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Exploring the Use of the Student Readiness Inventory™ to Develop a Retention Plan for Incoming Freshmen in the College of Agriculture at Utah State University

Lisa B. Allen
Utah State University

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EXPLORING THE USE OF THE STUDENT READINESS INVENTORY™ TO

DEVELOP A RETENTION PLAN FOR INCOMING FRESHMEN

IN THE COLLEGE OF AGRICULTURE AT UTAH STATE UNIVERSITY

by

Lisa B. Allen

A thesis submitted in partial fulfillment
of the requirements for the degree

of

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Approved:

_____   _____
Brian K. Warnick, Ph. D.   Gary S. Straquadine, Ph. D.
Major Professor   Committee Member

_____   _____
Julie P. Wheeler, M. S.   Noelle A. Call, M. Ed.
Committee Member   Committee Member

_____
Byron R. Burnham, Ed. D.
Dean of Graduate Studies

UTAH STATE UNIVERSITY
Logan, Utah
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ABSTRACT

Exploring the Use of the Student Readiness Inventory™ to

Develop a Retention Plan for Incoming Freshmen

in the College of Agriculture at Utah State University

by

Lisa B. Allen, Master of Science

Utah State University, 2009

Major Professor: Brian K. Warnick, Ph.D
Department: Agricultural Systems Technology and Education

The purpose of this study was to utilize the Student Readiness Inventory™ to

profile retention and academic success rates for College of Agriculture freshmen. The

Student Readiness Inventory (SRI) has been developed to help measure psychosocial

issues related to academic achievement and college student retention. This information,

combined with high school grade point average and admission test scores from American

College Testing (ACT, Inc.), will help advisors and administrators in the College of

Agriculture identify potential at-risk students during their first year of college. From SRI

test results, a model for intervention will be built to meet the students' specific

psychosocial needs, encouraging their persistence in obtaining a degree, and enhancing

their college experience. Fifty-five incoming freshmen completed the SRI survey.

Overall mean scores indicated that the students scored lower in psychosocial skills

including social activity, study skills, academic self-confidence, and communication skills. Student SRI summary profile information will be provided to advisors and administrators to identify and help students who may be "at-risk" for dropping out of school before completing their degrees. The SRI information can help advisors and administrators in designing intervention programs or activities to assist students with improving abilities where they may be deficient. Further utilization of the SRI program may provide data on student trends with regard to retention and academic success for students in the College of Agriculture at Utah State University.

<div align="right">(104 pages)</div>

ACKNOWLEDGMENTS

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CHAPTER I

INTRODUCTION

The number of students leaving public colleges and universities has increased over the past 20 years (Tinto, 1982). Reports indicated that the first-year attrition rate for full-time and all entering students enrolled in 4-year institutions during fall 1990 was 28.3% (ACT, Inc., 1992). In 1993, Tinto reported that 2.4 million students were entering higher education, yet more than 1.5 million students left their first institution without obtaining a degree. Seidman (2005) indicated approximately one third of the students beginning their postsecondary education will leave their chosen university without a degree after six years and about one half will attain their goal of receiving a bachelor's degree. ACT News (2009) reported that retention numbers for four-year public institutions have declined over the past two years to their lowest level since 1983. The mean retention rate for these institutions is 71%. Such declines are attributed to economic issues and increased tuition costs for students to attend four-year universities. Because students and universities receive funding from federal and state sources, political policy has focused more attention on student retention and imposed stronger measures for accountability on academia. There are 14 million students enrolled nationwide in institutions of higher education. Universities have become much more aware of student retention and persistence rates. According to Carey (2004), poor academic performance and drop out rates are significant concerns for post secondary institutions as over 40% of students entering college are not completing their first year.

In Fall 2004, first year retention numbers for College of Agriculture students from the 2003-2004 cohort had decreased by 29.6% on the main campus, 31% in Regional Campus Distance Education (RCDE) students and 25% in the Agricultural Systems Technology and Education (ASTE) department. This data was based on individuals entering the College of Agriculture during fall semester 2003-2004 who were first-time, full-time degree-seeking students (K. Hyde, personal communication, June 23, 2008). Thus, we have reason to be concerned as to why our students are not returning to school upon completion of their first year of college.

With some institutions experiencing 6-year graduation rates as low as 34% (Swail, 2004), there is some question as to whether students are prepared to go to college. To avoid scholastic problems, it has become important to identify students who may be at risk for dropping out of school. More attention has been placed on standardized achievement tests and high school GPA (Peterson, Casillas, & Robbins, 2005) as predictors of student success. Although these tests have verified suitable methods for forecasting college outcomes (ACT, Inc., 1997; Willingham, Lewis, Morgan, & Ramist, 1990), they capture only a fraction of the variance; therefore, assessment techniques should be amplified to include other important characteristics or predictors of success (Sternberg, 1986).

There are several academic and non-academic reasons why students drop out of school. Lotkowski, Robbins, and Noeth (2004) stated that, in general, there was a strong correlation for retention when socioeconomic status (SES), high school GPA (HSGPA)

and ACT[®] scores were pooled with university commitment, scholastic goals, group support, confidence in one's academic abilities, and connection to other individuals.

Research recommends that one of the most efficient ways to avert poor academic performance and increase student persistence is to identify at-risk students early and then help them in their educational progress (Beck & Davidson, 2001). These students have traditionally been identified through standardized achievement tests and high school GPA. Such test results may disguise other pertinent success issues, and high school GPA may not include school differences with regards to expectation, performance, or grade inflation. Intervention methods based on test scores and GPA alone are usually limited to academic tutoring and do not take into account other risk factors including low motivation and confidence levels, poor discipline habits, and lack of commitment to obtain a college degree.

In looking at previous models available, it was concluded that "Current educational persistence models are lacking full measurement of psychometric features" (Le, Casillas, Robbins, & Langley, 2005; Robbins et al., 2004). As a result, Robbins et al. conducted a meta-analysis to identify relationships between psychosocial factors and academic capabilities and their impact on students remaining in school and college grade point average. Data from 100 studies were reviewed and nine concepts were identified which related specifically to success in college. Robbins and associates' research (as cited in Le et al.) indicated,

> After controlling for the effects of traditional predictors (e.g., high school GPA
> and standardized achievement test scores), three psychosocial constructs

demonstrated incremental validity in predicting academic performance (academic

self-efficacy, achievement motivation, and academic goals), and six constructs

were found to be predictive of college persistence (academic goals, academic self-

efficacy, institutional commitment, academic-related skills, social support and

social involvement). (p. 483)

From this analysis, Le and associates (2005) created the Student Readiness

Inventory™.

Statement of the Problem

As of fall 2004, data records from the Utah State University Analysis, Assessment

and Accreditation office showed a retention rate of 70.4% for College of Agriculture

students attending classes on the main USU campus. This percentage was for first-time,

full-time, degree seeking students in the 2003-2004 cohort. Compared with retention

rates for peer institution freshmen, averaging 85.2%, there is a need for increased

retention efforts in the College of Agriculture at Utah State University. There are some

financial implications for institutions with high attrition rates. Barfield and Beaulieu (as

cited in Lotkowski et al., 2004) indicated that postsecondary educational opportunities

are important to the development of a stronger and more competitive workforce as well

as improving individuals' quality of life. Institutions of higher education have a

responsibility to attract, retain and help students to graduate in a timely manner. The first

year of college is a critical time for students to gain knowledge and improve cognitive

abilities which can be used throughout the college experience, impacting long-term

learning and persistence (Lotkowski et al., 2004). There may be other non-academic factors which may contribute to a student's success including self efficacy, social interaction and involvement (Le et al., 2005). One possible solution to avert poor academic performance and increase student retention during the first year of college is to identify "at-risk" students early and provide intervention programs to help them with their educational success.

Purpose and Objectives

The purpose of this study was to utilize the Student Readiness Inventory (SRI) to profile incoming freshmen determining psychosocial characteristics that contribute to academic success and retention for College of Agriculture freshmen. SRI has been developed to help measure psychosocial factors that are related to academic achievement and college student retention. This information, combined with high school GPA and admission test scores (ACT and/or SAT) will help advisors and administrators in the College of Agriculture identify potential at-risk students during their first year in college. From SRI test results, a model for intervention will be evaluated and built to meet students' specific psychosocial needs, encourage their persistence in obtaining a degree, and enhance their college experience. To achieve this purpose the following objectives guided this study:

1. Describe SRI index scores using the ten subscales, retention index and academic success index for fall 2008 College of Agriculture incoming freshmen;

2. Describe student characteristics including USU GPA for fall 2008 and spring 2009, parents' education, siblings' education, the distance students lived away from home, place of residence, employment intention while attending school, graduation intentions, and plans for interruption of education;

3. Determine which student variables account for the variance in the retention and academic success indexes; and,

4. Propose an intervention model which can help target "at-risk" students during their first year of college.

<div align="center">Definitions</div>

The following definitions regarding retention are taken from the Student Readiness Inventory (SRI; Peterson et al., 2005):

Academic Discipline: "The amount of effort one puts into schoolwork and the degree to which a student is hardworking and conscientious" (p. 2).

Academic Self-Confidence: "The belief in one's ability to perform well in school" (p. 2).

Academic Self-Efficacy: "An individuals' confidence in their ability to successfully perform academic tasks at a designated level" (Schunk, as cited in Gore, 2006, p. 93).

Academic Success Index: "This index indicates the likelihood of a GPA of 2.0 or higher after the first semester at a postsecondary institution. The rate of identification of students at risk of academic difficulty is increased over random prediction by as much as

20% at two-year institutions and 16% at four-year institutions" (S. Robbins, personal communication, April 1, 2009).

Commitment to College: "One's commitment to staying in college and getting a degree" (p. 2).

Communication Skills: "Attentiveness to others' feelings and flexibility in resolving conflicts with others" (p. 2).

Emotional Control: "One's responses to strong feelings" (p. 2)

General Determination: "The extent to which one strives to follow through on commitments and obligations" (p. 2).

Goal Striving: "The strength of one's efforts to achieve objectives and end goals" (p. 2).

Homogeneous: "All of the same or similar kind or nature" (e-Look.org, n.d.)

Program Retention: "Tracks the full-time student in a degree program over time (6 years/4-year college, 3 years/2-year college) to determine whether the student has completed the program" (Center for the Study of College Student Retention, 1996).

Retention Index: "This index indicates the likelihood of returning a second year. The rate of identification of students at risk of dropping out is increased over random prediction by as much as 32% at 2-year institutions and 31% at 4-year institutions. Since baseline retention and academic performance rates vary across institutions, these indices should not be interpreted as explicit predicted probabilities of retention or academic performance; rather, these indices are approximate measures of how each student's

psychosocial factors lend themselves to persistence and academic performance after the first year of college" (S. Robbins, personal communication, April 1, 2009).

Social Activity: "One's comfort in meeting and interacting with other people" (p. 2).

Social Connection: "One's feelings of connection and involvement with the college community" (p. 2).

Assumptions

The assumptions of this study included the following:

1. The students who responded to the SRI survey were answering the questions truthfully.

2. The phenomenon of student retention and academic success can be measured.

3. An intervention model can be developed to help target "at-risk" students during their first year of college.

Limitations

This research was conducted with the following limitations:

1. A very small population of respondents participated in completing the SRI survey.

2. The incoming freshmen students in the College of Agriculture who completed the SRI survey were very homogeneous. The majority of respondents were female and Caucasian. The population was very midstream with not many

minorities or nontraditional students being represented. Thus, there were limitations to the responses received on the SRI survey.

Significance of the Study

Students are leaving higher education institutions without completing their degrees. In order for the U.S. workforce to remain competitive with other nations throughout the world, postsecondary institutions have a responsibility to attract, retain and assist students achieve their academic goals and graduate (Lotkowski et al., 2004). There are several academic and nonacademic factors which contribute to whether students remain in school. This study was completed to profile incoming freshmen in the College of Agriculture to help identify such factors and their potential impact on student retention and academic success.

