

Development of a Freshman Orientation Survey to Improve Student Retention

Jennifer L. Brown

Columbus State University

Email: brown_jennifer2@columbusstate.edu

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Abstract

With growing concerns over high education accountability and diminishing resources, student retention rates and the reasons why students remain at a post-secondary institution continue to persist. Since the 1960s, researchers have examined cognitive and non-cognitive factors that impact whether or not students stay at a particular post-secondary institution until graduation. The purpose of this study was to develop the Freshman Orientation Survey to improve student retention. Using the constructs which were presented in peer-reviewed literature along with a peer-review process within the College, a survey instrument was developed to examine pre-college enrollment characteristics for a College within a 4-year state university in the Southeastern United States. The instrument was piloted with alumni from the college, and the psychometric properties of the instrument were determined. In addition, the response data from the pilot participants established a baseline of data for the cognitive and noncognitive factors.

Development of a Freshman Orientation Survey to Improve Student Retention

A national movement exists to “increase the proportion of Americans with high-quality degrees and credentials to 60% by 2025” (Lumina Foundation for Education, 2009, p. 2). After analyzing the freshman cohort data from 2003 through 2009, which was gathered from Institutional Research, one out of every three students, who designated a major within the College, were lost to attrition every year in an exponential decay model, and the College graduated only one quarter of the initial cohort (Brown, 2011). These findings revealed that the College is well below the 60% targeted level established by the Lumina Foundation (Lumina Foundation for Education, 2009). In addition, the Higher Education Act may use graduate rates to determine institutional effectiveness (Fike & Fike, 2008). According to Tinto (2006), the process of student persistence at a four-year institution differs from the process at a large scale university, where the majority of the research in this area has occurred. Thus, it is essential to examine student retention rates within the College and the various factors that might contribute to those student retention rates.

With diminishing resources, there has been an emphasis placed on student retention at the post-secondary level. Many states are translating this emphasis into accountability measures for higher education (Tinto, 2006). When examining student retention, a common practice is to predict student retention status or cumulative grade average, which typically involves cognitive and noncognitive factors. With cognitive factors, there exists an overwhelming amount of empirical studies that have found high school grade point averages and standardized aptitude scores (Harackiewicz, Barron, Tauer, & Elliott, 2002; Murtaugh, Burns, & Schuster, 1999; Willingham, Lewis, Morgan, & Ramist, 1990) were significant predictors of academic success at the post-secondary level. Spady (1971) found that high school experiences was a significant

predictor of grade performance with university undergraduate students. Likewise, Astin, Korn, and Green (1987) used the Cooperative Institutional Research Program at the University of California at Los Angeles along with student retention follow-up data. Astin and his colleagues found that high school grade point average and standardized admission test scores were the strongest two predictors of student retention. For students who entered college with an “A” (3.50 to 4.00) grade point average, they were seven times more likely to graduate within 4 years compared to those students who entered with a “C” (1.50 to 2.50). For those students with high standardized test scores, they were six times as likely to graduate within 4 years compared to those students with low test scores. In a more recent study, Tross, Harper, Osher, and Kneidinger (2000) found similar findings.

Other studies had found that parents’ education, occupation, and income levels were significant predictors of student retention (Hossler & Stage, 1999; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996). According to Tinto (2006), there has been a noticeable increase in the number of low socio-economic students who attend 2-year and 4-year institutions. In a study with community college students in Texas, Fike and Fike (2008) found that receiving financial aid had a moderate relationship with student retention. In addition, this financial aid variable was a statistically significant predictor of whether the students returned to college for the sophomore year. These findings confirmed the previous findings of Wessel, Bell, McPherson, Costello, and Jones (2006), who conducted their study with university undergraduate students.

Beyond individual aptitude, parent education level, and financial aid, the pre-college enrollment expectations of undergraduate students have a major impact on whether those students will stay or leave an institution (Tinto, 2006). For example, the purpose of education can have a positive impact whether the students persist at the institution until graduation (Tinto,

1975, 1993, 1997). Tinto believed the students who persisted in college had different reasons for attending college compared to those students who did not persist. For example, students who attended college to seek more vocational training tended to leave the institution unsuccessful compared to those students who attend college in order to gain more knowledge or prepare for a professional career (as cited in McCubbin, 2003). Using the Tinto Student Integration Model (1975), institutional commitment factors, such as reasons for attending a specific institution, can impact whether students persist at the institution until graduation. Spady (1971) found that institutional commitment was a statistically significant predicting variable for explaining the variance in first-year retention with undergraduate students. In a study conducted at Ball State University, Woosley and Miller (2009) found that institutional commitment had a positive impact on student retention and overall grade average.

The Tinto Model (1975) also included goal and environmental commitment factors, such as place of residence while attending college and highest degree sought, that could impact whether students persist at the institution until graduation. In addition, establishing relationships among peers and faculty can contribute to satisfaction with the institution, first-year persistence, grade performance, and graduation rates (Spady, 1971; Terenzini & Pascarella, 1978). In a longitudinal study with undergraduate students at Syracuse University, Terenzini and Pascarella (1978) found a statistically significant difference between stayers and leavers with pre-college enrollment expectations of nonacademic life. More specifically, faculty interactions and positive perceptions of the academic program can account for nearly 9% of the student's attrition status. For those students who live at home and commute to college, the only opportunity to develop these relationships with peers and faculty members occurs when the students are in the classroom. These classroom interactions and pedagogical practices can enhance student

retention. Thus, other aspects of the college experience should be examined when studying student persistence (Tinto, 2006).

In addition to the commitment factors, the non-cognitive characteristics of students can have a positive impact on student retention in higher education. More specifically, Stupnisky et al. (2007), DeAngelis (2003), and Garton, Dyer, and King (2000) found that perceived control, academic self-concept, time management, and learning styles significantly contributed to academic success, respectively. In a study conducted by Kitsantas, Winsler, and Huie (2008), the investigators administered a questionnaire that measured learning motivation and self-regulation to 243 first-semester freshman students at a large mid-Atlantic university. The researchers found motivation and self-regulation accounted for 10% of the variance in first-year college grade point average. In the prediction model, time management and self-efficacy were unique predictors of first-year grade point average. Similarly, George and his fellow colleagues (2008) used a time diary and questionnaire with university undergraduate students to determine the predictors of academic success. They found that clearly defined goals and time-management skills were the strongest noncognitive predictors of cumulative grade point average.

