of support programs is tutoring. Tutoring has been found to play an important role in at-risk students' academic success (i.e., grades), course completion, and graduation (Hodges, 2001). For tutoring to be successful, students must attend tutoring on a regular

basis. Hodges found that tutoring was not effective when students' rate of attendance was low or students started late in the semester. Rheinheimer and Mann (2000) found that gender has an effect on tutoring outcomes, as does ethnicity. In their study, Asian Americans received the highest grades as a result of tutoring, followed by Caucasian students, with African American students having the lowest grades in their classes despite tutoring. According to Amenkienan & Kogan (2004), " . . . all types of students regardless of their entry credentials benefit from the use of academic support services" (p. 523). For example, in their study of engineering students, Amenkienan & Kogan found that use of academic support services had a positive effect on students' academic achievement. They also found that there were differences based on gender, ethnicity, and GPA. One finding was that participants with lower GPAs and White male students were less likely to utilize tutorial services than other students.

The seminal retention theory and research of Tinto (1987) cautions against identifying individual student factors, such as personality, that can set students apart from one another and create a "successful – unsuccessful" cadre of student populations. In so doing, students may bear the brunt of the problem for their lack of success, rather than holding the institution equally responsible. Tinto writes of creating an institutional climate of caring and belonging, which has a universal mission of educating, supporting, and retaining its students. It is our belief that the process of investigating students' demographic, academic, and nonacademic factors such as personality does not preclude the development of a learning community, but rather it also fits within it in providing support and feedback to students in an integrated and comprehensive way.

A productive learning environment involves establishing and communicating student expectations and providing meaningful feedback to students (Tinto, 1987). By identifying students who may have insufficient skill levels or personality factors not readily conducive to self-motivated work (i.e., low conscientiousness), institutions can develop and direct a learning environment for all students. As Boylan (2009) aptly noted, "Postsecondary institutions must serve the students they have, not those they wish they had" (p. 20).

Purpose of the Study

The purpose of this study was to identify the factors influencing the success of college at-risk students. For this study academic success was defined as a college GPA of at least 2.0 and retention at the university for one year or more. The factors studied were students' personality profiles as measured by the NEO-FFI Inventory, high school GPA, and ACT scores. The demographic characteristics of gender; ethnicity; type of high school (private/public); location of high school attended (rural/urban/suburban); and finally the utilization of tutoring services at the college were also studied.

Research Questions

1. How do personality factors of neuroticism, extraversion, openness, agreeableness, and conscientiousness affect college GPA and retention of at-risk college students?

2. Do high school GPA and/ or ACT scores predict college success?

3. Do high school type (public/private) and/or location (rural/urban/ suburban) affect retention and college GPA of at-risk students?

4. Do academic support/ tutoring positively affect college GPA and retention of at-risk students?

Methods

Data were collected over three consecutive years from students participating in the CAP program. For the purpose of this study, data were extracted from student records. Data included demographic information (gender, ethnicity), the number of times the student participated in a tutoring session, ACT scores, and high school and college GPAs. Data were coded and entered into an Excel® spreadsheet and then analyzed using SPSS PC® version 17.0.2. Descriptive statistics of frequencies, percents, means and standard deviations were computed. T-tests and chi-square statistics were calculated to compare groups. Bivariate correlations and regression analysis were performed to examine relationships between variables.

Instruments

NEO-FFI

The NEO-FFI is a shortened version of the NEO PI-RI, consisting of 60 self-report items measuring the five personality domains of neuroticism, extraversion, openness, agreeableness, and conscientiousness (Costa & McCrae, 1992). The NEO-FFI uses a five point Likert-type scale from 1 (strongly disagree) to 5 (strongly agree) regarding responses such as "I am not a worrier," to "I rarely feel lonely or blue." Respondents are asked to indicate the extent they exhibit behaviors that are associated with the five personality factors. Higher scores indicate a greater propensity for the domain.