From the student's perspective, if they don't have the ability to succeed, why are they attending postsecondary institutions? Perseverance is very important but is not a variable goal. With the development of intervention programs, institutions can help students to get through the change process, be successful and obtain college degrees.

CHAPTER II

REVIEW OF LITERATURE

The purpose of this chapter is to provide an overview of the available literature on the Student Readiness Inventory™ (SRI) on the use of this instrument to profile retention rates for College of Agriculture freshmen. Chapter II will be divided into the following sections: (a) theoretical framework; (b) retention rates; (c) financial implications; (d) importance of students obtaining an education; (e) academic and non-academic factors impacting retention; and (f) identifying at-risk students. Information was obtained from the USU Library and online databases using Goggle Scholar, ERIC, and Springerlink. Searches were conducted using the following words or combinations of words: academic success, attrition, retention rates, student retention, college retention, student success in college and persistence.

Theoretical Framework

In studying theoretical models used for retention, Tinto (1975) provided a student retention model which represented a comprehensive framework for students' persistence and reasons why students leave college. In his model, Tinto suggested that institutions need to better understand the relationships between students and the universities, taking partial responsibility for why students leave. Robbins et al. (2004) suggested that "educational persistence models" may not clearly emphasize the importance of student

"academic engagement" through achievement of academic objectives, skill sets and confidence levels when looking at retention.

Retention continues to be a problem for higher education institutions across the nation. Research shows that the first year of college is a critical stage as students are very vulnerable during this period of time. Tinto's (1993) retention model is shown in Figure 1. The model categorizes student retention into several sections including "pre-entry attributes, goals/commitments, institutional experiences, integration, goals/commitments and outcome" (p. 115). Pre-entry attributes are described as the student's family and community background, skills and abilities as well as prior educational experience. Family/community background involves social status, parents' education, and the size of community where the student resided. Race, sex, disabilities, intellect, social aptitude, and the student's level of motivation are grouped in the skills and abilities section. Previous schooling would contain the student's high school GPA. Financial resources are listed in the attribute category. The researcher indicated that each attribute could impact the student's retention affecting academic achievement, intentions and commitment to goals. Students enter college bringing a combination of attributes and overall commitment with them. These attributes influence the student's intentions and commitments to the level, type of education and occupation desired. While attending school, the experiences which the student has with academics, social interactions and connections with other students and faculty, and the institution as a whole may determine whether the student remains in school. Academic performance as well as positive
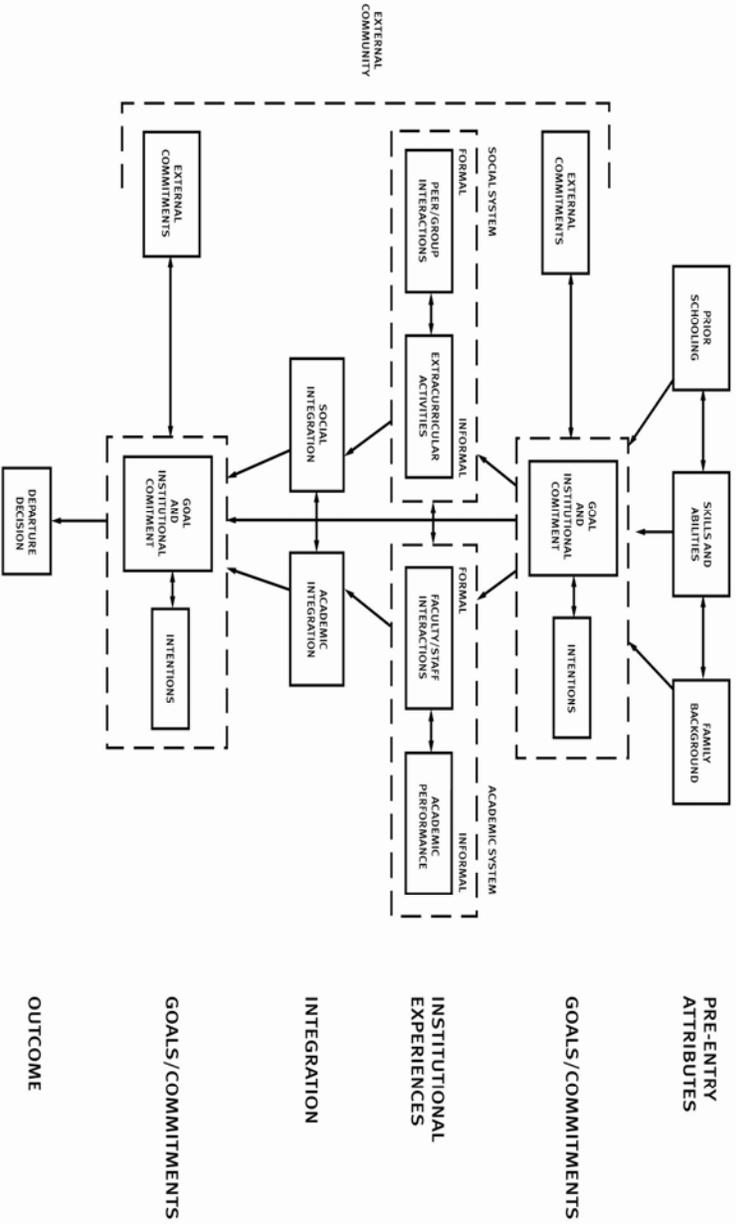
Figure 1. Tinto's student model regarding factors which contribute to student attrition.

academic and social integration encourages the student to recommit and continue on to

degree completion. On the contrary, if the student has a lower degree of integration,

departure from school is more likely to occur. External influences including work, family

and community may influence whether a student remains in school even if a positive

experience had taken place at the institution. Outcome is measured by whether the

student departs or remains in school.

Reason, Terenzini, and Domingo (2006) discussed the importance of students

gaining knowledge and cognitive abilities during their first year of college and the impact

it may have on their long term learning and persistence. Prior research (Pascarella &

Terenzini, as cited in Reason et al., 2006) projected that students in the first 2 years of

college acquire 80-95% of their knowledge base in English, science, and social studies.

Between 63–90% of critical thinking skills are developed during the student's first two

years in college. Reason and associates completed a study to identify what factors

influenced "academic success and persistence among first-year college students" (p. 150).

Research results indicated there are several factors which contribute to a student's first

year of college including "students' experiences, faculty and peer cultures and

environments, and institutional policies" (p. 171). If the student feels connected to other

students, faculty and the institution, and is academically successful during the first year

of college, the more likely the student is to return to school the following year. ACT (as

cited in Reason et al.) reported that the first year of college is crucial to the student's

learning as well as establishing a foundation for scholastic success and retention in

subsequent years.

Retention Rates

Approximately 40% of college students will leave postsecondary institutions before obtaining a degree (Porter as cited in Tinto, 1987) and 75% of these students will leave within the first two years (Tinto).

"In a six-year period, only 55% of the students who begin a bachelor's degree program at a four-year college or university will complete it at the same institution" (Consortium for Student Retention Data Exchange, as cited in Reason et al., 2006, p. 150).

In review of some of USU's peer institutions' and retention rates for first-year full-time freshmen, the University of California at Davis (Lopez & Estes, 2007) reported retention rates of 90% for 2002, 90% for 2003 and 89% for 2004. Colorado State University's (Retention Working Group, 2006) rate was reported as 82.4%. North Carolina State University (2008) had a retention rate of 89.5% for freshmen students. Oregon State University (2005) reported an 80.7% retention rate, while Texas A&M University (2004) reported a 90.4% retention rate for their 2003-04 cohort. Penn State, (Penn State University Budget Office, 2008) at their University Park campus, reported a retention rate of 87.3% for 2005, 89.5% for 2006 and 92.3% for 2007. Virginia Tech (2008-09) reported retention rates of 88.5% for 2006, 93.2% for 2007 and 91.0% for 2008. Washington State University (2008-09) reported a retention rate of 82% for the 2007 student cohort. New Mexico State University (Venegas, 2006) reported a retention rate of 75.6% for first-time, full-time, degree-seeking freshmen.

It should be noted that peer institution retention rates need to be viewed with knowledge of each institutions level of selectivity and admissions policy. USU's acceptance rate is high compared to most of our peer institutions. That is, 96-98% of the students who apply are typically admitted. Most of the schools described above have lower acceptance rates. There are a few things that account for USU's high acceptance rate:

1. Admission standards are very straight forward; if a student has an 18 ACT composite score, 2.5 high school GPA and a 90 Admissions Index score, they are automatically admitted to the university, so in that sense, USU isn't really selective.

2. Freshmen admission decisions are made centrally in the Admissions office because there is capacity in most programs. If a student applies for an academic program with higher standards (e.g., business) and falls short, they can still be admitted as undeclared.

3. Students who apply below these standards still have options at USU:

    a. The Utah Board of Regents have provided an allowance for the schools who use the Admissions Index (University of Utah, Southern Utah University, and USU) to admit up to 5% of their freshmen class below their published admission standard. Thus, USU is allowed to bring in up to 5% of our freshmen class (approximately 130 students) below the approved admission standard and provide them with an opportunity to attend school.

b. In addition to the 5% allowed admission below the published standard, Regional Campuses and Distance Education (RCDE) have a second tier of admission standards that USU is able to use in admitting students. Students who have at least a 16 ACT composite score or an 85 Index Score can be admitted to USU and enroll in RCDE classes. If they accept this option, and earn 24 credits with at least a 2.5 GPA, they will be admitted to USU's main campus (J. Putnam, personal communication, August 13, 2009).

Financial Implications

There are some financial implications when students leave postsecondary institutions without obtaining a degree.

Gardner (1981) stated:

Higher education must make changes if it is to survive in anything resembling its present form. The student has become a precious commodity. Institutions must now concern themselves with retaining students so that, if nothing else, budgets can be preserved. (p. 79)

Utilization of student retention management practices may be 3-5 times more effective than costs for recruiting purposes. For example, 3-5 students who are already enrolled in college can be retained for what it will cost to recruit one student (Noel, Levitz, & Saluri, as cited in Cuseo, 2003; Rosenberg & Czepiel, as cited in Cuseo; Tinto, as cited in Cuseo).

Similarly, Bean and Hossler (as cited in Cuseo, 2003) stated that retaining one student for four years is financially equivalent to enrolling four new students for one year.

The Office of Institutional Research at Ohio University (2007) reported:

If Ohio University could retain 20 to 40 more of its leavers, increasing retention by 0.5% to 1%, in one year they would generate about $300,000 to $600,000 in additional revenue. The long-term impact from the sophomore year to graduation would be even greater, between $900,000 and $1,800,000. (p. 2)

A business model estimator has been used at Utah State University to measure the cost of the problem. The Retention Revenue Estimator model (see appendix A) was developed by Joe Vande Merwe, USU Budget Office, to demonstrate the importance of retention. For 2005-06, the overall retention rate at USU was 71.9%. With an increase in retention of .5%, the model indicated 10 students would remain in school. If USU were to have a 4.5% overall increase in retention rates totaling 76.4% for the first year, 67 students would be retained with revenues reaching approximately $202,000. However, this revenue model is not the focus of the study. The intent is not to assess but to review this model as an impact model as an indication of positive growth (A. Anderson, personal communication, April 28, 2009).

Importance of Students Obtaining an Education

Student retention involves more than just the fiscal element. It is designed to fulfill the institutions mission of promoting learning and development. Cuseo (2003) suggested that retention serves as an "outcome measurement" which institutions should incorporate to encourage "positive institutional change" (p. 3). College provides opportunities for students to think critically, acquire knowledge, and change their perspective. Cuseo further stated that such outcomes can't be measured if a student doesn't finish and graduate with a degree.

