Core Team Meeting

February 17, 2014
Lynn Library 113
3:00 p.m.

Minutes

MEMBERS PRESENT: Bob Austin, April Sessler, Dr. Paul Matney, Dr. Kathy Wetzel, Dr. Russell Lowery-Hart, Danita McAnally, Jason Norman, Bruce Moseley, Susan Burks, Heather Voran, Carol Bevel, Janet Barton, Olga Bustos, Janine Good, Penny Massey

Others present: Student Representatives: Seth Brogdon, Andrew Alexander

Recorder: Carolyn Leslie

MEMBERS ABSENT: Dr. Tamara Clunis, Megan Eikner, Melanie Castro

CALL FOR ADDITIONAL AGENDA ITEMS (Bob Austin)

- No one had additional agenda items.

WELCOME AND INTRODUCTIONS (Dr. Paul Matney)

- Dr. Matney gave a brief history of Amarillo College's participation in the Achieving the Dream initiative.
- The purpose of this committee is to continue to advance the initiative and to help students succeed as they earn degrees and certificates.

OVERVIEW OF ACHIEVING THE DREAM AND NO EXCUSES CORE TEAM (Bob Austin)

- Bob stated that the Achieving the Dream's goal is: Success for more community college students, especially students of color and low-income students. (Handout Attached)
- The No Excuses Committee has been created as an institutional standing committee which will identify barriers to student success, make decisions, and change policies with the goal of improving student outcomes.

REVIEW OF INTERVENTION STRATEGIES/TACTICS (Dr. Russell Lowery-Hart)

- Dr. Lowery-Hart discussed the six processes that AC tries to embody for student success. (Handout Attached)
- He stated that the committee will discuss how to incorporate interventions. If the committee's goal is truly about student success and completion, then we must require what works.
- Dr. Lowery-Hart said that the committee will work to solve the completion crises.

STUDENT COMPLETION BEST PRACTICES (Danita McAnally)

- Danita gave the committee members a Best Practices Matrix. (Handout Attached)
- Her goal is to discuss one or two items from the MATRIX each time the committee meets.
- Danita discussed an overview of terms from the MATRIX associated with student success.
- She would like for committee members to use the Best Practices MATRIX to prepare their ideas

to discuss at the committee meetings.

AC EARLY PREDICTORS OF STUDENT ATTRITION (McAnally)

- Danita presented a summary prepared by Institutional Research Analyst, Sharon A. Delgado, on the Amarillo College Early Predictors of Attrition.
- She asked committee members to begin thinking and focusing on the relationship between the number of hours a student takes and completion.
- Danita would like for the committee members to look at the Early Predictor Power Point that is attached to the minutes in order to give feedback at the meetings.

PROMISING PRACTICES (Bob Austin)

- Bob told the committee members that in future meetings, he would like for everyone to share what they are doing that makes a difference for students.
- He would like for the committee to discuss how to take their ideas to scale. What are we doing for a small group of students that could be expanded to a larger group?

DETERMINE MEETING SCHEDULE (All Members)

- The next meeting will be on Friday, March 21, 2014 at 9:00 a.m. in Lynn Library, Room 207.
- Meetings will be scheduled on the third Friday of the month at 9:00 a.m. in Lynn Library, Room 207.
- Carolyn Leslie will send meeting appointments.

ADJOURNMENT

- The meeting adjourned at 4:20 p.m.

Achieving the Dream™

Goal

Achieving the Dream's Goal: Success for more community college students, especially students of color and low-income students.

Success is defined by the rates at which students:

- ✓ Successfully complete remedial or developmental instruction and advance to credit-bearing courses
- ✓ Enroll in and successfully complete the initial college-level or gateway courses in subjects such as math and English
- ✓ Complete the courses they take with a grade of "C" or better
- ✓ Persistence from one term to the next
- ✓ Attain a certificate or degree

Achieving the Dream's National Reform Network - the nation's most comprehensive non-governmental reform network for student success in higher education history - has been and will continue to make considerable contributions toward the nation's goal of increasing the number of Americans with a college certificate or degree with marketplace value within the next decade.

http://www.achievingthedream.org/

AMARILLO COLLEGE NO EXCUSES BELIEF SYSTEM:
Student Success and completion

Philosophy

At Amarillo College, we believe all students hold potential for college and career success. We strive to ensure every student has a success story. We embrace our responsibility for the "whole" student by setting high expectations for them and then assisting students in reaching these expectations. We aspire to treat each student as an individual with unique challenges and needs.

We know that life is too short to listen to excuses. We will analyze and evaluate reasons for students' successes and struggles, and not allow them to become our excuse for lack of success. When we establish goals for ourselves and our college, we will reach them in powerful and profound ways.

Our students often get one shot at success – they depend on us. We will strive to be the right person for each student who crosses our path.

Process

We will forge a model for student success that is inspired by high expectations—ours and our students—and sustained by six exceptional systems.

1. *Culture of Universal Achievement:* We believe that every student can succeed in the completion of a certificate, degree or any other individual goal. We will be diligent and unceasing in our efforts to both maintain academic rigor and help our students' achieve their individual dreams.

2. *Collaboration:* We will launch a true team effort that focuses on new, better, data-driven ways to improve student completion and career opportunities.

3. *Standards Alignment:* We will discover and develop new, better strategies for aligning our curriculum, programs, goals, and processes to bolster and optimize student completion.

4. *Assessment:* We will use our assessments of student experiences and learning outcomes to improve our curriculum, instruction, policies, and practices to maximize opportunities for student success.

5. *Data Analysis:* We will communicate with each other through data. We will use data to inform and drive our decision making.

6. *Interventions*: We will evaluate data with the guiding question, "if this data – then this intervention." Our interventions will be responsive, effective, and scalable for maximum impact.

Purposes

Our No Excuses philosophy and processes will facilitate students' ability to:

- Successfully complete developmental courses and advance to credit bearing courses;
- Successfully complete initial college-level or gateway courses;
- Complete courses with a grade of C or better;
- Persist from one term to the next; and
- Earn a certificate, degree, or reverse transfer.

Professional

As a member of the Amarillo College family, we will embrace the six "C's" of a No Excuses professional.

- *Committed*: We are committed to being the right person for each student by expecting students' best efforts and then guiding them to excellence. We are committed to being the right person for each other by supporting efforts to improve student success from our colleagues across the institution.
- *Courageous*: We will have the courage to confront the status quo when it impedes student success. We will have courage to ensure our important work is not deterred by those who tell us our dreams for students are unrealistic or impossible.
- *Collaborative*: We support and trust each other in our work toward student completion.
- *Creative*: We are innovative and embrace new ways to better serve our students. We are not satisfied with continuing the "AC way" if our data shows we can do better.
- *Character-centered*: We will do the right thing for our students and each other.
- *Completion focused*: College completion and career readiness drive our efforts, no matter our job descriptions or reporting structures – we are all on the college completion team.