It is difficult to determine how these individual noncognitive aspects impact the student with given archival data. An institution typically gathers information regarding parents' education, household income level, and the students' high school grade point average and standardized aptitude scores during the admission and financial aid process. The institution does not collect data on a regular basis regarding the noncognitive factors, such as commitment factors and student expectations of academic and social integration, which Terenzini and Pascarella (1978) and DeAngelis (2003) found to have a significant impact on student persistence. Based on such findings, these constructs warrant further examination.

According to Murtaugh et al. (1999), the factors that specifically affect student persistence at an institution can be determined by developing and implementing survey measures that are specific to that institution. Research indicates that college students usually decide to drop-out of college at the end of their freshman year (Noel, Levitz, & Saluri, 1985), which means interventions must occur during the freshman college year to be the most effective. Many people in higher education feel that the root causes of attrition derive from the admission of less qualified students, but the successful student retention derives from successful student education. Further research needs to be conducted in order to examine the nature of student experiences at 4-year institutions (Tinto, 2006). The purpose of this study was to develop the Freshman Orientation Survey, pilot it with alumni from the College, and to determine the psychometric properties of the instrument. In addition, the response data from the pilot participants established a baseline of data for the cognitive and noncognitive factors that affect student retention.

Methods

Target Population

The College is part of a 4-year institution in the southeastern United States that is considered a master's level school. Enrollment at the state university has increased over the past five years and has reached a maximum of 8,307 in the fall of 2011. Within the College, there are three departments which serve undergraduate students: School of Nursing, Teacher Education, and Health, Physical Education, and Exercise Science. In addition, the Department of Teacher Education collaborates with other colleges on the state university campus to offer teacher certification in various content areas. There is an average of 241 freshman students in each fall semester cohort.

Development Procedures

The development process was broken into four phases: Item Development, Peer Review, Pilot, and Data Analysis. At each of these phases, the survey instrument was amended based on the feedback from that phase.

Phase 1. The survey items were based on Tinto's Student Integration Model (1975), post-secondary task force reports, existing survey instruments, and significant variables listed in the peer-reviewed literature. The post-secondary task force reports that were reviewed included the University of Arkansas and the University System of Georgia, which this institution belongs. Existing survey instruments were reviewed, which included Cooperative Institutional Research Program (CIRP) Freshman Survey, Mississippi State University Profile of the American College Student Study, and Bowling Green State University Undergraduate Experiences Questionnaire.

Phase 2. After item development, the instrument was reviewed by the Dean of the College and presented to the Executive Council, which includes all department chairs. The Executive Council received a hard copy and electronic copy via email to review and offer feedback. Four members submitted feedback. The following revisions were based on the feedback: (1) aligned racial classifications with US Census classifications, (2) clarified urban, suburban, small town, and rural with population numbers, (3) deleted high school rank item, (4) defined primary occupation with specific examples for those individuals who might not know the jargon, (5) aligned highest level of education with Free Application for Federal Student Aid (FAFSA), and (6) added writing to areas of needed assistance. After the peer review process with the Executive Council, the instrument was determined to have face validity.

Phase 3. The survey was created using an online survey application, Qualtrics, which is available through the institution's Technology Department. The Researcher requested email

addresses from the alumni association database for all graduates of the College. In the alumni database, 10,235 alumni were listed, but 72 requested no emails, and 8,310 did not list an email address. A total of 1,853 emails were received from the Database Manager at the Office of Advancement Services. After removing duplications, 1,846 emails were initially sent. Four invitations to participate were distributed via email. Six days after the initial email invitation, the participants received a second email to remind them to complete the survey. A third invitation was sent 11 days after the second email. Seven days after the third invitation was sent, the participants received a fourth email that served as the final reminder to complete the survey. If the participants choose to complete the pilot survey, then they had the option to enter their name in a drawing for \$100 cash prize at the end of the survey.

Of those 1,846 emails, 46 email invitations were returned undeliverable, which leaves a total of 1,800 email invitations. Of those potential respondents, 107 participants responded to the survey, which yielded a 5.9% response rate; however, when considering only the email invitations, which had documented delivery, there was a 45.5% response rate. Since the email database was obtained from the alumni association, it is likely that many of the available emails were inactive.

Of the 107 respondents, 92 participants were considered valid cases without missing data. The participants included 16 (17.4%) males and 76 (82.65) females. The racial classification included 68 (73.9%) Whites, 21 (22.8%) Blacks, 2 (2.2%) Hispanics, and 1 (1.1%) multiracial. Slightly more than 78% of the participants entered the freshman year with a single relationship status. The remaining participants were married, separated, or divorced.

The majority of the participants indicated their undergraduate degree majors as Early Childhood Education, Fine Arts Education, and Nursing, which relatively compared to current

enrollment trends at the College. Table 1 displays the frequency and percentage of undergraduate degree majors. The year of completion for the undergraduate degree ranged from 1966 to 2010, with a median of 1995. Eighty (87.0%) of the participants earned their undergraduate degree from the state university. Of the remaining 12, five of the participants graduated from other institutions within the same state university system.

Table 1

Frequency and Percentage of Undergraduate Degree Majors

Degree Major	<i>n</i>
Early Childhood Education	19 (20.7%)
Fine Arts Education	10 (10.9%)
Health and Physical Education	4 (4.3%)
Middle Grades Education	7 (7.6%)
Special Education	1 (1.1%)
Secondary Education	12 (13.1%)
Exercise Science	4 (4.3%)
Health Science	6 (6.5%)
Nursing	22 (23.9%)
Other	7 (7.6%)
Total	92 (100%)

Phase 4. The Freshman Orientation Survey contained 62 items. Of these 62 items, 13 items were used for demographic data and descriptive baseline data. The items within the pilot survey were divided into 10 scales. Survey revisions included the deletion of eight items based on no relationships with other scale items and low corrected item-total correlation coefficients.