In order to be marketable in today's world, students must be better educated and trained to be more competitive and qualified to engage in the workplace (Lotkowski et al., 2004). According to the U.S. Census Bureau (2008), individuals from all races, both sexes, under 65 years of age who are employed, have a mean annual earning income of $57,529 if they have a bachelor's degree and $31,592 as a mean annual earning income with a high school diploma. By 2012, the number of jobs requiring advanced skills will grow twice as fast as jobs requiring basic skills (U.S. Department of Labor, 2008-2009; Hecker, as cited in Lotkowski et al., 2004). Statistics from the U.S. Department of Labor Occupational Outlook Handbook (2008-2009) provided projection data for different occupations requiring an education. The number of engineers employed in 2006 is projected to increase from 1,512,000 to 1,671,000 by 2016 with starting annual salaries ranging from $47,960 - $60,718. Agricultural and food scientists and technologists employed in 2006 are projected to increase from 33,000 to 36,000 in 2016 with starting

annual salaries averaging $37,908 per year. Dental hygienists employed in 2006 are projected to increase from 167,000 to 217,000 in 2016. Median hourly earnings for dental hygienists were $30.19 in May 2006. The number of lawyers employed in 2006 is projected to increase from 761,000 to 844,000 in 2016 with median annual salary earnings ranging from $75,840 - $102,470. The number of veterinarians employed in 2006 is projected to increase from 62,000 to 84,000 by 2016 with median annual earnings ranging from $40,130 to $61,029. Conversely, the number of agricultural workers employed in 2006 is projected to decrease from 859,000 to 838,000 with a median hourly wage of $9.17. Individuals employed as agricultural inspectors in 2006 are projected to decrease from 16,200 to 16,000 in 2016 with a median hourly earning of $18.32. Construction laborers employed in 2006 are projected to increase from 1,232,000 to 1,366,000 in 2016 with a median hourly wage of $12.66. Individuals employed in 2006 as drywall installers are expected to increase from 186,000 to 199,000 with a median hourly wage of $17.38. Farmworkers and laborers in crops, nurseries and greenhouses employed in 2006 are projected to decrease from 603,000 to 583,000 by 2016 with a median hourly wage of $7.95.

Students need to have postsecondary education and training beyond high school to be marketable and prepared for such job opportunities. A diploma from high school is no longer enough education to obtain employment in a "knowledge-based economy." Without additional education and training, students will face more obstacles as far as employment is concerned. Individuals who are educated have more opportunities to

secure gainful employment which will provide higher wages and benefits (Barfield &
Beaulieu, as cited in Lotkowski et al., 2004).

Institutions have a responsibility to encourage student enrollment, attendance,
persistence and graduation in a reasonable timeframe (Lotkowski et al., 2004). Further,
Swail (2004) suggested that students who leave college without a degree lose their
"initial fiscal investment" but more importantly they lose valuable "life" time.

Academic and Non-academic Factors Associated with Retention

Robbins, Allen, Casillas, Peterson, and Le (2006) indicated that graduation rates
in a 6-year period are averaging about 53% for 4-year institutions. As a result, there is
concern as to whether students are adequately prepared for college.

Habley and McClanahan (2004) worked through ACT to survey
2,459 universities (2- and 4-year institutions) requesting feedback on retention issues.
The response rate was 40.2% and the survey assessment identified five institutional
characteristics and 16 student characteristics which impacted retention at the various
universities. Institutional characteristics that were attributed to retention included
"amount of student financial aid available, student-institution fit, student involvement in
campus life, academic advising, and social environment" (p. 6). Student characteristics
identified from the surveys as having the most impact included "inadequate financial
resources, lack of motivation to succeed, inadequate preparation for college level work,
poor study skills and too many job demands" (p. 6).

Lotkowski et al. (2004) found a positive correlation between high school grade point average, ACT scores, socioeconomic status and retention in a university setting. "Non-academic factors of academic-related skills, academic self-confidence, academic goals, institutional commitment, social support, certain contextual influences (institutional selectivity and financial support), and social involvement all had a positive relationship to retention" (p. 7).

Garton, Ball, and Dyer (2002) conducted research on the relationship between academic performance and retention in College of Agriculture students. His findings indicated that in 1997 high school GPA and ACT scores were the best indicators for academic success in freshmen during the first year of college. Previous research had indicated that high school GPA was more indicative of student academic success during the first year. In 1998, students with higher GPA core scores from high school were more likely to enroll in a second year of college.

Reason (2003) looked at retention studies and merit-index which combines ACT or SAT composite scores and then takes the average test scores from "all college-bound students within the same school" (p. 185). The students are then given "credit" if they surpass the mean score for their school. However, the researcher stated that the traditional ACT score was still more effective as a predictor of retention for students. Study results indicated that high school GPA, ACT/SAT scores, gender, race/ethnicity, first year college GPA and socioeconomic status should be included in all retention studies.

Gore (2006) noted that there are several theoretical models available for institutions to utilize so they can better understand the persistence and performance levels

of their students. Some models emphasized drive (Covington, 2000; Eccles & Wigfield, 2002), combined drive and skill traits (Pintrich, 2000) or looked at personal background traits, social interaction and student commitment (Bean, 1985; Tinto, 1993) in relation to student accomplishment and persistence.

Robbins et al. (2004) completed a meta-analysis to study "relationships between psychosocial and study skill traits and academic persistence and college GPA" (p. 1). One hundred educational and psychological studies were reviewed and nine categories were identified as being "predictive of college success." These nine constructs included "achievement motivation, academic goals, institutional commitment, perceived social support, social involvement, academic self-efficacy, general self-concept, academic-related skills and contextual influences (including financial support, size of institutions, and institutional selectivity)" (p. 264). From this review, Le and associates (2005) constructed the Student Readiness Inventory (SRI).

Robbins et al. (2004) stated:

The SRI was developed to measure motivation, academic-skills, and social engagement content domains that have been identified through meta-analysis to be valid predictors of college outcomes. The motivation domain measures personal characteristics that help students focus and maintain goal-directed activity. This domain contains the Academic Self confidence (ASC) scale. SRI also includes an academic skill domain, which measures the cognitive, behavioral and affective tools students need to complete academic-related tasks and the social engagement domain, which measure interpersonal factors that influence

students' successful integration and adaptation into a postsecondary school environment" (p. 97).

Robbins and associates (2006) found three ways to determine student success including traditional (ACT/SAT scores, high school rank and GPA), demographic (socioeconomic status, gender, parent's education, annual family income and race) and psychosocial factors. Ten SRI scales and 108 questions were developed to "measure motivation (Academic Discipline, Commitment to College, General Determination, Goal Striving), skill (Communication Skills and Study Skills), social engagement (Social Activity and Social Connection), and self-regulatory (Academic Self-Confidence and Emotional Control)" (p. 600).

The researchers contacted 48 institutions and 14,642 first time students participated in taking the SRI survey during college orientation programs between June 2003 and September 2003. The study focused on retention, first year college GPA, and success in specific first year courses. After the first semester, the main predictors for retention were ACT composite score, high school GPA, commitment to college, social connection, and academic discipline. SRI scores helped to identify which first year courses were most successful at 4-year institutions. Of the psychosocial and study skill factors (PSF) variables studied, "achievement motivation" was a strong factor in college GPA and overall academic performance.

Gore (2006) discussed how self-efficacy beliefs may serve as predictors of academic achievement and retention. Such beliefs are defined as one's ability to perform academic responsibilities at a certain level (Schunk, 1991). Zimmerman, Bandura, and

Martinez-Pons (1992) found that self-efficacy beliefs were related to student's academic success as "self-regulatory behaviors" when completing assignments, taking notes, and arranging and prioritizing class work. Solberg and other researchers (as cited in Gore, 2006) developed an instrument to assess students' abilities in completing college-level tasks. The College Self-Efficacy Inventory (CSEI) was developed to provide information on students' social self-efficacy in college. Robbins et al. (2004) developed an academic self-efficacy measurement after conducting a meta-analysis in an effort to construct a multidimensional instrument for predicting college student success.

The authors evaluated relationships between psychosocial, study skills abilities and college outcomes. From this study, the researchers added a scale to the 10 SRI scales called "Academic Self-Confidence" (ASC).

Students were given both the CSEI and the ASC scales. GPA was collected for three consecutive semesters for participants. Research results indicated that the strongest indicator for academic success was the ACT composite score after three semesters, totaling 6-7% of the variance. An analysis of psychosocial and study skill factors (PSF) showed a positive relationship on retention. However, "academic goals, academic self-efficacy and academic-related skills were shown to be the strongest indicators for college retention" (Robbins et al., 2004, p. 274).

According to Astin (1999), retention can be improved through student involvement and how much time a student devotes physically and mentally to academics. Every positive experience that students had while in college encouraged their involvement and engagement. Negative elements reduced such involvement. Students

working part-time and living on campus were more likely to return to school. This experience provided an opportunity to interact with other students and faculty while on campus. More emphasis may need to be placed on student involvement for students who may not be ready for college life.

Habley and McClanahan (2004) indicated that retention rates improved through academic advising, first-year programs and support in the learning environment. Of most colleges surveyed, retention efforts were increased when students had opportunities including receiving tutoring and participating in internships.

Tinto (2006) stated that retention in the first year of college can be enhanced through advisement of students where they have an outlined plan for success. Students need supportive environments with regards to academic, social or personal issues. Numerous interactions with faculty members and other students will encourage them to stay in school. Involvement is very important to students especially in the first year when they are unsure of themselves and their connection to the institution. "Student learning is at the root of student persistence. Students who learn, are students who stay" (p. 3). Institutions need to help students to learn and become engaged in their learning, while providing feedback. Such efforts will increase student retention.

Tinto (2006) continued:

Students are more likely to stay in schools that involve them as valued members of the institution. The frequency and quality of contact with faculty, staff and other students have repeatedly been shown to be independent predictors of student persistence. . . Simply put, involvement matters, and at no point does it matter

more than during the first year of college when student attachments are so tenuous

and the pull of the institution so weak. (p. 3)

Robbins et al. (2004) indicated that social support and involvement were

connected to student retention but not academic performance. Choy (2002) reported that

the U.S. Department of Education's National Center for Education Statistics conducted a

series of longitudinal studies on students from eighth grade through the postsecondary

educational years. The results from these studies found that in 1999-2000, more women

attended and graduated from college accounting for 55% of undergraduate students.

Additionally, students leaving school were more likely to drop out of school if their

parents had not received degrees. Horn and Nunez (2000) reported that "one third of all

1992 high school graduates had at least one parent with a bachelor's or advanced degree"

(p. 12).Within 2 years of completing high school, 93% of those students enrolled in a

postsecondary institution, usually a 4-year college. Only 59% of the students whose

parents had not continued their education after high school enrolled in postsecondary

education with less than half being admitted into a 4-year institution.

Hodgkinson (1993) reviewed test data for students in the United States and found

that "parents' level of education is one of the very best predictors of students' educational

achievement" (p. 621). A child may be in an impoverished state but if his/her parents

graduate from college and move to a "middle class" area, the child's performance in

school will be equal to that of the other students' whose parents also obtained a college

education.

Bean and Vesper (as cited in Allen, 1999) designed a model regarding other variables that contributed to whether a student staying in college. Such factors included "organization" and "environmental." Research studies were conducted on students during the first year of college using "Student Background" characteristics to see what external elements may impact students' persistence. Variables included in this study were gender, ethnicity, high school rank, financial aid, parents' education, institutional support and family emotional support.

In Cardoza's (1991) study, role models were evaluated to see what impact they had on enrollment and persistence in college. Findings from the study showed the most impact on academic performance was determined by precollege academic ability, parents' education and financial aid. Retention for nonminority students appeared to be impacted the most by high school rank, parents' educational level and academic success during the freshmen year.