Powerful Symbolism

We are committed to exposing our students to the powerful imagery of successful completion and careers. Students will experience the symbolism of careers in and out of the classroom through internships, experiential learning, service learning, mentors, career planning, and/or career specific posters/photos/job postings/multimedia.

Pledge

As students enter Amarillo College, they pledge:

I do hereby pledge to do my part on the road through college.
I know I cannot do it alone. I will ask for and seek the help I need.
I will take responsibility for my education.
I will study and work hard.
And, with the help of family, friends, faculty, staff, advisers and mentors,
I can achieve my goal of successfully completing college and starting my career – and I will.

As employees of Amarillo College, we pledge to be the "right person" by helping our students fulfill their pledge to us.

Programs

We are a part of a No Excuses network of people dedicated to student success at every level. As such, we will work hard to market our "No Excuses" message internally and externally through powerful symbolism and professional development. While our plans and actions will evolve based on data, our initial No Excuses efforts will focus on:

- *Tutoring expansion*: A critical element of academic success is skill building and support. With award winning examples of tutoring already available to our students, Amarillo College will work to expand the reach, impact, and requirements of tutoring.

- *Course Redesign*: With a need to respond to generational and workplace skill shifts, course redesign fuses course content, instructional technology and active learning. The redesign process reshapes learning environments to significantly increase student knowledge acquisition and success.

- *FYS course*: Amarillo College will work to build a First Year Seminar course for all incoming, "first time in college" students that aligns career clusters and builds academic and life skills to ensure students are prepared for college success.

- *Poverty Initiative*: with almost 60% of AC's students living in poverty, Amarillo College will work to leverage new tools such as Benefit Bank, AC Food Pantry, Retention Alert, and Social Service Coordination for additional support toward academic success.

- *Developmental Education*: With over 65% of AC's students enrolled in developmental education courses, success in developmental education is critical. Amarillo College will review the developmental education success data and develop a plan for pre-enrolment interventions, placement, and options for acceleration.

BEST PRACTICES MATRIX	CCCSE: High-Impact Practices for Community College Students	SENSE: Effective Practices w/Entering Students	COMPLETE COLLEGE TEXAS
	• **Academic Goal Setting & Planning** o Intrusive Advising	• **Early Connections** o Felt welcome before coming to college o Adequate financial assistance o College staff member assisted with financial aid qualifications o At least one staff member (non-instructor) knew their name o Assigned staff member to assist with info.	• **Time and Intensity** o Maximum of 60 credits – associates o Maximum of 120 credits – baccalaureates o Maximum of 4 months entry-level certificates o Ensure transferability of credits
	• **Learning Community**	• **High Expectations & Aspirations** o Instructors want them to succeed o Student has motivation to succeed o Prepared academically to succeed During 1st 3 weeks; o Always turned in assign. on time o Always submitted assign. o Always come to class prepared (readings &	• **Block Scheduling** o Focus on full-time loads o 12-18 hours – discounted cost of tuition & fees – encourage full-time loads o 8 hour blocks – 8 am to 2 pm o 4 hour blocks – around primary work schedules

		assign.) ○ Always attended class	
	• **Experiential learning** ○ **Service Learning** ○ International Study	• **Clear Academic Plan & Pathway** ○ Advisor helped select program major ○ Advisor helped me set academic goals & plan for achieving them ○ Advisor help me identify 1st semester courses ○ Met w/ academic advisor at times convenient to me ○ College staff member talked w/me about my outside commitments of school, work, children, etc.	• **Co-requisite Remediation – not Pre-requisite** ○ Mandatory – just-in-time academic support ○ Align math to program major needs ○ Match curriculum to real-world career needs ○ Most unprepared students – provide remediation that is contextualized to coursework
	• **Supplemental Instruction**	• **Effective Track to College Readiness** ○ College required me to enroll in courses based on placement test ○ Assessed (e.g. TSI) prior to registering ○ Took placement test	• **Guided Pathways to Success** ○ Use technology to enroll all students in structured degree plans – think programs rather than courses ○ Each semester should be mapped out by program major ○ Use early alert intervention technology
	• Orientation • Alert & Intervention • Accelerated fast-track dev. ed. • FYS	• **Engaged Learning** ○ Ask questions in class or contribute in class ○ Prepare at least 2	• Performance Funding ○ Funding for Completers ○ Financial

	• Student Success Course • Tutoring • Assessment & Placement • Reg. before class starts	drafts of papers o Participate in supplemental instruction o Work w/other students on a project or assign. o Work w/classmates outside of class on class projects or assign. o Participate in req. study group outside of class o Participate in a student-initiated study group outside class o Use e-mail & other electronic tools to communicate for coursework o Use e-mail & other electronic tools to communicate w/instructor about coursework o Discuss assign. or grade w/instructor o Receive prompt feedback from instructor o Discuss readings or class info. with instructors outside class o Use face-to-face tutoring o Use writing, math or other skill labs o Use computer lab	incentives to encourage success of low-income students
		• **Academic & Social Support Network** o Instructors clearly explain available academic & social support services	

		○ Instructors clearly explain course grading policies ○ Know how to reach instructors outside of class ○ At least one other student knows student's name ○ At least one instructor knows student's name ○ Learned the name of one other student in a class	

Amarillo College
Early Predictors of Attrition

First-Time-in College, Degree-Seeking Students
Cohorts: Fall 2010 to Fall 2012 Terms

Sharon A. Delgado, Institutional Research Analyst
January 10, 2014

Amarillo College

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Background and Method

- The sample consisted of 3,932 first-time-in-college, degree-seeking students. Three cohorts were used in the analysis; Fall 2010, Fall 2011 and Fall 2012. Data for the analysis was extracted from the Institutional Research data warehouse. Several files containing student demographic, admissions, socioeconomic, academic and enrollment information (the independent or predictor variables) were merged to create the data set. SPSS Modeler and the SPSS statistical package were used for the analysis.
- Attrition was defined as students who left Amarillo College the spring semester following their first fall term. This definition produced two groups: the Retained Group (students who enrolled the following spring) and the Did not Return (attrition) group. This grouping served as the target variable for a logistic regression model.
- Logistic regression is a type of predictive model which is appropriate when the outcome of interest is a binary variable (a variable with only two possible values). It should be noted that no determination was made as to whether a student stopped out (left for a period of time and came back) or transferred out.
- Attrition was chosen as the outcome of interest in order to produce actionable evidence. In other words, if the characteristics of those who are not retained is known early in the semester, something may be done to intervene and prevent student attrition before the end of the first semester.