The NEO-PI has demonstrated convergent and discriminant validity (McCrae & John, 1992). The NEO-PI-R also reports acceptable reliability in terms of internal consistency and test-retest reliability (Dollinger & Orf, 1991). Cronbach alphas (a measure of internal consistency) for the five personality domains ranges from .56 to .83. Test-retest reliability for the five scales ranges from 0.66 to 0.92 (Costa & McCrae, 1992).

Domains of the NEO-FFI	Cronbach α
Agreeableness	.562
Openness	.628
Neuroticism	.832
Conscientiousness	.815
Extraversion	.745

Results

Demographics

The sample consisted of 115 traditional age (17-19 year old) undergraduate students admitted to the university in the CAP program designed for at-risk students. The majority (63.3%, n=73) of the sample was female. In this study there was no significant difference in retention based on gender. Seventy-three percent of the females were retained as compared to 66.7 % of the males ($X2$ =.517, df =1, p=.472). The largest group in the sample was Black (42.6%, n=49); thirty-nine percent (n=45) was White; the remainder were Asian, Hispanic, and Biracial, which is representative of the university's population. For the purpose of analysis, two groups were formed, Black and Other. There was no significant difference in retention of the CAP students based on ethnicity. Sixty-nine percent of both ethnic groups (Black and Non-Black) were retained ($X2$ =.001, df =1, p=.971). Students enrolled in the CAP program had attended private schools (14.2%, n=16), suburban schools (38.9%, n=44) and urban schools (46.9%, n=53). There was no significant difference in retention rate based on type of school ($X2$ =.312, df =2, p=.856).

Personality

As a group, the personality characteristic scoring the highest was conscientiousness, followed by agreeableness, extraversion, openness, and finally neuroticism (see Table 1).

Table 1: Descriptive Statistics of Personality Characteristics of CAP students

Personality Traits	Mean	SD
Neuroticism	15.65	5.37
Openness	27.69	4.86
Extraversion	32.99	4.55
Agreeableness	36.01	4.75
Conscientious	37.47	5.77

The domains of the NEO-FFI were significantly correlated to each other (see Table 2). Correlations were calculated to examine the relationships between the personality traits. There were significant positive correlations between agreeableness, conscientiousness, openness, and extraversion. As the students scored higher on agreeableness, conscientiousness, openness, and extraversion increased. Neuroticism was inversely correlated with agreeableness, openness, and conscientiousness. That is, students who scored higher on neuroticism scored lower on agreeableness, openness, and conscientiousness (see Table 2).

Table 2: Correlation Matrix of Personality Traits

	Extraversion	Openness	Agreeableness	Conscientiousness
Neuroticism	-0.17	-0.27**	-0.22*	-0.24*
Extraversion		0.37**	0.28**	0.01
Openness			0.25**	0.02
Agreeableness				0.34**

** p<.01 * p<.05

Neuroticism

There was positive correlation between neuroticism and high school GPA (r =.199, p=.036); students admitted with a higher high school GPA scored higher on neuroticism. Females scored significantly higher in neuroticism (M=16.7, SD=5.51, n=69) than males (M=13.9, SD=4.71, n=42) [t (109) =2.67, p=.009].

Conscientiousness

There was a positive correlation between conscientiousness and the number of visits to the tutoring center (r =.496, p = .043). Conscientiousness was significantly correlated with college GPA (r =.236, p = .016). The more conscientious the student, the more likely he or she was to utilize tutoring services and to achieve a higher GPA.

Agreeableness

The higher the agreeableness score, the more likely students were to utilize tutoring services (r =.215, p=.026).

Extraversion

White participants were more extraverted (M=34.7, SD=31.8, n=46) than non-Whites (M=31.8, SD=4.48, n=65) [t=3.49, (109) p=.001]. This result is slightly different result from the Black/ Non-Black group designations used above.

Tutoring

There was an inverse relationship between the students' ACT scores and the utilization of tutoring services (r = -.197, p=.044). Of the 115 students participating in the CAP program, 76 (66%) were retained. These students utilized the required tutoring services significantly more often (M=16.1, SD=6.39, n=76) than those not retained (M=9.35, SD=5.96, n=35) [t=5.27 (109) p<.0005]. The higher the students' high school GPA, the more likely they were to utilize tutoring services (r =.198, p=.040).