Results from preliminary research (Cutrona, Cole, Colangelo, Assouline, & Russell, 1994) showed that support from parents had a significant impact on a student's success in college. The study focused on the impact "parental social support" had on first- and second-year college students. Questionnaires were given to measure "perceived social support from parents, family conflict and parental achievement orientation" (p. 370). Results indicated that "parental social support" was a strong predictor of college GPA. The researchers suggested that parental support had an effect on academic success in that students contacted "parents during stressful times (i.e. during exam week) facilitating adaptive coping and positive adjustment" (p. 376). Research findings showed

that "negative characteristics of family relationships did not appear to impede achievement" (p. 377). The single element regarding parental support as a predictor of GPA, was the "reassurance of worth." Thus, parents impact their student's academic success by expressing confidence in the student's abilities.

DeBerard, Spielmans, and Julka (2004) conducted a longitudinal study with gender being chosen as a demographic element. Of those participating, 147 were women (72.1%). A hypothesis stated that males were more likely to drop out at the end of their freshmen year than female students were. Previous studies indicated that there was an "inconsistent relationship" when comparisons were made between gender and retention. GPA and SAT scores were included as predictors for academic success. The research indicated that "female gender, high school GPA and SAT scores" showed a positive relationship on cumulative GPA. However, results from the study indicated that gender was not related to academic achievement.

<center>Identifying At Risk Students</center>

Research results from a study on self-efficacy (Gore, 2006) suggested providing feedback to students regarding social and academic performance to help evaluate their overall ability to be successful in college. Assessment of self-efficacy information may help institutions to identify students who may "benefit from academic interventions such as tutoring, Supplemental Instruction, advising or study skills workshops" (p. 112).

Gore (2006) with ACT, Inc. indicated that the Student Readiness Inventory (SRI) is a tool which institutions can use to help predict academic success and retention in first

year postsecondary education students. Commitment to college and academic discipline seem to be the strongest predictors of college success and persistence. This model offers an "improvement over other methodologies" in that it takes into account non-academic factors which may have an impact on first year students.

Combining ACT or SAT scores with information received from SRI survey participants can help institutions to develop appropriate intervention programs when identifying students who may be "at-risk for attrition and academic difficulty." SRI score reports are beneficial in that they can assist advisors and students to "a) understand the types of factors that predict academic success, b) help identify personal strengths and weaknesses, and c) establish action plans to improve areas of concern" (Gore, 2006, p. 2).

Summary

Retention continues to be a problem for higher education institutions across the nation. Research indicates that the first year of college is a very critical stage as students are very vulnerable during this period of time. Tinto (1975, 1993) presented a student retention model in which he categorized factors which contribute to student attrition including "pre-entry attributes, goals/commitments, institutional experiences, integration, goals/commitments and outcome" (p. 115). Other theoretical models emphasized motivation, abilities and skills, student background, social interaction, and overall student commitment in relation to student accomplishment and persistence.

The review of literature showed USU's peer institutions and retention rates for first-year, full-time freshmen. The mean retention rate for the peer institutions was 85.2%. USU's retention rate for main campus was 71.9% for 2005-06.

There are some financial implications associated with student retention. However, there is more to retention than the fiscal element. College provides students with opportunities to think critically acquire knowledge, and change their perspective. In order to be competitive in today's global economy, a college education is imperative. Institutions have a responsibility to encourage students to enroll, attend, persist and graduate. Swail (2004) suggested that students who leave college without a degree lose their "initial fiscal investment" but more importantly lose valuable "life" time.

There are several academic and non-academic reasons why students drop out of school. Robbins et al. (2004) completed a meta-analysis of one hundred educational and psychological studies to study "relationships between psychosocial, study skills, academic persistence and college GPA. Nine constructs were found to be "predictors of college success. From this review, Le et al. (2005) developed the Student Readiness Inventory (SRI) which was designed to measure motivation, social engagement and self-regulatory abilities.

Research recommends that one of the most efficient ways to avert poor academic performance and increase student persistence is to identify "at-risk" students early and then help them in their educational progress (Beck & Davidson, 2001). Intervention methods based on test scores and GPA alone are usually limited to academic tutoring and

do not take into account other risk factors including low motivation and confidence levels, poor discipline habits, and lack of commitment to obtain a college degree.

Research on self-efficacy (Gore, 2006) indicated that providing feedback to students regarding social and academic performance is important for evaluation of overall ability to be successful in college. The SRI serves as a tool to help institutions predict academic success and retention for first year incoming freshmen. Combining this SRI student profile information with ACT scores helps institutions to develop appropriate intervention programs designed to assist students who may be "at-risk" for dropping out of school or may be experiencing academic difficulty.

CHAPTER III

METHODOLOGY

The purpose of this study was to utilize the Student Readiness Inventory™ (SRI) to profile retention rates for College of Agriculture freshmen. The population, instrument, data collection techniques and analysis procedures were selected to evaluate the retention rates for College of Agriculture first-time, full time freshmen using the Student Readiness Inventory survey administered through ACT, Inc. This chapter explains the procedures used in selecting the instrument, the population, collecting the data, and analyzing the responses to achieve the objectives of the study.

Objectives

Four objectives were established to achieve the purpose of this study. The objectives were to:

1. Describe SRI index scores using the ten subscales, retention index and academic success index for fall 2008 College of Agriculture incoming freshmen;

2. Describe student characteristics including USU GPA for fall 2008 and spring 2009, parents' education, siblings' education, the distance students lived away from home, place of residence, employment intention while attending school, graduation intentions, and plans for interruption of education;

3. Determine which student variables account for the variance in the retention and academic success indexes; and,

4. Propose an intervention model which can help target "at-risk" students during their first year of college.

Selection of Instrument

The Student Readiness Inventory (SRI) instrument administered by ACT, Inc. was selected as a tool to help profile retention rates for College of Agriculture first-time full-time freshmen. This instrument is proprietary, owned by ACT, Inc. A fee was paid by USU's College of Agriculture for students to use this instrument. Because of the proprietary nature of this instrument, questions on the survey were not provided to the researcher by ACT. However, a sample listing of SRI scales, definitions and sample items was provided (see Appendix B). ACT provided the students' high school GPA and their ACT® scores for those who responded to the online survey.

The survey had two parts which the students were asked to complete. The first section asked 108 questions developed by ACT using a 6-point Likert-type scale in which students ranked themselves based on perceived ability and importance for each competency and indicator. Responses to these questions were then reduced into the following 10 subscales: academic discipline, academic self-confidence, commitment to college, communication skills, emotional control, general determination, goal striving, social activity and social connection. The responses to each question associated with these different subscales were then scored and totaled into the Retention and Academic Success indices. In addition to the SRI survey questions, 14 additional questions were added for the students to respond to (see Appendix C). These questions related to student

characteristics including mother's education and whether the student's mother graduated

from USU as well as the father's education and if the father graduated from USU. A

question asked if the students had siblings who had attended and/or graduated from USU.

Other questions included the distance the student lived away from home during the first

year of college, living arrangements (on or off campus), marital status and the year they

graduated from high school. Inquiries were made as to whether the student planned to

work while attending USU; and, if so, how many hours the student planned to work per

week. Students were asked if they intended to graduate from USU and if they planned to

take a break in their education.

  The survey instrument was selected based on a review of literature indicating that

the SRI instrument included questions identifying psychosocial factors as well as the

academic elements of high school GPA and ACT composite scores.

  The survey instrument and email messages were reviewed by a panel of three

experts within the ASTE department and another expert outside of the ASTE department

to check for content and face validity. Comments and suggestions were utilized from the

experts to make changes in the first draft. Numerous drafts were composed and changed

before the final draft to the questions specific to Utah State University's study and email

messages were complete. The link to the survey provided to us by ACT was available for

student response from August 20 to September 26, 2009.

Selection of Population

All College of Agriculture first-time, full-time students were selected as the target population for this study ($N = 134$). A list of first-time, full-time College of Agriculture freshmen was obtained from the USU Student Orientation Advising and Registration Office (SOAR) as students must complete SOAR as part of their admission process. Email addresses for the students were obtained from the USU Banner (Access) system as well as mailing addresses for parents of students under 18 years of age.

Collection of Data

Potential participants received an email (see Appendix D) from Associate Dean, Gary Straquadine, on August 22, 2008, including a letter of information with an explanation describing why it was important for them to participate (see Appendix E). The letter included a phrase "in order to complete this survey, you must be 18 years of age." For students not meeting this age requirement, an "Opt Out Clause" was included in the letter of information which was mailed to their parent stating "I do not want my son/daughter to participate in this survey" (see Appendix F). Institutional Review Board (IRB) approval was obtained prior to this information being sent.

A tracking system was developed for students who did not respond by the end of each week. Email messages were again sent on September 5 and September 22, 2008 to these students reminding and encouraging them to complete the survey as soon as

possible (see Appendices G and H). Names of participants completing the survey were entered into a drawing for three $50 gift certificates to local food establishments.

A *t* test was performed to evaluate the potential threat of non-response error. The sample of incoming USU College of Agriculture freshmen was compared against a group that did not respond to the survey in order to determine if there was a significant difference between the two groups. The College obtained the High School GPA, ACT Scores, and USU GPAs for both groups. Since these scores were all of interval/ratio strength, the set of scores were summed to make a comparison of the two groups utilizing an independent *t* test. The analysis indicated that there was a statistically significant difference between the respondents and the non-respondents, $t(123) = 2.412$, *p* .017 (two-tailed). Further analysis indicated that the respondents of the survey had statistically significantly higher scores than the non-respondents.

Data Analysis

ACT provided survey responses for each participant. All data were then coded numerically and downloaded into the Statistical Package for Social Sciences (SPSS) 16.0 for Windows. The SPSS 16.0 allowed the researchers to accurately and quickly perform statistical analyses.

Data for Objective 1 were collected by ACT and consisted of the 10 subscales for inclusion in the SRI survey instrument as well as the retention index and academic success indices for Fall 2008 College of Agriculture incoming freshmen (first-time, full-time students). Descriptive statistics were used to analyze data provided by ACT, Inc.

Objective 2 sought to determine the characteristics of the students surveyed including USU GPA for fall 2008 and spring 2009, parents' education, siblings' education, the distance students lived away from home, place of residence, employment intention while attending school, graduation intentions, and plans for interruption of education. Descriptive statistics were used to analyze this data including specific measures of central tendency including means and standard deviations.

Objective 3 sought to determine relationship between student characteristics and the retention and academic success indexes. Stepwise multiple linear regression analyses were conducted using the Retention Index data and Academic Success data as dependent variables and student characteristics data as independent variables.

Statistics such as frequencies, means and standard deviations were used to describe the respondents.

Objective 4 was to develop an intervention model which could help advisors and administrators in the College of Agriculture to identify "at-risk" students during their first year of college. Respondents who may be "at-risk" were identified when student reports were provided by ACT with a SRI Summary Profile. The scales included academic discipline, general determination, goal striving, commitment to college, study skills, communication skills, social connection, social activity, academic self-confidence and steadiness. Each scale was scored in percentiles and provided detailed information ranking each of the areas from highest to lowest. Higher scores reflected stronger areas. Categories in which the student was weak were listed numerically as the scores declined. Definitions and descriptions were provided in each Profile to help students, advisors and

administrators to interpret the scale data showing strong or weak areas. For example, a student scored high in the Steadiness category. The definition stated "how you respond to strong feelings and how you manage those feelings. Your response indicates that you see yourself as extremely skilled at monitoring and managing your emotions. However, overcontrolling your emotions may cause unnecessary stress that can negatively affect your academic success and hinder other important activities in your life" (ACT, Inc., 2007). The SRI Summary Profile outlined areas where the student may be struggling and provided "Construct Plans for Improvement and a Recommended Plan of Action."

CHAPTER IV

RESULTS AND FINDINGS

The purpose of this study was to utilize the Student Readiness Inventory™ (SRI)
to profile retention rates for College of Agriculture freshmen. The results of this study
will help college administrators, advisors, and faculty to identify students who may be
"at-risk" for academic failure or dropping out of school and to develop intervention
models.