Background and Method, Continued

- The results of this analysis should not be generalized beyond first-time-in-college, degree- seeking Amarillo College students. Further, some potentially important variables were not included in many students' applications to the institution and other academic records, such as high school average, expected family contribution for financial aid, ACT/SAT scores, and a number of other measures. Including these variables (and possibly measures of school environment, student motivation, etc. as found in the SENSE survey) may contribute to a more robust model and/or change the significant predictors in future models. It should also be noted that missing values for student income were imputed by substituting mean values for the missing data. Missing values for ACCUPLACER math scores were imputed by substituting the minimum passing standard as found in the Developmental Education Plan 2012-2013 for Amarillo College. These imputation methods have possible limitations that may have affected the results of the analysis, therefore, these measures should be interpreted with caution.
- When the number in each category is sufficiently large to provide meaningful results, selected breakdowns are shown after each significant predictor in the model. Some variables may influence attrition at differing levels when paired with other variables (e.g. gender is influenced at different levels when paired with differing semester hours). The data is presented graphically to highlight potentially important interactions among some of the key variables. These interactions were not tested for significance due to the lack of some potentially important variables in the data set discussed previously (e.g. high school average, SAT/ACT scores, etc.).

Research Question

- What are the characteristics of students who enroll in the fall term and do not re-enroll in the spring term?
  - Specifically, which demographic, socioeconomic, admissions and academic variables, available early in the semester (e.g. at admission or at the census date) predict fall to following spring attrition?

Predictors Used in Building the Model

- Demographic Variables: Gender, Ethnicity, Age Group, Father's Level of Education

- Admissions Variables: Basis for Admission, Most Recent Educational Objective, Residence Based on Tuition Status (In-District, Out of District/State), Whether Student Enrolled Off-Campus, Attendance: Day, Night or Both

- Socioeconomic Variables: Pell Eligibility, Term Merit-Based Award Status, Student Annual Income

- Academic/Enrollment Variables: ACCUPLACER Math/Reading/Writing Score, Number of Developmental Courses, Number of General Education Courses (excludes developmental and technical courses), Number of Technical Courses, Number of Online Courses, Number of Flex Entry Courses

Significant Predictors in the Model*

- Total Hours, Semester Census Date (1-5 hours, 6-11 hours, 12 or more hours)
- Gender
- Age Group (17-19, 20-29, 30 and above)
- Father's Level of Education (Not a High School Graduate, High School Graduate, Some College or Associate Degree, Bachelor's Degree or Above)
- Educational Objective (Associate Degree, Transfer Credit, Certificate Completion)
- Term Merit-Based Award Status (Funds Awarded, No Aid/Did not Apply)
- Student Annual Income
- ACCUPLACER Math Score
- Number of General Education Courses (None, One, Two, Three or More)
- Number of Online Courses (None, One or More)

*Significant predictors are not rank-ordered in terms of importance.
Note: Basis for Admission was significant when all categories were included. This variable was not significant when the Individual Approval category was excluded. Please see Appendix 1 for an explanation.

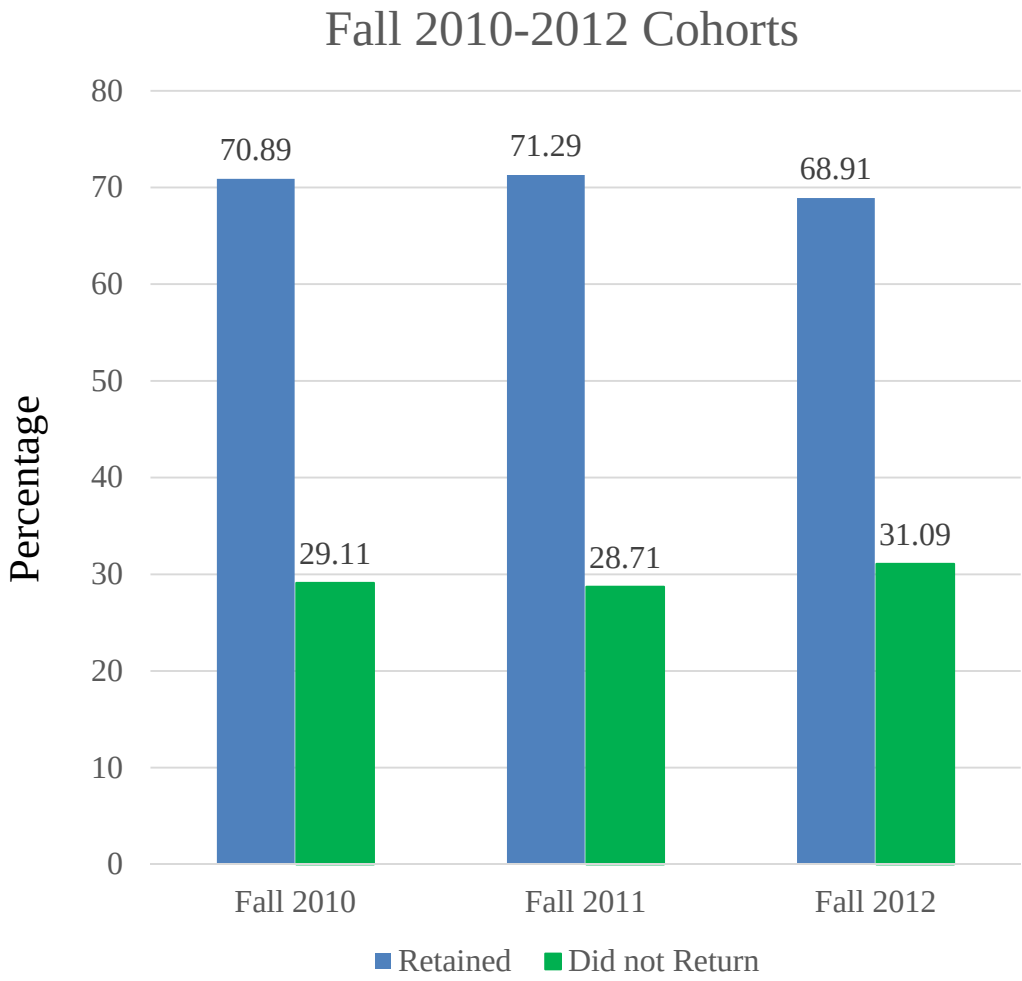
Characteristics of the Sample: The Cohorts

Similar rates of attrition were found for the Fall 2010, 2011 and 2012 cohorts.

The cohorts were similar in terms of gender, race/ethnicity, father's education level and age groups (breakdowns for the cohorts are available upon request).

There were no significant differences between the cohorts on basis for admission or residence based on tuition status.

Significant differences were found for semester hours categories and educational objective. These differences did not affect the results of the analysis.