A stepwise linear regression was performed to identify the factors contributing to the students' GPA. The first variable to enter the equation was tutoring (B=.357), which explained 12.8% of the variance, followed by conscientiousness, which explained an additional 5% (B=.224). The measures of neuroticism, extroversion, agreeableness, and openness did not enter the equation (F =10.54, p <.0005).

GPA/ACT

There was no significant difference in high school GPA (t=.059, (110) p=.953) or the ACT score (t=.345, (110) p=.731) of retained students. Gender and ethnicity were not contributing factors to retention or college GPA. However, females admitted to the CAP program had higher high school GPAs (M=2.59, SD= .50, n=42) than males (M=2.33, SD=.44, n=42) [t =2.82, d(110), p=.008]. There was no difference in ACT scores based on gender (t = .364,(110) p=.006).

Discussion

The findings of this study contribute to the body of research providing information about the influence of personality characteristics on retention and GPA in an at-risk population. A discussion of the study results follows:

1. *How do personality factors affect GPA and retention of at-risk college students?*

When considering the variables that enhance the academic pursuits of at-risk students in higher education, the influences of personality factors were extremely interesting. Certain personality factors are helpful in predicting the success or non success of at-risk students' GPAs and retention (Dollinger et al., 2008). In this study, the attribute of extraversion was inversely related to both retention and college GPA. Students scoring higher in extraversion were less likely to be retained. Students who were high in extraversion tended to be very social and, often times, were more concerned with socializing than focusing on academics; although these patterns were not statistically significant, they were noteworthy as a pattern.

There was a positive correlation between the personality traits of both conscientiousness and agreeableness with the utilization of tutoring services. Students who scored high in conscientiousness and agreeableness were more likely to seek tutoring than students who were low in these personality factors. Students who were high in conscientiousness and agreeableness positively accepted direction from adults and utilized tutorial services more frequently. For that reason, at-risk students who are conscientious and agreeable tend to be retained and achieve higher college GPAs. Conversely, at-risk students who were low in conscientiousness needed more support and encouragement to utilize these services. Cultivating conscientiousness through time management techniques and study strategies might help students ask for and seek the help they need to succeed academically.

Neuroticism had a positive relationship to college GPA. Students scoring higher in neuroticism might do better in school because they are worried about overall success. Females tending to be higher in neuroticism had better retention and higher GPAs than males.

2. *Does high school GPA/ACT predict college success?*

Students' high school GPA was not a good predictor of college success for the students in the CAP program. The data collected in this study may differ from other studies because most studies investigating the effect of GPA/ACT on college success and retention do not survey at-risk students but, instead,

use the GPA/ACT of psychology students who are not at-risk. Additionally, high school GPA may not be a good predictor of success for both at-risk and non at-risk students because of differences between schools, teacher expectations, and student performance.

Similarly in this study, ACT scores were not a predictor of college achievement or retention. Achievement on the ACTs can differ due to students' test taking ability, reading skills, and prior preparation for the test. Students who tend to read at a slower pace will often not do as well as students who read more quickly. Some students feel the pressure of a timed test and experience anxiety, which also can lead to lower scores on the ACT (Musch& Broder, 1999). The work that students achieve in the classroom may be more indicative of their skills rather than a one-time measurement of ability. Students' ACT scores serve as an indicator of academic ability, but without other data including classroom performance, ACT scores cannot be considered the prime predictor of success.

3. *Is there an association between demographic characteristics (gender/ethnicity), high school profile (urban/suburban, public/ private) and retention of at-risk students?*

Study data did not support the contention that gender, ethnicity, and high school profile affect the retention or college GPA of at-risk students entering higher education. Although only 39% of the CAP students in the study were white, ethnicity did not make a difference in the achievement of the at-risk students. This challenges the bias that students with ethnic backgrounds do not often do as well as their White counterparts. In this study, urban and public school students achieved at the same level as those from non-public schools. One reason for this result could be that because of their skill level, even at-risk students in competitive high schools may be unable to take full advantage of academically rigorous programs and courses, making their academic preparation somewhat similar to at-risk students in less competitive schools.