The students who completed the SRI were first-year, full-time freshmen in the
College of Agriculture at Utah State University. The number of responses received ($N =$
134) was 55 for a response rate of 41.0%. Of the participants, two had additional
concurrent enrollment and Advanced Placement (AP) classes which were taken in high
school. Based on these concurrent enrollment or AP courses taken in high school, one
student would have been considered a sophomore and the other would have been
considered a junior. However, all participating students were first year freshmen at USU
and were not transfer students. Of those students who completed the SRI, 76.4% were
female and 23.6% were male.

A post-hoc reliability analysis of the survey instrument questions, specific to the
Utah State study, was performed to determine if the instrument had an acceptable
reliability value. A Cronbach's alpha value of .691 was obtained.

Four objectives were established to achieve the purpose of this study. The
objectives were to:

1. Describe SRI index scores using the 10 subscales, Retention Index and Academic Success Index for fall 2008 College of Agriculture incoming freshmen;

2. Describe student characteristics including USU GPA for fall 2008 and spring 2009; parents' education; siblings' education; the distance students lived away from home; place of residence; employment intention while attending school; graduation intentions; and plans for interruption of education;

3. Determine which student variables account for the variance in the retention and academic success indexes; and,

4. Propose an intervention model which can help target "at-risk" students during their first year of college.

Objective One: Describe SRI™ Index Scores Using the Ten Subscales, Retention Index and Academic Success Index for Fall 2008 College of Agriculture Incoming Freshmen

Respondents to this survey were incoming freshmen in the College of Agriculture in 2008, having an average ACT score of 24.31($SD = 3.59$). Table 1 displays the 10 subscales showing a range of 56.93 – 70.00. The table shows SRI subscale information for USU compared to national averages for 4-year institutions.

The respondents' retention index indicated a mean score of 76.65 with a standard deviation of 19.65. According to ACT, the mean national retention index was 72.30 ($SD = 10.60$) (S. Robbins, personal communication, April 1, 2009). Figure 2 provides a comparison of USU and national mean percentile scores on the SRI subscales.

Table 1

ACT® scores, SRI™ Subscale Scores, and Retention and Academic Success Scores for College of Agriculture Incoming Freshmen

Description	USU		National	
	M	*SD*	*M*	*SD*
ACT scores	24.31	3.59	21.10	5.00

Scales	USU		Students at 4-yr Institutions[*]	
Commitment to College	64.27	27.46	53.60	31.20
Goal Striving	63.20	25.12	52.30	29.30
Academic Discipline	70.00	18.46	51.70	29.10
General Determination	68.80	21.20	52.20	29.40
Study Skills	57.31	27.20	51.60	28.90
Communication Skills	62.98	24.06	52.30	29.10
Social Activity	56.93	27.86	51.50	28.90
Social Connection	65.02	22.61	51.60	29.10
Academic Self Confidence	60.56	25.87	51.50	28.80
Steadiness	66.64	23.32	51.30	28.90
Retention Index	76.65	19.65	72.30	10.60
Academic Success Index	76.02	17.93	79.80	14.40

Note. Retention and Academic Success Indices are derived by ACT, Inc. using ACT scores and then the 10 subscales are described.
[*]*N* = 8,508 (based on 4-year institutions from norming study). *M* = Mean, *SD* = Standard Deviation. Lower scores reflect more risk. Refer to the SRI User Guide for technical information about the SRI scales.
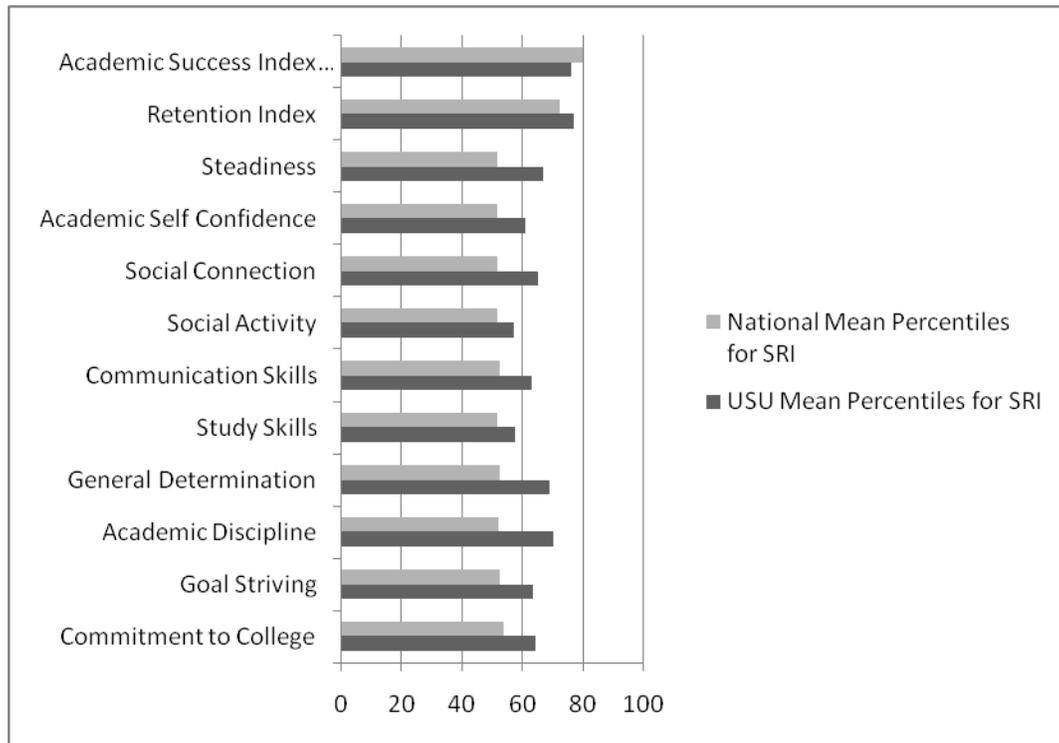
Figure 2. SRI subscale mean percentiles for incoming freshmen in the College of Agriculture during 2008 at USU and national mean percentiles for 4-year institutions.

The mean academic success index for College of Agriculture incoming freshmen was 76.65 (*SD* = 17.93). According to ACT, the national mean academic success index was 79.80 (*SD* = 14.40) (S. Robbins, personal communication, April 1, 2009).

Objective Two: Describe Student Characteristics Including USU GPA for Fall 2008

and Spring 2009; Parents' Education; Siblings' Education; The Distance Students Lived

Away From Home; Place of Residence; Employment Intention While Attending School;

Graduation Intentions; and Plans for Interruption of Education

The majority of respondents were female (76.4%). All of the respondents were

unmarried and 87.3% graduated from high school in 2008. The College of Agriculture

freshmen mean GPA for Fall semester 2008 was 3.12 ($SD = 0.81$). The mean GPA for

Spring semester 2009 was 2.75 ($SD = 1.24$). The mean cumulative USU GPA was 3.12

($SD = 0.67$). Animal, Dairy and Veterinary Sciences was the major most commonly

reported by respondents (41.8%), with Nutrition and Food Sciences (16.4%) and

Agribusiness (10.9%) as the next most commonly reported majors. Results are

summarized in Table 2. The race or ethnic group identified most often by first-time

freshmen respondents was Caucasian/American/White (90.9%). See Table 3.

College of Agriculture incoming freshmen mean for high school GPA

was 3.61 ($SD = 0.34$). Respondents were asked about their mothers' education with

"some" college (38.2%) being reported most often, graduated college (30.9%) and high

school (16.4%) being reported next most often. Results are reported in Table 4.

A majority of respondents (87.3%) indicated that their mothers had not graduated

from USU. Two students responded regarding their mother's education (other) category

in the survey questions. One response indicated their mother's education (other) included

beauty school and the other respondent stated their mother's education included nursing

school in Mexico.

Table 2

College of Agriculture Incoming Freshmen by Major

Major	*f*	%
Animal, Dairy and Veterinary Sciences	23	41.8
Nutrition and Food Sciences	9	16.4
Agribusiness	6	10.9
Family & Consumer Sciences Education	4	7.3
Horticulture	4	7.3
Agricultural Communications	3	5.5
Agricultural Education	2	3.6
Crop Science	2	3.6
Agricultural Systems Technology and Education	1	1.8
Environmental Soil/Water Science	1	1.8
Total	55	100.0

The most common response provided regarding respondents' fathers education

was graduated college (34.5%), with high school (21.8%) and post college (18.2%) being

reported next most often. Results are reported in Table 5.

Table 3

Race or Ethnic Group Identification for Incoming Freshmen

Race/Ethnic Group	*f*	%
Caucasian/American/White	50	90.9
Multiracial	4	7.3
Hispanic	1	1.8
Total	55	100.0

Table 4

Incoming Freshmen Mother's Highest Level of Education

Highest Level of Education	*f*	%
Some College	21	38.1
Graduated College	17	30.9
High School	9	16.4
Post College	3	5.5
Vocational Education	3	5.5
Other	2	3.6
Total	55	100.0

A majority of respondents (83.6%) indicated that their fathers had not graduated from USU. The majority of respondents stated that their siblings had not attended USU (70.9%) or had not graduated from USU (90.9%). Table 6 provides a summary of this information.

Table 5

Incoming Freshmen Father's Highest Level of Education

Highest Level of Education	f	%
Graduated College	19	34.5
High School	12	21.8
Post College	10	18.2
Some College	9	16.4
Vocational Education	5	9.1
Total	55	100.0

Table 6

Siblings of Incoming Freshmen Educated and Graduated from USU

Siblings Attended USU	Attended	
	f	%
No	39	70.9
Yes	15	27.3
None	1	1.8
Total	55	100.0
Graduated		
No	50	90.9
Yes	4	7.3
None	1	1.8
Total	55	100.0

The largest proportion of student respondents lived 101 – 200 miles away

(25.5%), 1 – 30 miles away (21.8%) and 61 – 100 miles away (20.0%) from Utah State

University. Table 7 describes the results.

Table 7

Distance Incoming Freshmen Lived from Home

Distance From Home	*f*	%
1 – 30 miles	12	21.8
31 – 60 miles	8	14.5
61 – 100 miles	11	20.0
101 – 200 miles	14	25.5
Over 200 miles	10	18.2

The majority of respondents (52.7%) planned to live off campus during the 2008-

09 school year while attending Utah State University. The balance of respondents

planned to live on campus. The majority of incoming freshmen planned to work (83.6%)

while they attended school at Utah State University. The average number of hours

respondents reported they planned to work each week was 16.60 ($SD = 10.63$). The

majority of respondents (98.2%) indicated they intend to graduate from Utah State

University. The majority of respondents (83.6%) do not plan to take a break in their

education at Utah State University.

Objective Three: Determine Which Student Variables Accounted for

the Variance in the Retention and Academic Success Indexes

A stepwise multiple linear regression was performed on the variables utilizing the

Retention Index as the dependent variable and demographic and survey variables as the

independent variables (Table 8). The regression was performed at the .05 level of

significance a priori. Overall, the regression model indicated that two variables were

statistically significantly related to the Retention Index, $F(2, 50) = 61.763$, $p = .000$.

Further, the model indicated that the two variables, ACT scores and whether the father of

the respondent graduated from USU, accounted for 71.2% of the Retention Index

variance in the 2008-09 USU College of Agriculture incoming freshmen ($R = .844$). For

the analysis, the researcher utilized 18 demographic and survey variables. The two

variables that were statistically significant were ACT score, $p = .000$ and whether or not

the father graduated from USU, $p = .024$. Further analysis specified that ACT score was

statistically significantly positively related to the Retention Index. As ACT scores

increased, the Retention Index tended to be high. As ACT scores were lower, the

Retention Index tended to be lower. The second significant variable was whether or not

the student's father graduated from USU. This variable was also positively related. As is,

the retention index score was higher, the student's father tended to have graduated from

USU while students with lower retention index scores tended to be from homes where the

father did not graduate from USU.