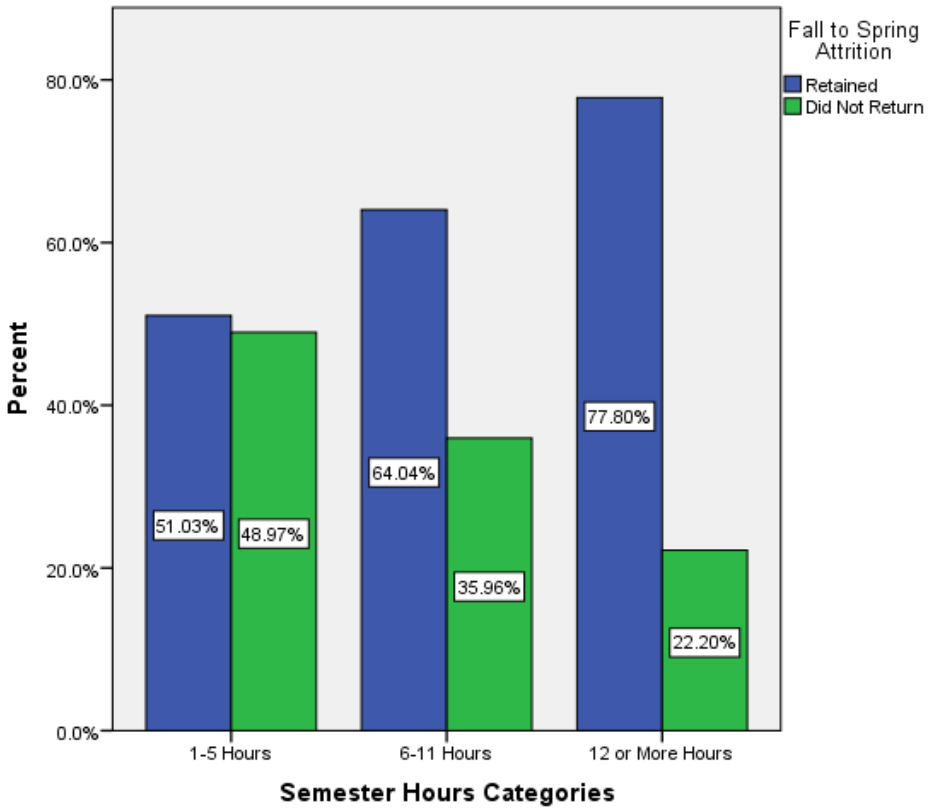
Attrition by Semester Hours at the Census Date

Total hours at semester census date was a significant predictor in the model.

- Students taking 1-5 credit hours were 3.2 times more likely to leave the following spring than full-time (12 or more credit hours) students.
- Students taking 6-11 credit hours were 1.9 times more likely to leave compared to full-time students.

Retention by Semester Hours

- **1-5 Hours*** = 51% Retained; 49% Not Retained
- **6-11 Hours** = 64% Retained; 36% Not Retained
- **12 or More Hours** = 78% Retained; 22% Not Retained

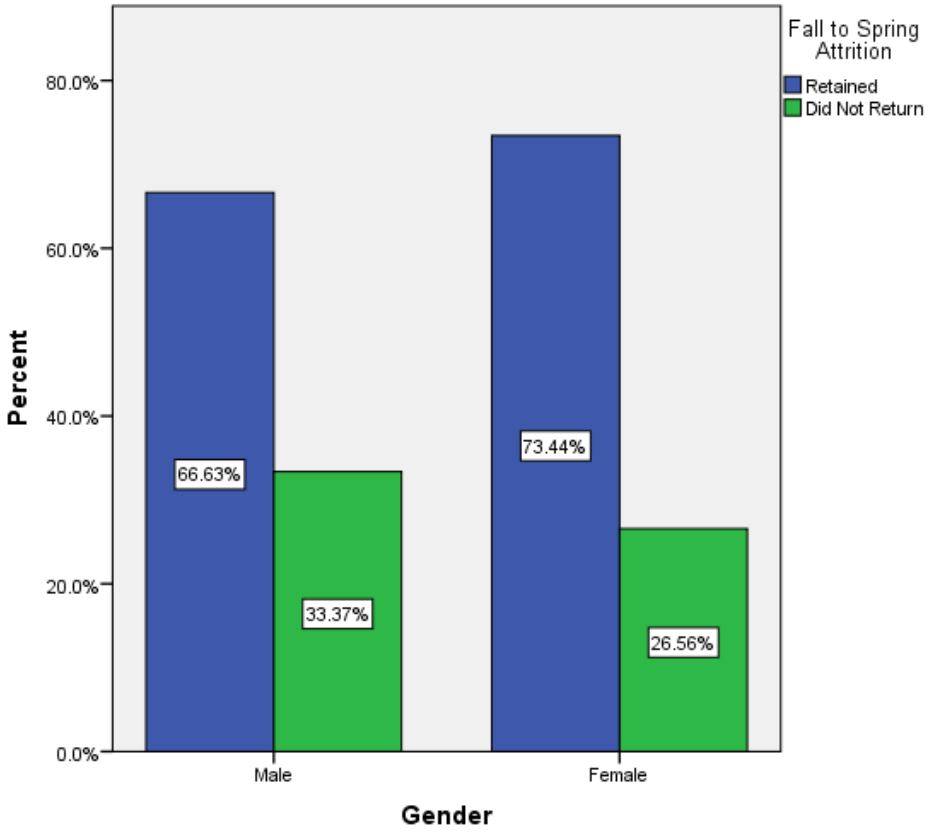


Please note that the 1-5 credit hours group was a small group comprised of 292 students. Also, percentages are calculated for the total of each category on the horizontal axis throughout this report. Please refer to the tables in Appendix 2 for counts of the variables included in the model.

Attrition by Gender

Males were 1.5 times more likely to be in the attrition group (Did not Return) when compared to females.

Two thirds of males in the sample were retained (66.63%), compared to slightly less than three quarters (73.44%) of the females.