Of the remaining 54 items, 25 items were Likert-type questions. One item asked participants to rate eight reasons according to the level of importance on a scale of 1 (Not Important) to 4 (Extremely Important). Five items asked the participants to rate the level of agreement on a scale of 1 (Strongly Disagree) to 4 (Strongly Agree). Eleven items asked the participants to rate the frequency of events on a scale of 1 (Never) to 4 (Always). Eight items asked the respondents to rate the likelihood of occurrence on a scale of 1 (Extremely Unlikely) to 4 (Extremely Likely).

To determine the convergent validity of the items within each scale, the items were analyzed to determine the strength of the relationship among the scale items and to determine if the scales provided internally consistent measurements. A bivariate correlation using the Pearson Product Moment Correlation was conducted with the items within a scale to determine the strength of the relationship. The criterion established for correlation coefficients was .10 as weak, .30 as moderate, and .50 as strong according to Jacob Cohen (Meyers, Gamst, & Guarino, 2006). Reliability analysis was conducted to determine if the items within a scale provided an internally consistent measurement. A Cronbach's alpha of .50 or greater was established as the criterion for reliability (Thorndike, 1951). To determine item discrimination within each scale, a correlation was conducted between the item score and scale score, referred to as Corrected Item-Total Correlation. The criterion established was greater than .30 (Nunnally & Bernstein, 1994).

Individual Aptitude. Individual Aptitude Scale included six items. The scale measured the student's high school grade point average, highest SAT Math and Critical Reading Scores, and the highest ACT Composite, Math, and English Scores. For the students who only took either the SAT or ACT only, the mean scores were substituted for missing data so all cases would be included in the analysis. The correlation coefficients ranged from .053 to .797. Based on Cohen's guidelines, the six items had a weak to strong relationship with each other. Some

items had little to no relationship with the some of the other items. One possible explanation could be that some of the participants commented at the end of the pilot survey that they had difficulty remembering the information from their high school years. Table 2 displays the correlation matrix for Individual Aptitude.

Table 2

Correlations for the Items Within the Individual Aptitude Scale

Item	1	2	3	4	5	6
1. Q9r	--	.233*	.119	.131	.154	.053
2. Q11r	.233*	--	.568**	.228*	.187	.166
3. Q14r	.119	.568**	--	.198	.147	.204
4. Q15r	.131	.228*	.198	--	.715**	.640**
5. Q16r	.154	.187	.147	.715**	--	.797**
6. Q17r	.053	.166	.204	.640**	.797**	--

Note: r indicates recoding of original response data; * indicates $p < .05$; ** $p < .001$.

The alpha coefficient for the Individual Aptitude Scale was .670. The corrected item-total correlation coefficients ranged from .208 to .518 and indicated that these items had a moderate to strong relationship with the scale. The alpha coefficients if deleted ranged from .594 to .693 and did not vary from the scale's alpha coefficient of .670. The results suggest that this scale within the survey is an internally consistent measure. The scale scores ranged from 2.17 to 4.50, with a mean of 3.60 and standard deviation of 0.45. Table 3 displays the corrected item-total correlation coefficients for each item and alpha coefficients if the item was deleted.

Family Attributes. The Family Attributes Scale included five items. The scale measured the primary occupation of the student's father and mother, the highest level of education for the student's father and mother, and the best estimate of the parents' household income. The correlation coefficients ranged from .244 to .725. Based on Cohen's guidelines, the five items

had a moderate to strong relationship with each other. Table 4 displays the correlation matrix for Family Attributes.

Table 3

Corrected Item-Total Correlation and Alpha Coefficients for the Individual Aptitude Scale

Item	Corrected Item-Total Correlation Coefficient	Alpha Coefficient if Deleted
Q9r	.208	.693
Q11r	.490	.594
Q14r	.417	.639
Q15r	.518	.619
Q16r	.494	.604
Q17r	.479	.616

Note: r indicates recoding of original response data.

Table 4

Correlations for the Items Within the Family Attributes Scale

Item	1	2	3	4	5
1. Q29r	--	.725**	.467**	.264*	.607**
2. Q44r	.725**	--	.341**	.244*	.570**
3. Q30r	.467**	.341**	--	.622**	.443**
4. Q52r	.264*	.244*	.622**	--	.246*
5. Q33	.607**	.570**	.443**	.246*	--

Note: r indicates recoding of original response data; * $p < .05$; ** $p < .001$.

The alpha coefficient for the Family Attributes Scale was .692. The corrected item-total correlation coefficients ranged from .367 to .695 and indicated that these items had a moderate to strong relationship with the scale. The alpha coefficients if deleted ranged from .582 to .759 and were close to the scale's alpha coefficient of .692. The results suggest that this scale within the survey is an internally consistent measure. The scale scores ranged from 1.60 to 6.00, with a

mean of 3.76 and a standard deviation of 0.97. Table 5 displays the corrected item-total correlation coefficients for each item and alpha coefficients if the item was deleted.

Table 5

Corrected Item-Total Correlation and Alpha Coefficients for the Family Attributes Scale

Item	Corrected Item-Total Correlation Coefficient	Alpha Coefficient if Deleted
Q29r	.695	.582
Q44r	.644	.619
Q30r	.576	.635
Q52r	.367	.680
Q33	.613	.759

Note: r indicates recoding of original response data.

Financial Commitment. The Financial Commitment Scale included three items. The scale measured the amount of financial support, how concerned the student may be about paying for college, and the likelihood of the student working full-time while attending college. The correlation coefficients ranged from .360 to .482. Based on Cohen's guidelines, the three items had a moderate relationship with each other. Table 6 displays the correlation matrix for Financial Commitment.

The alpha coefficient for the Financial Commitment scale was .653. The corrected item-total correlation coefficients ranged from .438 to .542 and indicated that these items had a moderate to strong relationship with the scale. The alpha coefficients if deleted ranged from .529 to .612 and fell below the scale's alpha coefficient of .653. The results suggest that this scale within the survey is an internally consistent measure. The scale scores ranged from 1.00 to 4.00, with a mean of 2.77 and a standard deviation of 0.77. Table 7 displays the corrected item-total correlation coefficients for each item and alpha coefficients if the item was deleted.