Table 8

Stepwise Multiple Regression Analysis of Retention Index with Demographic and Survey Variables

Independent Variables	Beta	t	p
ACT Score	+0.841	+11.036	.000*
Father Graduated from USU	+0.177	+ 2.324	.024*
Gender	-0.145	- 1.875	.067
Highest Level of Father's Education	+0.130	+1.725	0.91
Plan to Take a Break in Education	-0.117	-1.549	.128
Work How Many Hours Per Week	-0.113	-1.479	.146
Race/Ethnicity	+0.103	+1.356	.181
Major	+0.101	+1.332	.189
Distance from Home	-0.086	-1.120	.268
Work While Attending School	-0.076	-0.991	.327
High School GPA	+0.067	+0.780	.439
Mother Graduated from USU	+0.063	+0.732	.468
High School Graduation	+0.054	+0.669	.507
Siblings Graduated from USU	+0.040	+0.500	.620
Intend to Graduate from USU	-0.032	-0.410	.684
Siblings Attended USU	+0.033	+0.410	.684
Highest Level of Mother's Education	+0.030	+0.382	.704
Living Arrangements	-0.029	-0.371	.712

* Indicates statistical significance at the .05 level.

A stepwise multiple linear regression was performed on the variables utilizing the Academic Success Index as the dependent variable and demographic and survey variables as the independent variables (see Table 9). Overall, the regression model indicated that three variables were statistically significantly related to the Academic Success Index, $F(3, 49) = 71.022$, $p = .000$. The model indicated that the three variables explained an 81.3% of the Academic Success Index variance for the 2008-09 USU College of Agriculture incoming freshmen ($R = .902$). The researcher employed 18 demographic and survey variables. The three variables that were statistically significant were ACT score, $p = .000$, whether the student's mother graduated from USU, $p = .008$, and the distance the student lived away from home, $p = .013$. Additional analysis indicated that ACT score was statistically significantly positively related to the Academic Success Index. As ACT scores increased, the Academic Success Index tended to be high. As ACT scores were lower, the Academic Success Index tended to decrease. The second significant variable was whether or not the student's mother graduated from USU. This variable was also positively related. If the respondent's mother graduated from USU, the academic success index tended to increase. Further, if the respondent's mother did not graduate from USU, the academic success index tended to decrease. The third significant variable was the distance the student lived from home. This variable was negatively related. The further the respondent lived from USU, the more likely the academic success index decreased. The closer the respondent lived from USU, the academic success index tended to increase.

Table 9

Stepwise Multiple Regression Analysis of Academic Success Index with Demographic and Survey Variables

Independent Variables	Beta	t	p
ACT Score	+0.899	+14.293	.000*
Mother Graduated from USU	+0.172	+ 2.767	.008*
Distance From Home	-0.163	- 2.565	.013*
Work How Many Hours Per Week	-0.105	- 1.685	.098
Gender	-0.106	- 1.652	.105
High School GPA	+0.104	+ 1.505	.139
Plan to Take a Break in Education	-0.091	- 1.464	.150
Living Arrangements	-0.093	- 1.426	.160
Father Graduated from USU	+0.097	+ 1.399	.168
Highest Level of Mother's Education	+0.083	+ 1.325	.191
Race/Ethnicity	+0.071	+ 1.141	.260
Major	+0.067	+ 1.068	.291
Highest Level of Father's Education	+0.045	+ 0.722	.474
Intend to Graduate From USU	-0.040	- 0.631	.531
Work While Attending School	-0.031	- 0.476	.636
High School Graduation	+0.029	+ 0.441	.661
Siblings Attended USU	+0.027	+ 0.418	.677
Siblings Graduated from USU	-0.001	- 0.010	.992

*Indicates statistical significance at the .05 level.

Objective Four: Propose an Intervention Model Which Can Help Target

"At-Risk" Students During Their First Year of College

Results from the research study indicated that overall retention for incoming freshmen in the College of Agriculture was significantly impacted by ACT scores and if the respondent's father had graduated from USU. Academic success for respondents was significantly impacted by ACT scores, if the student's mother had graduated from USU and the distance the student lived from home. All of these factors are attribute variables which cannot be changed. With regards to the 10 SRI subscales, the respondents scored lowest in social activity, study skills, academic self confidence and communication skills. These factors are nonattribute variables and can be changed. Thus, students scoring lower in these subscales have been identified and intervention activities can be developed to improve skills in these specific areas. Intervention strategies may include more intrusive advising for "at-risk" students through College of Agriculture academic advisors once information is received from ACT for incoming freshmen. The end result would be to develop academic programs designed specifically to help students improve lower psychosocial abilities identified through SRI results.

CHAPTER V

CONCLUSIONS, RECOMMENDATIONS, AND IMPLICATIONS

Conclusions

Based upon the findings of the study, the following conclusions were drawn. USU's retention mean index for incoming freshmen in the College of Agriculture was greater than the national retention mean index but the standard deviation is wide. This may be attributed to the small sample size and the respondents being homogeneous. USU's academic success mean index was below the national academic success mean index which may indicate that incoming freshmen in the College of Agriculture may be less likely to succeed in their academic pursuits. These students may be more "at-risk" for not completing school. Variables which may contribute to student retention include ACT® scores and whether the respondents' father graduated from USU. This was indicated by Lotkowski et al. (2004) as they found a positive correlation between high school grade point average, ACT scores, socioeconomic status and retention in a university setting. Reason's (2003) study indicated that high school GPA, ACT scores, gender, race/ethnicity, first year college GPA and socioeconomic status should be included as variables in all retention studies. Variables which may be factors in student academic success were ACT score, whether the student's mother graduated from USU, and the distance the student lived away from home. Garton et al. (2002) found that high school GPA and ACT scores were the best indicators for academic success in freshmen during the first year of college. Tinto's model (1993) described pre-entry attributes as

family/community background which involved social status, parents education, and the size of community in which the student resided. ACT scores, parents' education, and the distance a student lives away from USU are attribute variables which we cannot control. However, USU is making an effort to encourage students of alumni to attend USU. This is manifested through Legacy scholarships which are available to students of alumni who live outside the state of Utah. The alumni must have graduated with an associate's degree or higher.

Research results indicated that incoming freshmen in the College of Agriculture scored lower in the psychosocial areas of social activity, study skills, academic self confidence, and communication skills. Lotkowski et al. (2004) stated, "Non-academic factors of academic-related skills, academic self-confidence, academic goals, institutional commitment, social support, certain contextual influences (institutional selectivity and financial support), and social involvement all had a positive relationship to retention" (p. 7). Robbins at al. (2006) found three ways to determine student success including traditional (ACT/SAT scores, high school rank and GPA), demographic (socioeconomic status, gender, parent's education, annual family income and race) and psychosocial factors. The SRI™ instrument was developed to "measure motivation, skills, social engagement and self-regulatory." Reason et al. (2006) discussed the importance of students developing knowledge and cognitive abilities during their first year of college and the impact it may have on their long term learning and persistence. Prior research (Pascarella & Terenzini, as cited in Reason et al., 2006) projected that students in the first two years of college acquire 80-95% of their knowledge base in English, science and

social studies. Between 63 – 90% of critical thinking skills are developed during the

student's first 2 years in college. Reason and associates (2006) completed a study to

identify what factors influenced "academic success and persistence among first-year

college students" (p. 150). Research results indicated there are several factors which

contribute to a student's first year of college including "students' experiences, faculty and

peer cultures and environments, and institutional policies" (p. 171). If the student feels

connected to other students, faculty and the institution, and is academically successful

during the first year of college, the more likely the student is to return to school the

following year. ACT (as cited in Reason et al., 2006) reported that the first year of

college is crucial to the student's learning as well as establishing a foundation for

scholastic success and retention in subsequent years.

USU proactively provides help and support through various programs to incoming

freshmen. Such programs include Student Orientation, Advising and Registration

(SOAR); Connections; Early Alert and the Aggie Passport. These programs are promoted

and sponsored by the First Year Experience and Retention Office and provide

opportunities for students to interact and network with other students as well as USU

faculty and staff. Additional services are available including Supplemental Instruction

(SI), the Disability Resource Center, Student Support Services, learning communities and

intrusive advising through individual USU departments or college advising centers. The

College of Agriculture may need to be more proactive in assisting incoming freshmen to

be more successful academically which will encourage the students to remain in school

increasing retention numbers.

Purpose and Objectives

The purpose of this study was to utilize the Student Readiness Inventory (SRI) to profile students determining psychosocial characteristics that contribute to academic success and retention for College of Agriculture freshmen. SRI has been developed to help measure psychosocial factors that are related to academic achievement and college student retention. This information, combined with high school GPA and admission test scores (ACT and/or SAT) will help advisors and administrators in the College of Agriculture identify potential at-risk students during their first year in college. From SRI test results, a model for intervention will be evaluated and built to meet students' specific psychosocial needs, encourage their persistence in obtaining a degree, and enhance their college experience. To achieve this purpose the following objectives guided this study:

1. Describe SRI index scores using the ten subscales, retention index and academic success index for fall 2008 College of Agriculture incoming freshmen;

2. Describe student characteristics including USU GPA for fall 2008 and spring 2009, parents' education, siblings' education, the distance students lived away from home, place of residence, employment intention while attending school, graduation intentions, and plans for interruption of education;

3. Determine which student variables account for the variance in the retention and academic success indexes; and,

4. Propose an intervention model which can help target "at-risk" students during their first year of college.

Recommendations

Recommendations from the study include the following:

1. The College of Agriculture should continue using the Student Readiness

    Inventory (SRI) as a tool to profile students annually to gather research data

    and information for further analysis regarding retention and academic success

    for incoming freshmen. The College of Agriculture should interpret the data

    and then provide individual SRI student profile reports to advisors and

    administrators so students, who may be "at-risk" for dropping out of school,

    can be identified and receive additional help whether through more intrusive

    advising and/or development of other intervention programs.

2. In order to better serve incoming freshmen, students should be required to

    complete the SRI survey. This could be achieved by having students complete

    the SRI survey as part of the USU admissions process when they declare their

    College of Agriculture major with admittance predicated on their completion

    of this task. Require students to complete the survey prior to meeting with

    their academic advisor as part of the SOAR process. If not completed

    previously, students would be required to fill out the survey as part of a

    mandatory class, such as the introduction classes offered in each department

    and/or the USU 1010 Connections class. In 2008, the students completed the

    survey on a voluntary basis and the sample size was adequate. A broader,

    more longitudinal sample would allow the college to track trends that need to

be addressed. If more students had participated in the SRI survey, there would be better representation from the incoming freshmen population. Such information would allow advisors and administrators the opportunity to provide better customer service and help freshmen students who may be struggling academically.

3. Create a step-by-step process for implementation of the SRI instrument. The process could include the following steps:

    a. Incoming freshmen would complete the SRI survey within two weeks of beginning their first semester at USU and then ACT would provide the data to the College of Agriculture.

    b. The data would then be interpreted and compiled by the College of Agriculture. Student profile information would be provided to advisors and administrators four-six weeks after the beginning of the semester. This data will identify potential students who may be "at risk" for dropping out of school.

    c. The students would then be required to meet with their academic advisor to discuss their profile information reviewing strengths, weaknesses and plans for improvement before registering for the next semester of classes.

    d. The student would then enroll in the College of Agriculture's required one-credit course during the first year to assist with study skills, academic self confidence and communication skills.

e. Assess students' improvement through end of semester GPA in comparison to their SRI profile information.

4. Design and implement a required one-credit course specifically for incoming freshmen in the College of Agriculture to be taught during the first year. This course would be part of the core curricula for students in the College of Agriculture and would be a graded course. The class would address specific psychosocial needs in areas where students are scoring lower based on SRI results received from ACT. The results from this research study indicated that incoming freshmen scored lower in social activity, study skills, academic self confidence, and communication skills. Syllabus topics could include discussions on the importance of agriculture in today's world; provide overview information about each department; activities and assignments to develop improved study skills, academic self confidence, communication skills, or other psychosocial areas as needed. Sidle and McReynolds (1999) found that a freshman-year experience course can be a useful plan for encouraging student success. Research results indicated that students participating in this course tended to have higher cumulative GPAs and completed more attempted credit hours than students who didn't enroll in the course. Class evaluations from 67% of the student participants indicated that the course helped them to understand the reason for a university education, encouraged them to feel more connected to the campus community, and increased their self efficacy belief that they could be successful at their chosen

institution. The students' evaluation of this course enforces the need to focus

efforts in helping students develop their academic and intellectual abilities and

gain self-identity (Pascarella & Terenzini, as cited in Sidle & McReynolds;

Upcraft & Gardner, as cited in Sidle & McReynolds). Stovall's research

(2000) found a "positive relationship between participation in a student

success course and academic performance, persistence, and graduation".