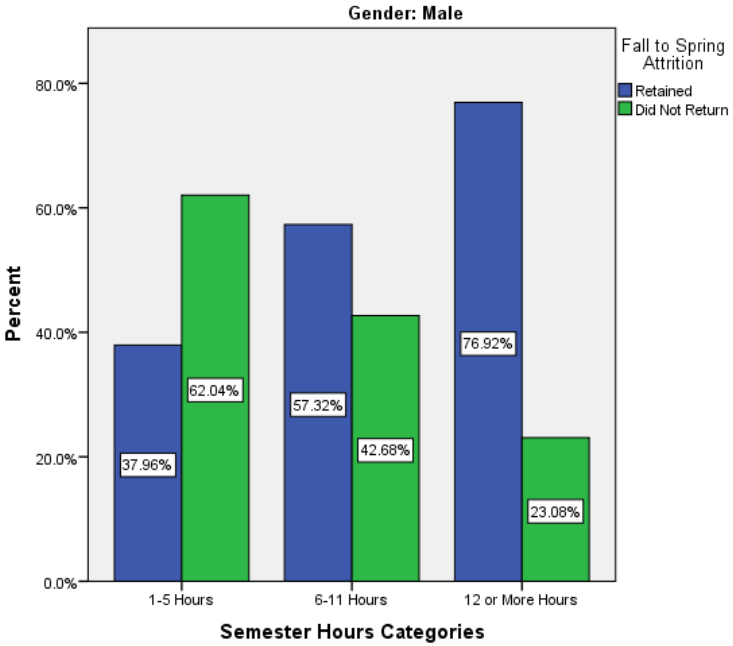


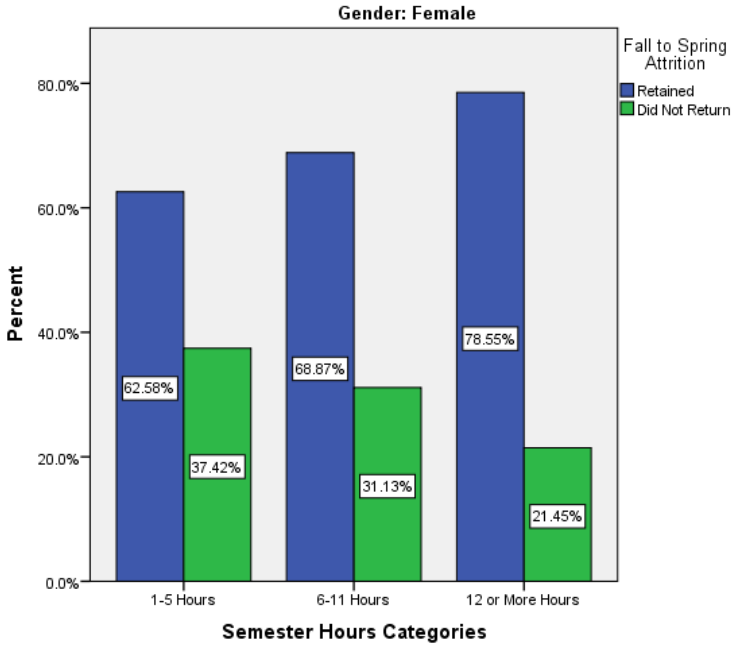
Semester Hours and Gender

Male Students in the Sample had Higher Attrition When Less than Full-Time (See following graphs)

- **1-5 Hours**: 62% male attrition compared to 37% female attrition
- **6-11 Hours:** 43% male attrition compared to 31% female attrition
- **Full-Time Students:** Overall, full-time students were much more likely to be retained, with similar rates of attrition for both males (23%) and females (21%) taking 12 or more hours.

Attrition by Gender and Semester Hours Categories



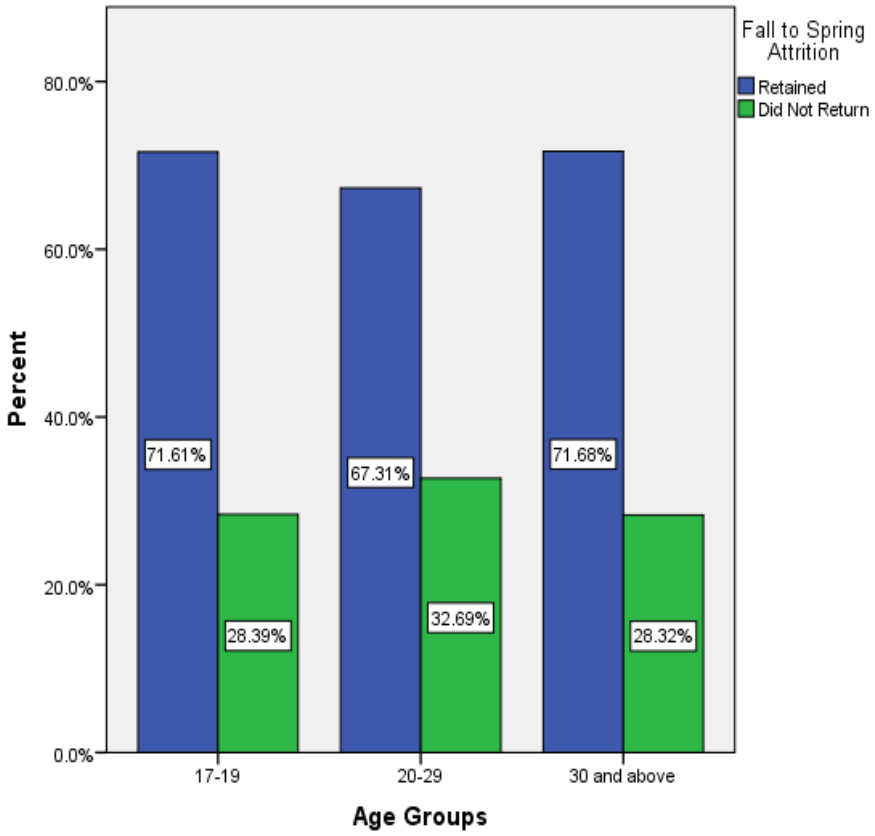


Attrition by Age Group

As student age increased, there was a significant decrease in attrition. As shown in the chart, this result did not follow a smooth trend line.

The 20-29 year-old group had the highest percentage of attrition (33%) among all age groups.

As can be seen in the chart on the following page, rates of attrition differed for different age groups and semester hour categories.



Attrition by Age Group and Semester Hours

Data for Students Enrolled in 1-5 Hours

Across all age groups, students with 1-5 semester hours had the highest rates of attrition.