Table 6

Correlations for the Items Within the Financial Commitment Scale

Item	1	2	3
1. Q19	--	.412**	.360**
2. Q37r	.412**	--	.482**
3. Q40_10r	.360**	.482**	--

Note: r indicates recoding of original response data; ** $p < .001$.

Table 7

Corrected Item-Total Correlation and Alpha Coefficients for the Financial Commitment Scale

Item	Corrected Item-Total Correlation Coefficient	Alpha Coefficient if Deleted
Q19	.438	.612
Q37r	.542	.529
Q40_10r	.478	.540

Note: r indicates recoding of original response data.

Environmental Commitment. The Environmental Commitment Scale included three items. The scale measured the urban status of the area that the student was raised, how many miles is the student's permanent home from the institution, and the location of the freshman year housing. The correlation coefficients ranged from .163 to .651. Based on Cohen's guidelines, the three items had a weak to strong relationship with each other. The item that asked the participants to describe the area that they considered to be their hometowns had little variance. The majority of participants lived in urban and suburban areas. Table 8 displays the correlation matrix for Environmental Commitment.

The alpha coefficient for the Environmental Commitment Scale was .605. The corrected item-total correlation coefficients ranged from .215 to .589 and indicated that these items had a moderate to strong relationship with the scale. The alpha coefficients if deleted ranged from

.280 to .778 and varied from the scale's alpha coefficient of .692 due to the lack of variance with item 18. The results suggest that this scale within the survey is an internally consistent measure. The scale scores ranged from 1.00 to 3.67, with a mean of 1.69 and a standard deviation of 0.78. Table 9 displays the corrected item-total correlation coefficients for each item and alpha coefficients if the item was deleted.

Table 8

Correlations for the Items Within the Environmental Commitment Scale

Item	1	2	3
1. Q18	--	.235*	.163
2. Q34r	.235*	--	.651**
3. Q21r	.163	.651**	--

Note: r indicates recoding of original response data; * $p < .05$; ** $p < .001$.

Table 9

Corrected Item-Total Correlation and Alpha Coefficients for the Environmental Commitment Scale

Item	Corrected Item-Total Correlation Coefficient	Alpha Coefficient if deleted
Q18	.215	.778
Q34r	.589	.280
Q21r	.493	.378

Note: r indicates recoding of original response data.

College Decision Basis. The College Decision Basis Scale included eight items. The scale measured the student's level of importance for the following reasons to attend college: preparing for a professional career, becoming more cultured, obtaining better employment, learning interesting things, making more money, gaining more knowledge, pleasing family members, and getting more vocational training. The correlation coefficients ranged from .097 to

.682. Based on Cohen's guidelines, the eight items had a weak to strong relationship with each other. Table 10 displays the correlation matrix for College Decision Basis.

Table 10

Correlations for the Items Within the College Decision Basis Scale

Item	1	2	3	4	5	6	7	8
1. Q44_1r	--	.642**	.316**	.308**	.499*	.097	.388**	.614**
2. Q44_2r	.642**	--	.352**	.326**	.504**	.146	.391**	.409**
3. Q44_3r	.316**	.352**	--	.682**	.161	.401**	.381**	.514**
4. Q44_4r	.308**	.326**	.682**	--	.375**	.445**	.342**	.502**
5. Q44_5r	.499**	.504**	.161	.375**	--	.199	.307**	.427**
6. Q44_6r	.097	.146	.401**	.445**	.199	--	.326**	.272**
7. Q44_7r	.388**	.391**	.381**	.342**	.307**	.326**	--	.310**
8. Q44_8r	.614**	.409**	.514**	.502**	.427**	.272**	.310**	--

Note: r indicates recoding of original response data; * $p < .05$; ** $p < .001$.

The alpha coefficient for the College Decision Basis Scale was .812. The corrected item-total correlation coefficients ranged from .392 to .669 and indicated that these items had a moderate to strong relationship with the scale. The alpha coefficients if deleted ranged from .773 to .809 and fell below the scale's alpha coefficient of .812. The results suggest that this scale within the survey is an internally consistent measure. The scale scores ranged from 3.25 to 8.00, with a mean of 6.25 and a standard deviation of 1.27. Table 11 displays the corrected item-total correlation coefficients for each item and alpha coefficients if the item was deleted.

Institutional Commitment. The Institutional Commitment Scale included three items. The scale measured the likelihood of the student transferring, leaving temporarily, or leaving the institution permanently. The correlation coefficients ranged from .479 to .629. Based on

Cohen's guidelines, the three items had a strong relationship with each other. Table 12 displays the correlation matrix for Institutional Commitment.

Table 11

Corrected Item-Total Correlation and Alpha Coefficients for the College Decision Basis Scale

Item	Corrected Item-Total Correlation Coefficient	Alpha Coefficient if Deleted
Q44_1r	.579	.783
Q44_2r	.578	.785
Q44_3r	.620	.777
Q44_4r	.617	.799
Q44_5r	.517	.793
Q44_6r	.392	.809
Q44_7r	.495	.801
Q44_8r	.669	.773

Note: r indicates recoding of original response data.

Table 12

Correlations for the Items Within the Institutional Commitment Scale

Item	1	2	3
1. Q40_5r	--	.486**	.629**
2. Q40_6r	.486**	--	.479**
3. Q40_7r	.629**	.479**	--

Note: r indicates recoding of original response data; ** $p < .001$.

The alpha coefficient for the Institutional Commitment Scale was .768. The corrected item-total correlation coefficients ranged from .535 to .641 and indicated that these items had a strong relationship with the scale. The alpha coefficients if deleted ranged from .643 to .769 and were equal to or less than the scale's alpha coefficient of .768. The results suggest that this scale within the survey is an internally consistent measure. The scale scores ranged from 1.00 to 4.00,

with a mean of 3.35 and a standard deviation of 0.69. Table 13 displays the corrected item-total correlation coefficients for each item and alpha coefficients if the item was deleted.