Students participating in success courses tended to have higher GPAs during

their first semester and were more likely to continue their educational pursuits

for a second semester and subsequent years. Integrating students into the

college setting through participation in a success course had a "positive

impact on both their short-term and long-term academic performance and

persistence" (p. 47).

It is suggested that the "On Course" program be explored as a potential

tool in this class to encourage students to be more engaged in their educational

process. Students would learn to identify and change their "beliefs and

behaviors" which may be inhibiting their academic development (On Course,

1996). This program tries to encourage students to take more responsibility for

their education through increased motivational efforts. Acquiring these skills

is important for student success in college and the workplace. "On Course" is

one of many "canned products" which could be used to assist students.

However, it may not meet all of their needs. Improved efforts in these areas

can help increase academic success and overall retention rates for incoming

freshmen in the College of Agriculture. Social skills could be improved as students interact with one another from all different disciplines in the college during the class. Students completing the class may feel a closer social connection to the college as well as to their own individual major departments. Chickering and Gamson (1987) stated:

Learning is enhanced when it is more like a team effort than a solo race. Good learning, like good work, is collaborative and social, not competitive and isolated. Working with others often increases involvement in learning. Sharing one's own ideas and responding to others' reactions improves thinking and deepens understanding. (p. 1)

Tinto (2006) stated that retention in the first year of college can be enhanced through advisement of students where they have an outlined plan for success. Students need supportive environments in the academic, social or personal issues. Numerous interactions with faculty members and other students will encourage them to stay in school. Involvement is very important to students especially in the first year when they are unsure of themselves and their connection to the institution. "Student learning is at the root of student persistence. Students who learn, are students who stay" (p. 3).

Institutions need to help students to learn and become engaged in their learning, while providing feedback. Such efforts will increase student retention. Tinto (2006) continued:

Students are more likely to stay in schools that involve them as valued members of the institution. The frequency and quality of contact with faculty, staff and other students have repeatedly been shown to be independent predictors of student persistence. . . . Simply put, involvement matters, and at no point does it matter more than during the first year of college when student attachments are so tenuous and the pull of the institution so weak. (p. 3)

Such skills could be enhanced as students participate in College of Agriculture activities, becoming involved with the Agricultural Council, Agricultural Ambassadors and/or joining a club either in departments or college-wide. Students with connections to the College of Agriculture through such interactions may be rejuvenated and recommitted to pursing academic goals and obtaining a degree at USU.

5. Many universities (50 – 75% or more) offer an orientation course to satisfy areas in which student deficiencies may exist. USU offers USU 1010, Connections, which is an optional course for students to enroll in during their first semester of college. This course offers information to students regarding academic strategies, time management, and connecting to campus. However, there is a limit to the Connections course and an overlap of psychosocial needs which this course does not fulfill. Thus, Connection courses may need to be improved and fortified to include additional competency areas in which students may be lacking. SRI results provide us with information on students

scoring lower in certain psychosocial areas. An intervention course needs to

be available which can help students to increase competency levels in the

deficient skill areas which have been identified. Students scoring lower in

psychosocial areas (70% or lower) would be required to complete learning

modules in the areas where they are deficient. Such modules would be

designed as noncredit bearing and with no tuition costs being imposed.

Students identified as being "at risk" for dropping out of school from SRI

results would be required to complete the modules in which they received

lower scores. These modules would be part of the major requirements which

students need to complete in the College of Agriculture similar to how the

Computer Information Literacy (CIL) program operates on the USU campus.

Low scoring students would be required to complete the modules during their

first year of college and holds would be placed on their records until these

requirements were met. Students who scored higher in the psychosocial areas

(71 – 100%) would not be required to complete the learning modules. This

would be an innovative approach to intervention without causing excessive

burden on students. A course outline for the learning modules is shown in

Appendix I. Due dates for module completion would be established by the

academic advisors in the College of Agriculture.

Implications

The SRI is a very effective tool which can be utilized to help identify incoming freshmen students who may be "at-risk" for dropping out of school due to psychosocial or academic variables. The information provided in the SRI summary profile can help students, advisors and administrators to identify strong and weak areas so intervention programs or activities can be designed to assist students with improving abilities where they may be deficient. Further utilization of the SRI program may provide data on student trends in the future with regards to retention and academic success as the College of Agriculture moves towards a new central advising center.

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APPENDICES

Appendix A: Retention Revenue Estimator

Retention Revenue Estimator

Background Information

	2005-06 Students[1]	Revenue
Gross Tuition for Undergraduates	11,120	$46,259,085 [3]
Institutionally Funded Grant Aid		$14,320,029 [4]
Net Revenue for Undergraduates		$31,939,056
Avg. Net Tuition per Student		$2,872
Full time 1st year students	1,906 [5]	

Current First-to-Second Year Retention Rate

Year	Rate
2001	69.6%
2002	74.5%
2003	73.1%
2004	70.4%
avg	71.9% [2]

Continued to 3rd Year Rates

Year	-> to 2nd	-> to 3rd	con't rate
2000	72.3%	57.8%	79.9%
2001	69.6%	55.7%	80.0%
2002	74.5%	61.6%	82.7%
2003	73.1%	60.2%	82.4%
avg			81.3%

Continued to 4th Year Rates

Year	-> to 3rd	-> to 4th	con't rate
1999	58.0%	49.3%	85.0%
2000	57.8%	48.1%	83.2%
2001	55.7%	45.3%	81.3%
2002	61.6%	49.2%	79.9%
avg			82.4%

Analysis

	Tuition Increase	Average Net Tuition per Student	Retention Rates (above)	
Yr 1	5.00%	$3,016	71.9%	
Yr 2	5.00%	$3,166	81.3%	constant through model
Yr 3	5.00%	$3,325	82.4%	

1st to 2nd Year Retention Rate	current 71.9%	0.5% 72.4%	0.5% 72.9%	0.5% 73.4%	0.5% 73.9%	0.5% 74.4%	0.5% 74.9%	0.5% 75.4%
Continuing Students (full time 1st year students * retention rate)								
1st Year	1,370	1,380	1,389	1,399	1,409	1,418	1,428	1,437
2nd Year	1,113	1,121	1,129	1,137	1,145	1,152	1,160	1,168
3rd Year	917	923	930	936	943	949	955	962
Lost Students (Full time 1st year students - continuing students)								
1st Year	536	526	517	507	497	488	478	469
2nd Year	793	785	777	769	761	754	746	738
3rd Year	989	983	976	970	963	957	951	944
Saved Students vs Orig. Retention Rate (Lost students at current retention rate - Lost students at new retention rate)								
1st Year	0	10	19	29	39	48	58	67
2nd Year	0	8	16	24	32	39	47	55
3rd Year	0	6	13	19	26	32	38	45
Revenue of Saved Students (Saved students * average net tuition per student * tuition increase)								
1st Year	$0	$30,160	$57,304	$87,464	$117,624	$144,768	$174,928	$202,072
2nd Year	$0	$25,328	$50,656	$75,984	$101,312	$123,474	$148,802	$174,130
3rd Year	$0	$19,950	$43,225	$63,175	$86,450	$106,400	$126,350	$149,625
Cumulative Revenue from Saved Students (Revenue of saved students over three years)								
	$75,400	$151,200	$226,600	$305,400	$374,600	$450,100	$525,800

F:\Thesis\[Retention Revenue Estimator Revised.xls]Sheet1
9/26/2006

Issues & Benefits
Documents possible additional revenue sources
We have control of the inputs into the model
Pulls data from reliable and constant sources
Quantifies what we assume intuitively
Aids dialogue with new students, 1st year experience staff, departments, etc
Helps quantify strategic decisions for retention

Sources:
[1] 2005-06 Common Data Set (CDS) B1 Full-Time Degree Seeking First-Time Freshmen
[2] 2005-06 CDS B22 (Average of the 4 most recent years retention rates)
[3] 2005-06 R-1 Actual, Res & NonRes UG Gross Tuit.
[4] 2005-06 CDS H1 Aid Awarded to Enrolled Undergraduates (Non-need-based - Institutional, Tuition Waivers, Athletic Awards)
[5] 2005-06 R-1 Actual, Res & NonRes UG Annualized FTE
[6] Analysis Office / KJH / c:\excel\ir\graduation\Graduation Rates\USU-Main Campus
1997_2005/6/21/2006/2:43 PM

Appendix B: List of SRI Scales, Definitions and Sample Items Provided by ACT

SRI Scale	Definition	Sample Item
Academic Discipline	The amount of effort a student puts into schoolwork and the degree to which a student is hardworking and conscientious.	I consistently do my school work well.
Academic Self-Confidence	The belief in one's ability to perform well in school.	I achieve little for the amount of time I spend studying.
Commitment to College	One's commitment to staying in college and getting a degree.	A college education will help me achieve my goals.
Communication Skills	Attentiveness to others' feelings and flexibility in resolving conflicts with others.	I'm willing to compromise when resolving a conflict.
Emotional Control	One's responses to and management of strong feelings.	I have a bad temper.
General Determination	The extent to which one strives to follow through on commitments and obligations.	It is important for me to finish what I start.
Goal Striving	The strength of one's efforts to achieve objectives and end goals.	I bounce back after facing disappointment or failure.
Social Activity	One's comfort in meeting and interacting with other people.	I avoid activities that require meeting new people.
Social Connection	One's feelings of connection and involvement with the college community.	I feel part of this college.
Study Skills	The extent to which students believe they know how to assess an academic problem, organize a solution, and successfully complete academic assignments	I summarize important information in diagrams, tables or lists.

Appendix C: Additional Questions Provided to ACT to Be Included with the SRI Survey

for Incoming Freshmen in the College of Agriculture

Additional questions to be added to Student Readiness Inventory for Fall 2008

Highest level of mother's education	High school Vocational education Some college Graduated college Other _____
Did your mother graduate from USU?	Yes No
Highest level of father's education	High school Vocational education Some college Graduated college Post college Other _____
Did your father graduate from USU?	Yes No
Have any of your siblings attended USU?	Yes No
Have any of your siblings graduated from USU?	Yes No
Distance from home to Logan you travel to attend school?	1 – 30 miles 31 - 60 miles 61 – 100 miles 101 – 200 miles Over 200 miles
Are you married?	Yes No
Year of high school graduation	prior to 2003 2003 2004 2005 2006 2007

2008

Are you living on or off campus	On Campus
	Off Campus
Are you planning to work while attending school?	Yes
	No
If so, how many hours do you plan to work per week?	_____/hours/week
Do you intend to graduate from USU?	Yes
	No
Do you plan to take a break in your education?	Yes
	No

Appendix D: Email Invitation to Incoming Freshmen in the College of Agriculture from

the Associate Dean

Lisa Allen

From: Lisa Allen
Sent: Friday, August 22, 2008 12:50 PM
To: Lisa Allen; Brian Warnick; Gary Straquadine
Subject: Invitation from Associate Dean

Dear College of Agriculture Undergraduate:

Welcome to Utah State University and the College of Agriculture. Your college career has begun! The anticipation and details in preparing to study in Logan have given way to your enrollment in a great College of Agriculture at a great university.

I am sending you this email to invite your participation in a study of College of Agriculture freshmen. Our goal is to assess your strengths and weaknesses in various areas related to college success. This study will help us help you have a complete university experience. We plan to measure a number of psycho-social dimensions of your interests and attributes. This no-risk inventory of College of Agriculture students will provide us with the best information to plan and implement programs for your success.