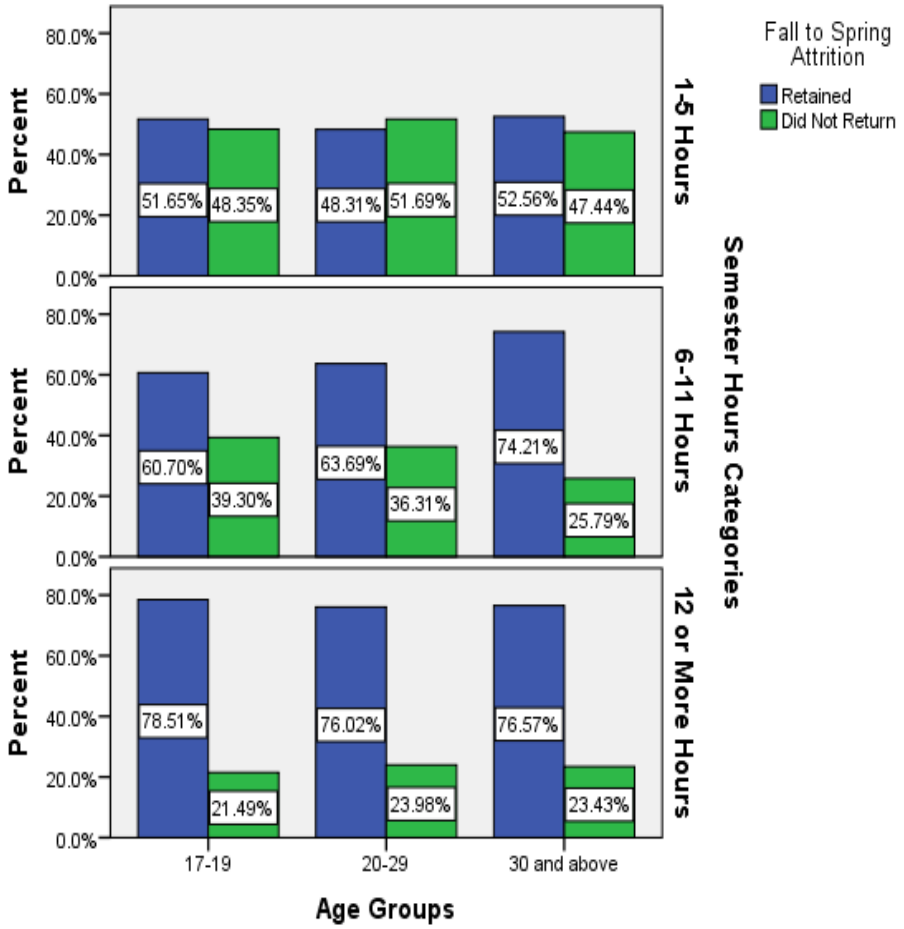
Among 17-19 year-old students 48% did not return; among 20-29 year-old students 52% did not return; among 30 and above students 47% did not return.

Data for Students Enrolled in 6-11 Hours

For students age 17-19 and 20-29, attrition was 39% and 36%, respectively. Students age 30 and above had the lowest attrition rate (26%) among the 6-11 credit hours group.

Data for Students Enrolled in 12 or More Hours

As can be seen in the graphs, attrition was lowest for students with 12 or more hours across all age groups.

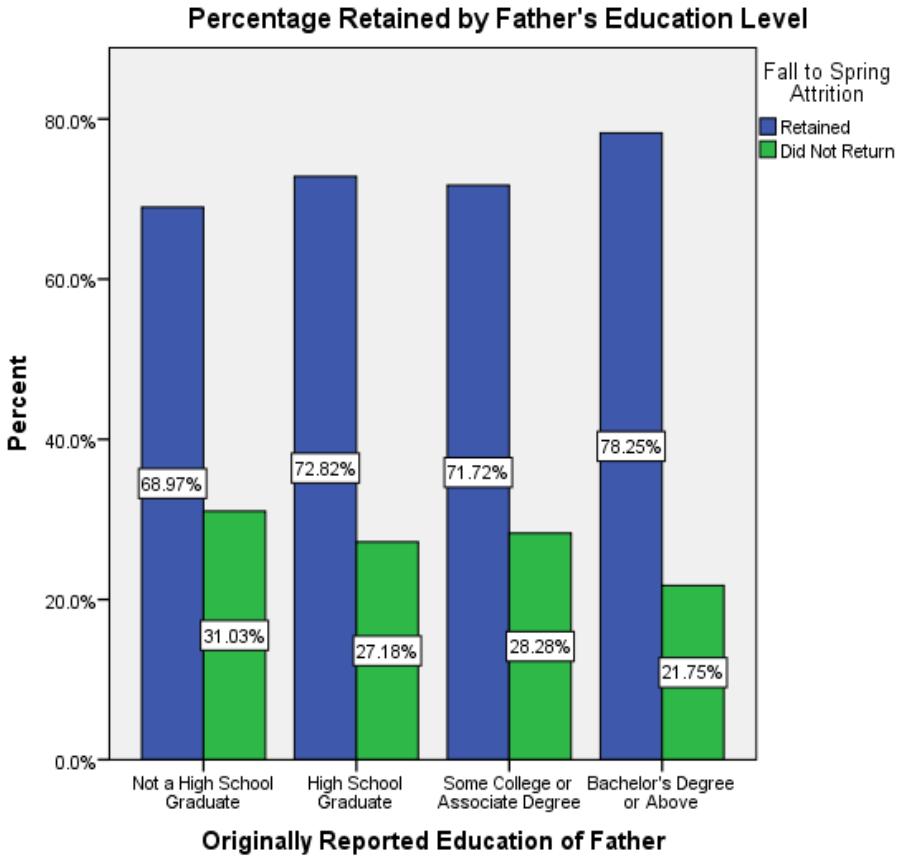


Attrition by Father's Level of Education

Father's education level was also a significant predictor of attrition. As father's education level increased, the likelihood of attrition decreased.

The lowest level of attrition was seen among students who reported that their father had earned a Bachelor's degree or above.

The highest attrition was among students whose father had not completed high school (31%). Twenty-eight percent of students who reported some college or Associate degree for their father's education did not return to AC the following spring. The attrition rate for students whose father completed high school was 27%.