Table 13

Corrected Item-Total Correlation and Alpha Coefficients for the Institutional Commitment Scale

Item	Corrected Item-Total Correlation Coefficient	Alpha Coefficient if Deleted
Q40_5r	.641	.643
Q40_6r	.535	.769
Q40_7r	.641	.654

Note: r indicates recoding of original response data.

Goal Commitment. The Goal Commitment Scale included five items. The scale measured the expectation of the student to earn at least a B average, plans for highest degree sought, number of years to complete the undergraduate degree, expectation of satisfaction at the institution, and the likelihood of earning a Bachelor's Degree. The correlation coefficients ranged from -.044 to .521. Based on Cohen's guidelines, the six items had a weak to strong relationship with each other. One possible explanation for the low correlation coefficients was the item that asked for the highest degree sought had little variance among the responses. Table 14 displays the correlation matrix for Goal Commitment.

The alpha coefficient for the Goal Commitment Scale was .577. The corrected item-total correlation coefficients ranged from .123 to .565 and indicated that these items had a moderate to strong relationship with the scale, except item 25, which had little variance in the responses. The alpha coefficients if deleted ranged from .404 to .655 and fell below the scale's alpha coefficient of .577, except the item with little variance. The results suggest that this scale within the survey is an internally consistent measure. The scale scores ranged from 1.20 to 4.00, with a mean of

2.99 and a standard deviation of 0.52. Table 15 displays the corrected item-total correlation coefficients for each item and alpha coefficients if the item was deleted.

Table 14

Correlations for the Items Within the Goal Commitment Scale

Item	1	2	3	4	5
1. Q40_1	--	.249*	.251*	.364**	.521**
2. Q20r	.249*	--	-.018	.248*	.247*
3. Q25	.251*	-.018	--	-.044	.163
4. Q40_12	.364**	.248*	-.044	--	.407**
5. Q40_2	.521**	.247*	.163	.407**	--

Note: r indicates recoding of original response data; * $p < .05$; ** $p < .001$.

Table 15

Corrected Item-Total Correlation and Alpha Coefficients for the Goal Commitment Scale

Item	Corrected Item-Total Correlation Coefficient	Alpha Coefficient if Deleted
Q40_1	.565	.422
Q20r	.249	.573
Q25	.123	.655
Q40-12	.359	.518
Q40_2	.511	.404

Note: r indicates recoding of original response data.

Academic Intentions. The Academic Intentions Scale included nine items. The scale measured the likelihood of the student to ask questions, accept mistakes, seek feedback, take notes, come late to class, fall asleep in class, skip class, complete homework, and communicate with instructors. The correlation coefficients ranged from .157 to .730. Based on Cohen's guidelines, the nine items had a weak to strong relationship with each other. Table 16 displays the correlation matrix for Academic Intentions.

Table 16

Correlations for the Items Within the Academic Intentions Scale

Item	1	2	3	4	5	6	7	8	9
1. Q39_1	--	.583**	.607**	.436**	.283**	.285**	.338**	.270**	.257*
2. Q39_2	.583**	--	.730**	.471**	.396**	.364**	.308**	.307**	.360**
3. Q39_3	.607**	.730**	--	.604**	.457**	.403**	.376**	.511**	.442**
4. Q39_4	.436**	.471**	.604**	--	.583**	.559**	.379**	.552**	.369**
5. Q39_5r	.283**	.396**	.457**	.583**	--	.470**	.391**	.460**	.254*
6. Q39_9r	.285**	.364**	.403**	.559**	.470**	--	.537**	.639**	.157
7. Q39_10r	.338**	.308**	.376**	.379**	.391**	.537**	--	.600**	.204
8. Q39_12r	.270**	.307**	.511**	.552**	.460**	.639**	.600**	--	.245*
9. Q39_13	.257*	.360**	.442**	.369**	.254*	.157	.204	.245*	--

Note: r indicates recoding of original response data; ** indicates $p < .001$; * indicates $p < .05$.

The alpha coefficient for the Academic Intentions Scale was .864. The corrected item-total correlation coefficients ranged from .410 to .773 and indicated that these items had a moderate to strong relationship with the scale. The alpha coefficients if deleted ranged from .830 to .867 and fell below the scale's alpha coefficient of .864. The results suggest that this scale within the survey is an internally consistent measure. The scale scores ranged from 1.56 to 4.00, with a mean of 3.24 and a standard deviation of 0.48. Table 17 displays the corrected item-total correlation coefficients for each item and alpha coefficients if the item was deleted.

Peer Relations. The Peer Relations Scale included three items. The scale measured the likelihood of the student working with other students on group projects, socializing with diverse groups, and being tutored by another student. The correlation coefficients ranged from .261 to .409. Based on Cohen's guidelines, the three items had a moderate relationship with each other.

Table 12 displays the correlation matrix for Peer Relations.

Table 17

Corrected Item-Total Correlation and Alpha Coefficients for the Academic Intentions Scale

Item	Corrected Item-Total Correlation Coefficient	Alpha Coefficient if Deleted
Q39_1	.560	.854
Q39_2	.654	.843
Q39_3	.773	.830
Q39_4	.708	.838
Q39_5r	.581	.852
Q39_9r	.587	.852
Q39_10r	.530	.856
Q39_12r	.618	.849
Q39_13	.410	.867

Note: r indicates recoding of original response data.

Table 18

Correlations for the Items Within the Peer Relations Scale

Item	1	2	3
1. Q39_6	--	.409**	.261*
2. Q39_7	.409**	--	.351**
3. Q39_8	.261*	.351**	--

Note: r indicates recoding of original response data; ** $p < .001$.

The alpha coefficient for the Peer Relations Scale was .607. The corrected item-total correlation coefficients ranged from .368 to .477 and indicated that these items had a moderate relationship with the scale. The alpha coefficients if deleted ranged from .412 to .576 and fell below the scale's alpha coefficient of .607. The results suggest that this scale within the survey is an internally consistent measure. The scale scores ranged from 1.00 to 4.00, with a mean of

2.24 and a standard deviation of 0.61. Table 19 displays the corrected item-total correlation coefficients for each item and alpha coefficients if the item was deleted.