Your participation is voluntary. You are under no obligation to complete the survey. However, it is only with your involvement that we can develop ways to help you and your classmates achieve your academic goals at Utah State University. A strong response rate will more accurately reflect the needs of College of Agriculture freshmen in 2008.

To access the on-line survey, you will need to click on the link:

http://corp.inetu.act.org/sri/utahstate

You will login using your USU A-number. The survey will ask you a series of questions regarding your academic goals. We ask a few questions about your background and preparation for enrollment at Utah State.

Please respond by September 12, 2008. I recommend you click on the link and complete the survey today. It will take you less than 30 minutes to complete. All responses will be recorded without identifying information and all data will be reported in groups – no individual data will be reported. These practices will maintain your anonymity in this study.

Data will be encrypted and stored on a password protected computer. Data will only be used for this College of Agriculture study and will not be used by or distributed to third parties. The study has been approved by the Utah State University Institutional Review Board.

From all the completed responses, we plan to have a drawing for three $50 gift certificates at local Cache Valley restaurants. I hope this small incentive will prompt you to complete the survey.

If you have any questions or concerns regarding this study, please contact me by telephone at 797-3521 or email me at: gary.straquadine@usu.edu. I look forward to your participation.

Sincerely

Gary Straquadine
Associate Dean – College of Agriculture

Appendix E: Letter of Information Sent with Email Invitation to Incoming Freshmen in

the College of Agriculture on August 22, 2009

June 13, 2008

INFORMED CONSENT
Implementing a Retention Model for Incoming Freshmen in the College of Agriculture at Utah State University

Introduction/Purpose Professor Brian Warnick in the Department of Agricultural Systems Technology and Education at Utah State University is conducting a research study to determine if incoming freshmen in the College of Agriculture are ready for college through use of a Student Readiness Inventory (SRI) survey instrument. You have been asked to take part as you are an incoming freshmen in the College of Agriculture beginning Fall semester 2008. There will be approximately 225 total participants in this research.

Procedures If you agree to be in this research study, you will be asked to complete the online Student Readiness Inventory (SRI) survey instrument one time before September 5, 2008. The survey will take you approximately 30 minutes to complete. We ask that you respond to each survey question as honestly and completely as possible.

New Findings During the course of this research study, you will be informed of any significant new findings (either good or bad), such as changes in the risks or benefits resulting from participation in the research, or new alternatives to participation that might cause you to change your mind about continuing in the study. If new information is obtained that is relevant or useful to you, or if the procedures and/or methods change at any time throughout this study, your consent to continue participating in this study will be obtained again.

Risks There are not anticipated risks to the individuals who participate in this study.

Benefits There may or may not be any direct benefit to you from these procedures. The investigator, however, may learn more about first year students and their readiness to enter and remain in college through use of the SRI test results.

Explanation & offer to answer questions Dr. Warnick has explained this research study to you and answered your questions. If you have any other questions or research-related problems, you may reach Dr. Warnick at (435) 797-0378.

Extra Cost(s) There will be no cost to students who participate in this research study.

Payment Names of participants completing the survey will be entered into a drawing for three $50 gift certificates to local food establishments.

Voluntary nature of participation and right to withdraw without consequence
Participation in this research study is entirely voluntary. You may refuse to participate or withdraw at any time without consequence or loss of benefits.

Confidentiality Research records will be kept confidential, consistent with federal and state regulations. Only Dr. Brian Warnick, Dr. Gary Straquadine and Lisa Allen will have access to the data which will be kept in a locked file cabinet in a locked room. An algorithm will be used to create new code numbers in lieu of using student numbers in order to maintain anonymity for the survey instrument. Personal, identifiable information will be kept for four years to be used for longitudinal study purposes.

IRB Approval Statement The Institutional Review Board for the protection of human participants at USU has approved this research study. If you have any questions or concerns about your rights, you may contact IRB at (435) 797-1821.

Copy of consent You may print this informed consent and retain it for your files.

Investigator Statement "I certify that the research study has been explained to the individual, by me or my research staff, and that the individual understands the nature and purpose, the possible risks and benefits associated with taking part in this research study. Any questions that have been raised have been answered."

Signature of PI and student or Co-PI

_____

Signature of PI
Brian Warnick
Principal Investigator
(435) 797-0378

Agreement of Participant By submitting the online survey, I agree to participate.

Appendix F: Parent Permission Letter Sent to Incoming Freshmen in the College of

Agriculture Who Were Not 18 Years of Age

UtahState
UNIVERSITY.

College of Agriculture
Dept. of Agricultural Systems Technology & Education
2300 Old Main Hill
Logan UT 84322-2300
Telephone: (435) 797-0378
Fax: (435) 797-4002

Parent Permission
Implementing a Retention Model for Incoming Freshmen in the College of Agriculture at Utah State University

Introduction/Purpose Professor Brian Warnick in the Department of Agricultural Systems Technology and Education at Utah State University is conducting a research study to assess the Student Readiness Inventory (SRI) as a retention tool for College of Agriculture freshmen. Your permission is being requested to have your student take part in this study because s/he is an incoming freshman in the College of Agriculture beginning Fall semester 2008. There will be approximately 225 total participants in this research.

Procedures Students will be asked to complete the online Student Readiness Inventory (SRI) survey instrument one time before September 5, 2008. The survey will take approximately 30 minutes to complete. We ask that students respond to each survey question as honestly and completely as possible. Demographic information including age, gender, race/ethnicity, high school GPA, admission test scores (ACT/SAT), and student full or part-time status.

Risks There are no anticipated risks in participating in this study.

Benefits There may not be any direct benefit at this time from these procedures. The investigator, however, may learn more about first year students and their readiness to enter and remain in college through use of the SRI test results.

Explanation & offer to answer questions If you have any other questions or research-related problems, you may reach Dr. Warnick at (435) 797-0378.

Payment Names of participants completing the survey will be entered into a drawing for three $50 gift certificates to local food establishments.

Voluntary nature of participation and right to withdraw without consequence Participation in this research study is entirely voluntary. You or your student may refuse to participate or withdraw at any time without consequence or loss of benefits.

Confidentiality Research records will be kept confidential, consistent with federal and state regulations. Only Dr. Brian Warnick, Dr. Gary Straquadine and Lisa Allen, a research assistant, will have access to the data which will be kept in a locked file cabinet in a locked room. An algorithm will be used to create new code numbers in place of using student numbers in order to protect privacy and maintain confidentiality for the survey instrument. Personal, identifiable information will be kept for four years to be used for longitudinal study purposes and then it will be destroyed.

UtahState
UNIVERSITY.

College of Agriculture
Dept. of Agricultural Systems Technology & Education
2300 Old Main Hill
Logan UT 84322-2300
Telephone: (435) 797-0378
Fax: (435) 797-4002

Parent Permission
Implementing a Retention Model for Incoming Freshmen in the College of Agriculture at Utah State University

IRB Approval Statement   The Institutional Review Board for the protection of human participants at USU has approved this research study. If you have any pertinent questions or concerns about your rights or a research-related injury, you may contact the IRB Administrator at (435) 797-0567. If you

have a concern or complaint about the research and you would like to contact someone other than the research team, you may contact the IRB Administrator to obtain information or to offer input.

Copy of Permission Letter: This permission letter has been provided for your permission and records.

_____
Brian Warnick, Principal Investigator
 2300 Old Main Hill
Logan, UT 84322-2300
(435) 797-3078

_____
Gary Straquadine, Ph.D.
Co-Principle Investigator
(435) 797-3521

_____
Lisa Allen, Research Assistant
(435) 797-2215

☐   **Check here if you do not give permission for your son/daughter to participate in this research study. Please return this document by August 25, 2008.**

_____
Name of student

_____
Name of Parent

Please return to: Dr. Brian Warnick
                         2300 Old Main Hill
                         Logan, UT 84322-2300

Appendix G: Email Invitation to Incoming Freshmen in the College of Agriculture from

the Associate Dean on September 5, 2009

Lisa Allen

From:	Gary Straquadine
Sent:	Friday, September 05, 2008 5:43 PM
To:	Lisa Allen
Cc:	gary.straquadine@gmail.com; Brian Warnick
Subject:	College of Agriculture Survey

Dear College of Agriculture Freshmen:

About two weeks ago you received an email requesting your participation in an on-line survey for the College of Agriculture. If you have already completed the survey , please accept my sincere thanks.

If you have NOT completed the survey, I ask that you do so today. Your insights and opinions are important to this research of freshmen enrolled in College of Agriculture. To better serve our students , I need your response. We seek to build a better college and, therefore, to address the needs of all students, your input is essential.

To access the on-line survey, please click the following link:

http://corp.inetu.act.org/sri/utahstate

It will take you only a few minutes to complete, is completely confidential, and linked to a trustworthy website.

If you have any questions or concerns regarding this study, please contact me by telephone at 797-3521 or email me at: gary.straquadine@usu.edu. I look forward to your participation.

Sincerely,

Gary S. Straquadine
Associate Dean – College of Agriculture

Appendix H: Email Invitation to Incoming Freshmen in the College of Agriculture from

the Associate Dean on September 22, 2009

Dear Student,

Recently an email was sent to you requesting that you participate in a study for College of Agriculture freshmen. If you have already completed the survey, please accept our sincere thanks. If you have not done so, please do so today. We are grateful for your help as it will provide us with information to assess strengths and weaknesses in various areas related to college success. A strong response rate will help us to identify the needs of College of Agriculture freshmen in 2008.

To access the on-line survey, please click on the following link:

http://corp.inetu.act.org/sri/utahstate

If you have any questions or concerns regarding this study, please contact me by telephone at 797-3521 or email me at: gary.straquadine@usu.edu. I look forward to your participation.

Sincerely,

Gary Straquadine
Associate Dean

Appendix I: Course Outline for Learning Modules

Course Outline for Learning Modules

SRI Scale	Learning Module
Academic Discipline	Students to increase their knowledge in their academic discipline skills by keeping a daily academic journal for three weeks accounting for all time spent doing homework, reading, researching, and reviewing for classes
Academic Self-Confidence	Students to prepare a 3-5 page reflection paper describing a positive academic experience which they had while attending high school. How can students apply what they learned from previous experience to help them be academically successful in college.
Commitment to College	Students are to research their specific major including required courses to be completed reviewing course descriptions, identifying pre-requisite classes and the semesters when each class is taught. Students to research career opportunities and potential salaries available for their individual majors. Students to meet with their academic advisor and submit a 2-3 page summary of what they have learned.
Communication Skills	Students will be provided with three case studies requiring conflict resolution. The student will need to identify the problem, research various solutions and write a 5- page summary describing the process involved to resolve the problems.
Emotional Control	Students to review three professional, peer-reviewed journals regarding emotional control and strategies for "managing one's strong feelings". Prepare a 3-5 page summary discussing their findings.
General Determination	Refer students to http://college.cengage.com/collegesurvival/downing/on_course/5e/resources.html and complete the self-assessment. Write a 3-5 page reflection paper describing what the student learned from the assessment and identify their level of determination for staying in school and completing a degree.
Goal Striving	Student to establish personal, physical, academic and social goals (2-3 in each category) and/or objectives for the current semester. Develop a strategic plan outlining specific steps designed to achieve these goals. Submit the completed plan.
Social Activity	Student to attend five university sponsored activities and write a 1 page summary about each event. Paper to include a discussion about the event and the individuals that the student met and associated with during each activity.
Social Connection	Student to volunteer ten hours at College of Agriculture or university activities. Student to explore options for clubs in major departments or in the college and to prepare a 3 page reflection paper on the experience and how joining a club can help them to feel connected to the College of Agriculture and USU.
Study Skills	Students to take notes in class and organize them using the Cornell or prepared notes method and submit to your academic advisor. Research test taking strategies and prepare a 2-3 page summary discussing your findings.