4. *Does academic support /tutoring positively affect retention of at-risk students?*

Tutoring has a positive effect on at-risk students' retention and GPA. CAP students who were retained utilized tutoring services significantly more than students who were not retained. When students came to tutoring on a regular basis—at least once a week—they received higher grades, which, in turn, led to achievement in their classes and, invariably, to their retention. Students receiving tutoring have the advantage of being able to have the content of their classes clarified by tutors because information needed is presented to them in a different context. When students are tutored on a one-to-one basis, they can ask questions when they don't understand the material or the assignment. Although students can meet with their instructors to ask questions, they often feel more comfortable asking a tutor since the tutor has no influence on their grades. Studies with various student populations have revealed that tutoring can have a positive impact on the retention of students (Hodges, 2001; Higgins, 2004). Developing relationships with peers, tutors, and faculty often improves student retention (Potts & Schultz, 2008). Not only can tutoring assist at-risk students with academic help, but it can also lead to a relationship between tutor and student. Heisserer and

Parette (2002) noted the importance of this relationship between students and college advisors. The larger point is that creating a connection between students and university personnel—whether they be student mentors, faculty members, support personnel, or academic tutors—communicates to students a sense of caring and belonging, which, in turn, can enhance student self-efficacy, confidence, and an overall ability to do well in school (Tinto, 1999). In relationship to retention, when students feel they can be successful in their academic pursuits, they are more likely to stay in school. It therefore behooves institutions of higher education to provide tutoring services for their at-risk students.

Limitations

The findings of this study should be generalized with caution. The sample consisted of students in a private university in an urban setting; sample size was small. Moreover, two thirds of students in the CAP program were retained. Although this is good news overall, it made for a small percentage and a small sample size of non-retained students. Additionally, the NEO-FFI personality inventory is a self-report survey which can produce distorted answers and inaccuracies due to participant bias. Students may have responded the way they thought they should or how they thought the surveyor wanted them to respond. Finally, students sometimes have low intrapersonal awareness; that is, they may think they are conscientious and open to new experiences, but, in actuality, they are not.

Recommendations

The implications of this study are that the future of higher education will include more at-risk students, suggesting that there needs to be programs in place to serve these students. Since tutoring was such an important component of success for the students in this study, it is imperative that colleges and universities provide places/centers where students can obtain help with their content areas, reading and writing skills, time management strategies, and organizational skills. Developmental courses will also have to be part of the curriculum so that at-risk students can build their academic skills to a higher level of critical and analytical thinking. If colleges and universities do not address the needs of at-risk students, the chances for retaining these types of students will be minimal. Additionally, universities must have adequate information to make good admission decisions. In place of traditional assessment measures such as high school ACT and GPA, schools of higher education need to include writing samples, in-house assessment tools, interviews, and portfolio data in the student evaluation process.

Suggestions for future research

It is vital that research related to the success of at-risk students continues. It is clear that additional research should expand the information found in this study. Research on faculty and peer relationships should be studied because it appears that tutoring serves more than an academic function; it also plays an important part of building relationships that lead to improved retention.

Conclusion

Data from this study revealed that tutoring services affect retention of at-risk students in a college conditional acceptance program. It is the responsibility of institutions of higher education to continue to provide and expand support services, especially given the trend of underprepared college freshman, and to create a climate in which degree completion can become a reality for a wider array of students.

References

Amenkienan, C.A., & Kogan, L.R. (2004). Engineering students' perceptions of academic activities and support services: Factors that influence their academic performance. *College Student Journal, 38*, 523-540.

Boylan, H.R. (2009). Targeted intervention for development education students (T.I.D.E.S.) *Journal of Developmental Education, 32*(3), 14-23.

Byrd, K. L., & MacDonald, G. (2005). Defining college readiness from the inside out: First-generation college student perspectives. *Community College Review, 33*(1), 22-30.