Table 19

Corrected Item-Total Correlation and Alpha Coefficients for the Peer Relations Scale

Item	Corrected Item-Total Correlation Coefficient	Alpha Coefficient if Deleted
Q39_6	.410	.519
Q39_7	.477	.412
Q39_8	.368	.576

Note: r indicates recoding of original response data.

Self-Knowledge. The Self-Knowledge Scale included five items. The scale measured the student's knowledge of his or her strengths and weakness, and the student's expectation of earning good grades, becoming anxious in college, and managing time effectively. The correlation coefficients ranged from .119 to .662. Based on Cohen's guidelines, the five items had a weak to strong relationship with each other. Table 20 displays the correlation matrix for Self-Knowledge.

The alpha coefficient for the Self-Knowledge Scale was .712. The corrected item-total correlation coefficients ranged from .259 to .669 and indicated that these items had a moderate to strong relationship with the scale. The alpha coefficients if deleted ranged from .577 to .760 and slightly varied from the scale's alpha coefficient of .712. The results suggest that this scale within the survey is an internally consistent measure. The scale scores ranged from 1.40 to 4.00, with a mean of 3.02 and a standard deviation of 0.59. Table 21 displays the corrected item-total correlation coefficients for each item and alpha coefficients if the item was deleted.

Table 20

Correlations for the Items Within the Self-Knowledge Scale

Item	1	2	3	4	5
1. Q38_1	--	.662**	.379**	.238*	.519**
2. Q38_2	.662**	--	.224*	.215*	.443**
3. Q38_3r	.379**	.224*	--	.235*	.382**
4. Q38_4r	.238*	.215*	.235*	--	.119
5. Q38_5	.519**	.443**	.382**	.119	--

Note: r indicates recoding of original response data; * $p < .05$; ** $p < .001$.

Table 21

Corrected Item-Total Correlation and Alpha Coefficients for the Goal Commitment Scale

Item	Corrected Item-Total Correlation Coefficient	Alpha Coefficient if Deleted
Q38_1	.669	.577
Q38_2	.567	.622
Q38_3r	.420	.689
Q38_4r	.259	.760
Q38_5	.505	.650

Note: r indicates recoding of original response data.

To measure discriminate validity, a bivariate correlation was conducted using the 10 scales from the Freshman Orientation Survey. The correction coefficients ranged from -.24 to .53. With a correlation coefficient less than or equal to .80 as a criterion (Meyers et al., 2006), these results suggested that the scales have discriminant validity and did not measure the same concept. Table 22 displays the intercorrelation matrix for the Freshman Orientation Survey scales.

Table 22

Intercorrelations for the Freshman Orientation Survey Scales

Scale	1	2	3	4	5	6	7	8	9	10
1. Individual Aptitude	--	.20	.24*	.10	-.24*	.13	.16	.01	.00	.17
2. Family Attributes	.20	--	.32**	.03	-.18	.15	.15	-.09	-.10	.04
3. Financial Commitment	.24*	.32**	--	-.01	-.13	.18	.08	-.06	.02	-.05
4. Environmental Commitment	.10	.03	-.01	--	-.08	-.06	-.16	.11	.02	-.13
5. College Decision Basis	-.24*	-.18	-.13	-.08	--	.02	.21*	.48**	.23*	.41**
6. Institutional Commitment	.13	.15	.18	-.06	.02	--	.24*	.15	.18	.27*
7. Goal Commitment	.16	.15	.08	-.16	.21*	.24*	--	.26*	.19	.47**
8. Academic Intentions	.01	-.09	-.06	.11	.48**	.15	.26*	--	.33**	.53**
9. Peer Relations	.00	-.10	.02	.02	.23*	.18	.19	.33**	--	.30**
10. Self-Knowledge	.17	.04	-.05	-.13	.41**	.27*	.47**	.53**	.30**	--

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

Baseline Data

The second purpose of this study was to establish a baseline for undergraduate majors within the College. This quantitative and qualitative picture will allow comparisons to be made between incoming freshmen and the alumni of the various undergraduate programs within the College. For this analysis, the 80 participants who graduated with their undergraduate degree from the state university were selected for the baseline analysis.

Of the participants who graduate with their undergraduate degrees from the College, 82.5% of them had an overall high school grade point average of 3.00 or higher, and 52.5% of them had a 3.50 or higher. When asked about standardized admission tests, 70 of the 80 participants took the Scholastic Aptitude Test (SAT). The median range for the highest SAT Math and Verbal Scores was 500 to 599, but the SAT Verbal Score tended to be higher than the

Math Score. For 80% of the participants, their highest SAT Verbal Score fell in the range of 500 to 800. Only 68.6% of the participants had their highest SAT Math Score fall in that same range. It should be noted that the College Board revises the SAT every 6 to 7 years, which affects these frequency counts. When examining the family attributes, the most occurring level of formal education was the high school diploma for the father and mother. The majority of the participants described their father's primary occupation as white-collar (28.8%) or blue-collar (47.5%) and described their mother's primary occupation as white-collar (35%) or blue-collar (33.8%). Based on this data, 52.5% of the participants are considered first-generation college graduates, since both of their parents did not earn a college degree. The median range of the parents' household income was \$40,000 to \$49,000 (i.e., lower middle-class).

In terms of financial commitment, when asked how concerned they were about paying for their college education, 42.5% of the participants responded that they were confident that they would have sufficient funds, and only 16.3% responded that they were not sure if they would have enough funds to complete the degree. When asked how they planned to pay for college tuition and other expenses, 63.8% of the participants planned to use scholarships and grants. One-third of the participants planned to use parental and family financial support, and only 30% planned to use student loans. Nearly 63% of the participants responded that it was unlikely for them to work full-time while attending the institution. One-fourth of the participants did not work during their freshman year, and 56.3 % worked part-time during their freshman year. Concerning their environmental commitment, more than 87.5% of the participants lived within 50 miles of the state university, and three-quarters of the participants lived at home during their freshman year, which the participants consider to be either a suburban or urban area.