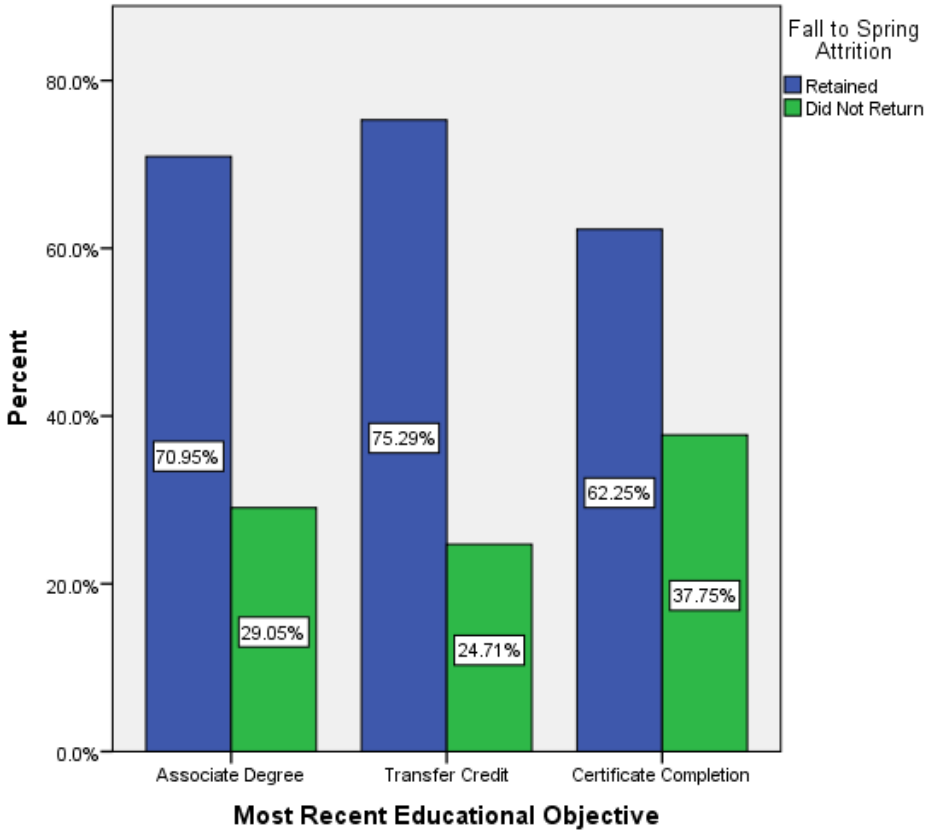
Attrition by Educational Objective

The lowest level of attrition was among students seeking transfer credit (25%).

Students pursuing a certificate (38% attrition) were 1.3 times more likely to leave AC in the spring when compared to students pursuing an Associate Degree (29% attrition).

The highest rate of attrition occurred among students seeking a certificate (38%).

The graph on the following page shows the breakdown for educational objective by gender.

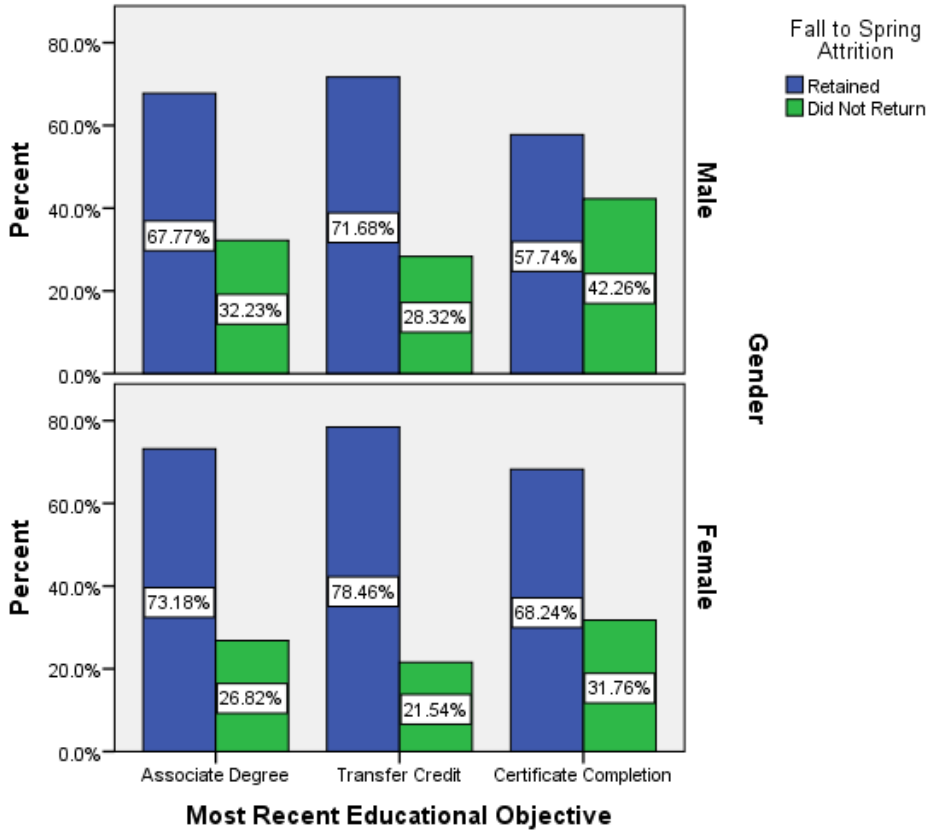


Attrition by Educational Objective and Gender

Overall, the highest percentage of attrition was among students seeking a certificate (38%).

- However, for males with the goal of certificate completion, the rate was 42%.
- Among females seeking a certificate, the rate was 32%.

By far, the lowest rate of attrition was among females with a transfer credit objective (22%).

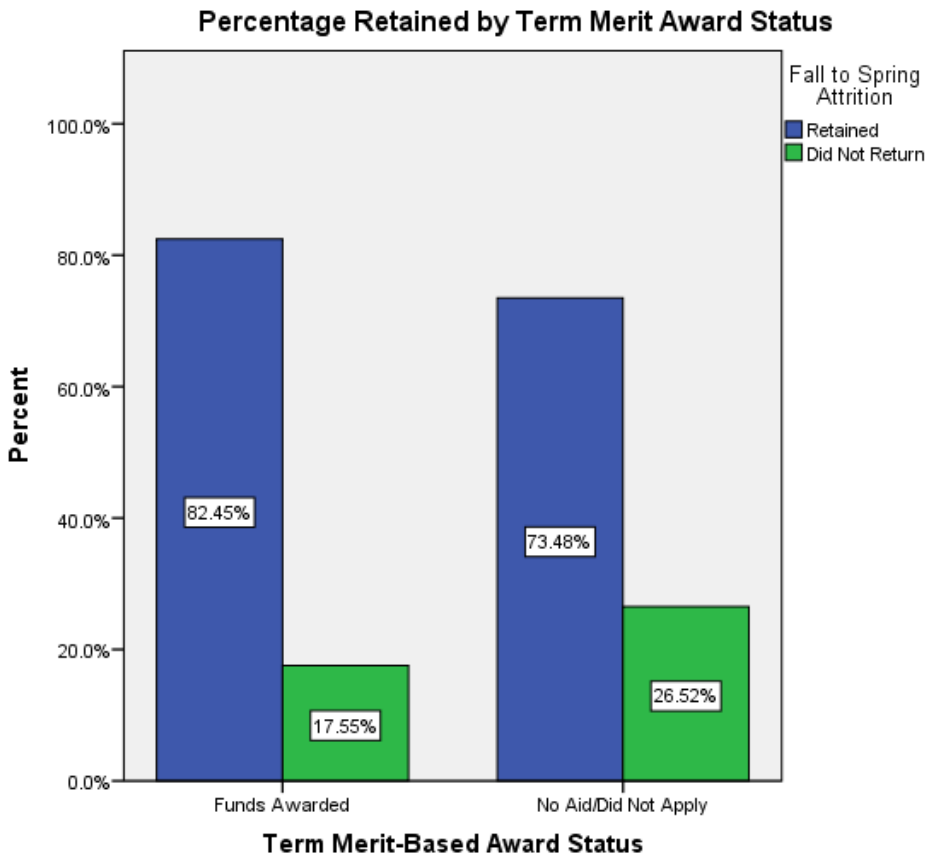


Attrition by Merit-Based Award Status

Students who did not receive or did not apply for a merit-based award for the fall term were 1.8 times as likely to leave school the following semester when compared to students who received merit aid*.