Chamorrow-Premuzic, T., Furnham, A., & Ackerman, P.L. (2006). Incremental validity of the typical intellectual engagement scale as predictor of different academic performance measures. *Journal of Personality Assessment, 87*, 261-268.

Chris, R.K., Daigle, S., & Windy, R. (2007). Learning problems reported by college students: Are they using learning strategies? J*ournal of Instructional Psychology, 34*(4), 191-199.

Costa, P.T., & McCrae, R.R. (1992). *NEO PI-R Professional Manual*. Odessa, FL: Psychological Assessment Resources.

Dollinger, S.J., Matyja, A.M., & Huber, J.L. (2008). Which factors best account for academic success: Those which college students can control or those they cannot? *Journal of Research in Personality, 42*, 872-885.

Dollinger, S.J., & Orf, L.A. (1991). Personality and performance in "Personality": Conscientiousness and openness. *Journal of Research in Personality, 25*, 276-284.

Fike, D.S., & Fike, R. (2007). Does faculty employment status impact developmental mathematics outcomes? *Journal of Developmental Education, 31*(1), 2-11.

Heisserer, D.L., & Parette, P. (2002). Advising at-risk students in college and university settings. *College Student Journal, 36*(1), 69-83.

Higgins, B. (2004). Relationship between retention and peer tutoring for at-risk students. *Journal of Nursing Education, 43*, 319-321.

Hodges, R. (2001). Encouraging high-risk student participation in tutoring and supplemental instruction. *Journal of Developmental Education, 24*(3), 2-8.

Kelly, W.E., & Johnson, J.L. (2005). Time use efficiency and the five-factor model of personality. *Education, 125*, 511-514.

Laskey, M.L. (2004). *Assessing the influence of self-efficacy, meta-cognition, and personality traits on at-risk college students' academic performance and persistence* (Doctoral Dissertation). Retrieved from Pro Quest. (ATT3151957).

Lounsbury, J.W., Sundstrom, E., Loveland, J.M., & Gibson, L.W. (2003). Intelligence, 'Big Five' personality traits, and work drive as predictors of course grade. *Personality and Individual Differences, 35*, 1231-1239.

McCrae, R.R., & John, O.P. (1992). An introduction to the five-factor model and its application. *Journal of Psychology, 60*, 175-215.

Musch, J., & Broder, A. (1999). Test anxiety versus academic skills: A comparison of two alternative models for predicting performance in a statistics exam. *British Journal of Educational Psychology, 69*, 105-116.

Pascarella, E.T., & Terenzini, P.T. (1983). Predicting freshman year persistence/withdrawal behavior in a residential university: A path analytic validation of Tinto's model. *Journal of Educational Psychology, 75*(2), 215-226.

Phillips, P., Abraham, C., & Bond, R. (2003). Personality, cognition, and university students' examination performance. *European Journal of Personality, 17*, 435-448.

Potts, G., & Schultz, B. (2008). The freshman seminar and academic success of at-risk students. *College Student Journal, 42*, 647-658.

Rheinheimer, D.C., & Mann, A. (2000). Gender matching, floor effects, and other tutoring outcomes. *Journal of Developmental Education, 24*, 10-15.

Ridgell, S.D. & Lounsbury, J.W. (2004). Predicting academic success: General intelligence, "Big Five" personality traits, and work drive. *College Student Journal, 38*, 607-612.

Saxon, D.P., Sullivan, M., Boylan, H, & Forrest, D. (2005). Developmental education facts, figures, and resources. *Research in Developmental Education, 19*(4), 1-4).

Scepansky, J.A., & Bjornsen, C.A. (2003). Educational orientation, NEO-PI-R personality traits, and plans for graduate school. *College Student Journal, 37*, 574-582.

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

Tinto, V. (1999). Taking student retention seriously: Rethinking the first year of college. *National Academic Advising Association Journal, 19*(2), 5-9.

Trapmann, S., Hell, B., Hirn, J-O.W., & Schuler, H. (2007). Meta-analysis of the relationship between the Big Five and academic success at university. *Journal of Psychology, 215*, 132-151.