When asked about their rationale for attending college, 91.3% of the participants responded that “to prepare for a professional career” was a very important to extremely important basis for their college enrollment decision. More than one quarter of the participants responded that it was not important to please their parents and family. Regarding institutional commitment, the majority of the participants (58.8%) responded that it was unlikely that they would be involved an extracurricular activity. More than 80% of the participants responded that it was unlikely that they would leave the institution temporarily, and nearly 90% of the participants responded that it was unlikely that they would transfer or leave the institution permanently. Almost 47% of the participants responded that they did not apply for admission to any other colleges or universities. Nearly 67% of the participants responded that the location of the institution was the primary reason for attending this state university.

Regarding goal commitment, nearly 90% of the participants felt that they would earn a bachelor’s degree when they entered their freshman year. Slightly more than 56% of the participants felt that it was extremely likely for them to earn at least a “B” average. When asked about the likelihood of changing their major, 32.5% responded extremely unlikely, 33.8% responded unlikely, 23.8% responded likely, and 10.0% responded extremely likely. The large majority of the participants (87.6%) responded that they expected to complete their undergraduate degree within 5 years. When asked about the highest degree that they planned to obtain, 21.3% responded master’s level and 11.3% responded doctorate level. Nearly 64% expected the bachelor’s degree to be their highest degree. The participants’ responses regarding college decision, environmental commitment, institutional commitment, and goal commitment mimic the findings in empirical studies (e.g., Spady, 1971; Tinto, 1975, 1993, 1997; Woosley & Miller, 2009), except living on campus and extracurricular participation.

In terms of academic intentions, more than 92% of the participants tended to seek feedback for their academic work and to take notes during class during high school, and 96.2% of the participants responded that they would ask questions in class and would accept mistakes as part of the learning process. Nearly 88% of the participants communicated regularly with their instructors. Less than 25% of the participants came to school late, fell asleep in class, or skipped class at the high school level. Two-thirds of the participants never failed to complete homework in high school. These findings support the notion of the importance of high school performance when predicting academic success in higher education (Spady, 1971). Considering peer relations, 10% of the participants never worked with other students on group projects and never socialized with diverse people. Only 52.5% tended to tutor another student. When examining self-knowledge, more than 87% of the participants felt that they were aware of their strengths, and almost 79% felt that they knew their weaknesses. More than 95% expected to earn good grades. Slightly less than 53% of the participants were anxious about attending college.

In addition to the items within the ten scales, data was collected regarding subject areas that the participants were more or least likely to need assistance, learning style, challenges faced during undergraduate studies, and supports that contributed to their success at the institution. This gathered data will allow the College to develop programs and/or policies to assist future undergraduate students with persevering within the College. Thus, the likelihood of the incoming freshmen earning a degree within the College will increase.

Of the undergraduate alumni, 52.5% of the participants responded that they were more likely to need assistance in Math, and 62.5% of them responded that they were least likely to need assistance in English. These responses are supported by the highest SAT Math and Critical Reading Scores reported by the participants. A series of items asked the participants how they

preferred new information to be presented, how they preferred performing independent learning activities, and which type of grouping they preferred. The preferred learning style categories utilized the categories of Felder's Index of Learning Styles (Felder & Silverman, 1988).

According to the pilot survey, across all degree majors, the undergraduate alumni tended to be active and sensing. An active learner tends to prefer small group and whole group activities during class, and a sensing learner tends to prefer instruction that involves demonstrations, real-world applications, guided student practice, and hands on investigations. The tendency to be a visual or verbal learner varied depending on the major, but the majority of the majors tended to be verbal. This type of learner tends to prefer instruction with lecture of new concepts along with supplementary materials and short assignments. The global versus sequential categories also varied depending on major, but the majority of the undergraduate alumni, primarily elementary, middle, and secondary education majors, tended to be sequential learners. These learners tend to prefer instruction involving graphic organizers, teacher guided practice, and specific directions given for an independent activity. These learning preferences could cause difficulties with student retention if the student encounters instructional environments that do not match their preferences (Vare, Dewalt, & Dockery, 2004).

At the end of the pilot survey, two open-ended prompts asked the participants about their challenges and supports during their undergraduate years. The overwhelming majority of the listed challenges were typical for traditional students who enter college from high school, such as financial aid and time management. When asked about supports that helped them overcome the challenges, most of the participants listed faculty connections with instructors, advisors, and other staff members. These responses support the research findings in the literature (e.g., Endo & Harpel, 1982; Terenzini & Pascarella, 1978; Umbach & Wawrzynski, 2005).

Implications

Beginning with the summer of 2012, the Freshman Orientation Survey will be administered to all incoming freshmen who have declared a major within the College during the summer orientation sessions. Once analyzed, the results of the survey will be given to the appropriate offices and/or individuals for future advisement and/or services. Then, the needs of these “at risk” students can be addressed by student advisement and/or other campus services using various intervention strategies. The ultimate goal of the survey is to predict the students who may be “at risk” of leaving the College, whether academically successful or unsuccessful, and to differentiate between those groups of students who leave College.

History served as a threat to external validity with this study (Gall, Gall, & Borg, 2010). More than half of the responses graduated from their undergraduate program of study on or before 1995, which means their freshman year experience was 20 or more years ago. Another limitation to this study could be the self-reported data. Kuncel, Credé, and Thomas (2005) found with their meta-analysis that self-reported measures could be meaningful and valid. Since there were various items within the survey that allowed the researcher to corroborate the responses and determine validity within the survey items and scales. A third limitation was the pilot survey was administered to a sample affiliated with a single institution which does not allow for generalization.

Future research will be conducted to compare the findings of this baseline analysis with the analysis conducted with the incoming freshmen at summer orientation. In addition, the responses will be studied along with first year college grade point averages to determine if the survey items can pinpoint warning flags for leaving the College between the freshman and sophomore year.

References

- Astin, A. W., Korn, W., & Green, K. (1987). Retaining and satisfying students. *Educational Record, 68*, 36-42.
- Brown, J. L. (2011). *Persistence of Freshmen who enter CSU and declare a major within the COEHP*. Presented at the September COEHP Executive Council Meeting.
- DeAngelis, S. (2003). Noncognitive predictors of academic performance Going beyond the traditional measures. *Journal of Allied Health, 32*(1), 52 – 57.
- Endo, J., & Harpel, R. (1982). The effect of student-faculty interaction on students' educational outcomes. *Research in Higher Education, 16*, 115 – 135.
- Felder, R. M., & Silverman, L. K. (1988). Learning and teaching styles in engineering education. *Engineering Education, 78*, 674-681.
- Fike, D. S., & Fike, R. (2008). Predictors of first-year student retention in the community college. *Community College Review, 36*, 68-88.
- Gall, M. D., Gall, J. P., & Borg, W. R. (2010). *Applying educational research: How to read, do, and use research to solve problems of practice* (6th ed.). Boston: Pearson Education, Inc.
- Garton, B. L., Dyer, J. E., & King, B. O. (2000). The use of learning styles and admission criteria in predicting academic performance and retention of college freshmen. *Journal of Agricultural Education, 41*(2), 46 – 53. DOI: 10.5032/jae.2000.02046
- George, D., Dixon, S., Stansal, E., Gelb, S. L., & Pheri, T. (2008). Time diary and questionnaire assessment of factors associated with academic and personal success among university undergraduates. *Journal of American College Health, 56* (6), 706-715.
- Harackiewicz, J. M., Barron, K. E., Tauer, J. M., & Elliott, A. J. (2002). Predicting success in college: A longitudinal study of achievement goals and ability measures as predictors of

- interest and performance from freshmen year through graduation. *Journal of Educational Psychology*, 94(3), 562 – 575. DOI: 10.1037//0022-0663.94.3.562
- Hossler, D. & Stage, F. K. (1999). Family and high school experience influences on the postsecondary education plans of ninth grade students. *American Education Research Journal*, 29(2): 425-451.
- Kitsantas, A., Winsler, A., & Huie, F. (2008). Self-regulation and ability predictors of academic success during college: A predictive validity study. *Journal of Advanced Academics*, 20(1), 42 – 68.
- Kuncel, N. R., Credé, M., & Thomas, L. L. (2005). The validity of self-reported grade point averages, class ranks, and test scores: A meta-analysis and review of the literature. *Review of Educational Research*, 75, 63-82.
- Lumina Foundation for Education. (2009). *Lumina Foundation's Strategic Plan: Goal 2025*. Indianapolis, IN: Lumina Foundation for Education, Inc. Retrieved from www.GOAL2025.org
- McCubbin, I. (2003). *An examination of criticisms made of Tinto's 1975 students integration model of attrition*. Retrieved August 18, 2011 from <http://www.psy.gla.ac.uk/~steve/loaled/icubb.pdf>.
- Meyers, L. S., Gamst, G., & Guarino, A. J. (2006). *Applied multivariate research: Design and interpretation*. Thousand Oaks, CA: Sage Publications.
- Murtaugh, P. A., Burns, L. D., & Schuster, J. (1999). Predicting the retention of university students. *Research in Higher Education*, 40(3), 355 – 371.
- Noel, L., Levitz, R., & Saluri, D. (Eds.). (1985). *Increasing student retention: Effective programs and practices for reducing the dropout rate*. San Francisco, CA: Jossey-Bass.

- Nunnally, J., & Bernstein, I. (1994). *Psychometric theory*. New York: McGraw-Hill.
- Spady, W. G. (1971). Dropouts from higher education: Toward an empirical model. *Interchange*, 2, 38 - 62.
- Stupnisky, R. H., Renaud, R. D., Perry, R. P., Ruthig, J. C., Haynes, T. L., & Clifton, R. A. (2007). Comparing self-esteem and perceived control as predictors of first-year college students' academic achievement. *Social Psychology of Education*, 10, 303 – 330. DOI: 10.1007/s11218-007-9020-4
- Terenzini, P. T., & Pascarella, E. T. (1978). The relation of students' precollege characteristics and freshman year experience to voluntary attrition. *Research in Higher Education*, 9, 347 – 366.
- Terenzini, P. T., Springer, L., Yaeger, P. M., Pascarella, E. T., & Nora, A. (1996). First-generation college students: Characteristics, experiences, and cognitive development. *Research in Higher Education*, 37, 1-22.
- Thorndike, R. L. (1951). Reliability. In E. F. Linn (Ed.), *Educational measurement*. Washington, DC: American Council on Education.
- Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research*, 45, 89 – 125.
- Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago: The University of Chicago Press.
- Tinto, V. (1997). Classrooms as communities: Exploring the educational character of student persistence. *Journal of Higher Education*, 68 (6), 599-623.
- Tinto, V. (2006). Research and practice of student retention What next?. *Journal of College Student Retention*, 8, 1 – 19.

- Tross, S. A., Harper, J. P., Osher, L. W., & Kneidinger, L. M. (2000). Not just the usual cast of characters: Using personality to predict college performance and retention. *Journal of College Student Development, 41*, 323-334.
- Umbach, P., & Wawrzynski, M. (2005). Faculty do matter: The role of college faculty in student learning and engagement. *Research in Higher Education, 46*, 153 – 184.
- Vare, J., Dewalt, M., & Dockery E. (2004). Making the grade: Predicting retention in undergraduate education. *Journal of College Student Retention, 5*(3), 275-292.
- Wessel, R. D., Bell, C. L., McPherson, J. D., Costello, M. T., & Jones, J. A. (2006). Academic disqualification and persistence to graduation by financial aid category and academic ability. *Journal of College Student Retention, 8*(2), 185-198.
- Woosley, S. A., & Miller, Angie, L. (2009). Integration and institutional commitment as predictors of college student transition: Are third week indicators significant? *College Student Journal, 43* (4), 1260 – 1271.
- Willingham, W. W., Lewis, C., Morgan, R., & Ramist, L. (1990). *Predicting college grades: An analysis of institutional trends over two decades*. Princeton, NJ: Educational Testing Service.