Only 18% of students with a merit award left AC in the spring, compared to 27% who were not awarded or did not apply for this type of aid.

It is important to keep in mind that the number of students receiving merit-based aid was 451 for the retained group and 96 for the did not return group compared to 1660 (retained) and 599 (not retained) for the No Aid/Did Not Apply group.



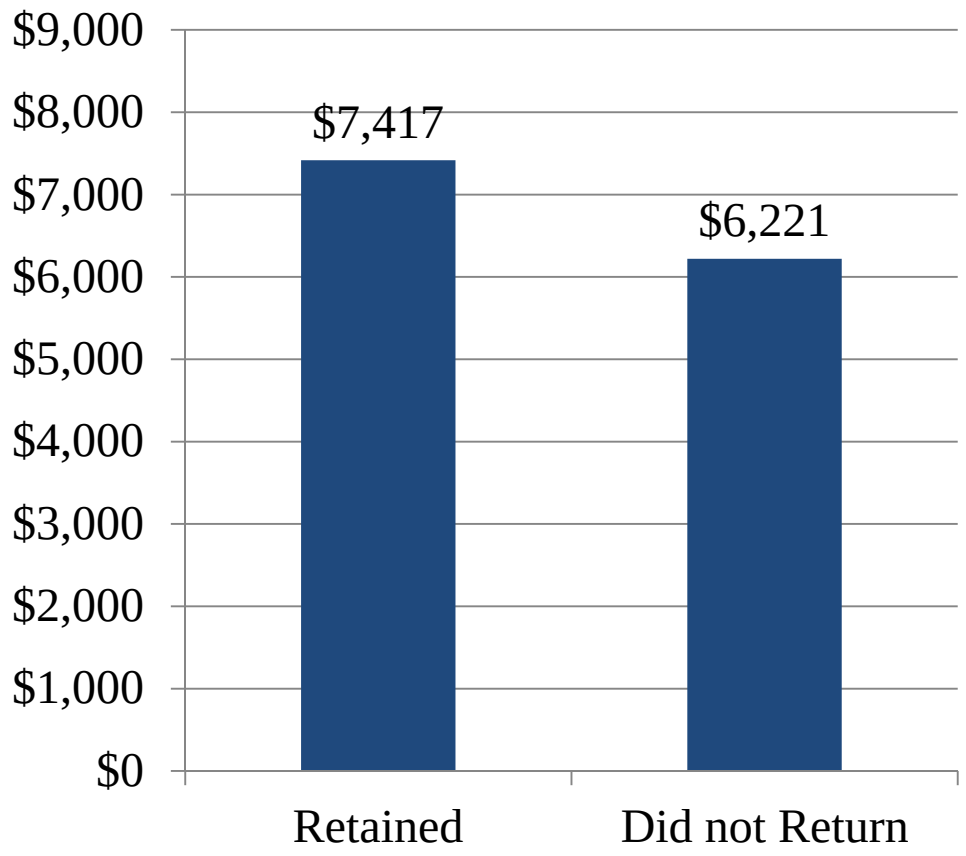
*The majority of these students were AC Foundation scholarship recipients.

Attrition by Mean Student Income

Higher student incomes were associated with decreased odds of attrition.

Students in the retention group had higher average student incomes ($7,417) than students who were not retained ($6,221).

The graph on the following page shows the breakdown for student income by merit-based award status.

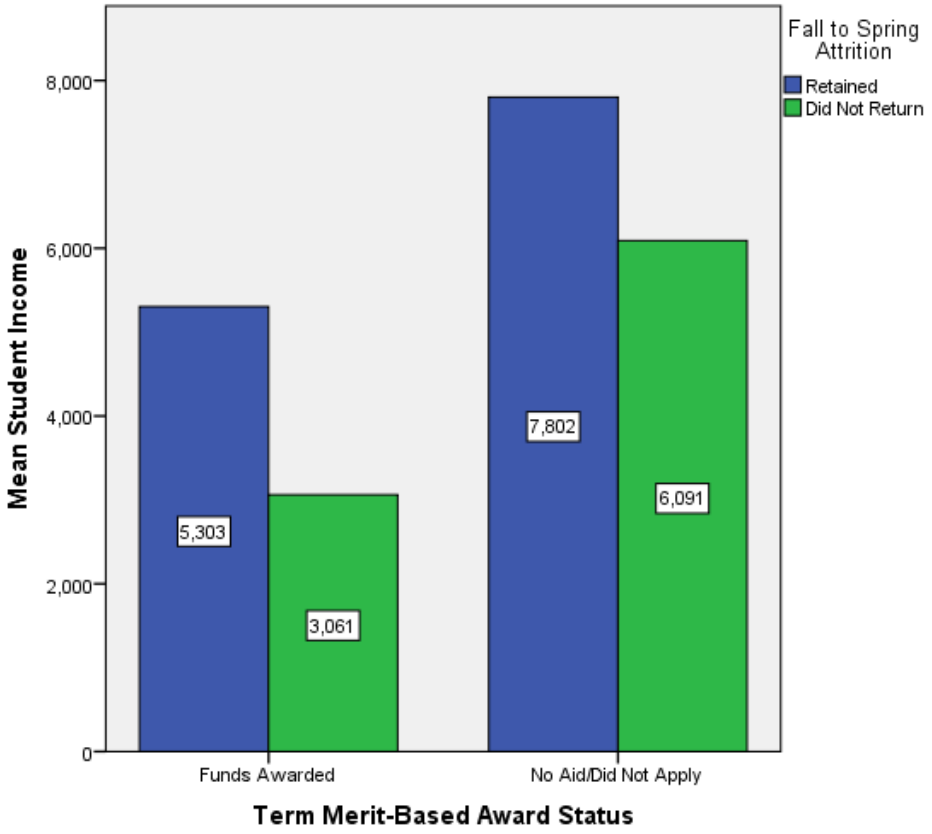


Attrition by Term Merit-Based Award Status and Mean Student Income

Overall, students who received merit-based financial aid had lower reported student income than students who did not receive merit aid or did not apply.

Retained students who were awarded merit-based aid tended to have higher reported income ($5,303) than students who did not return who received merit-based aid ($3,061).

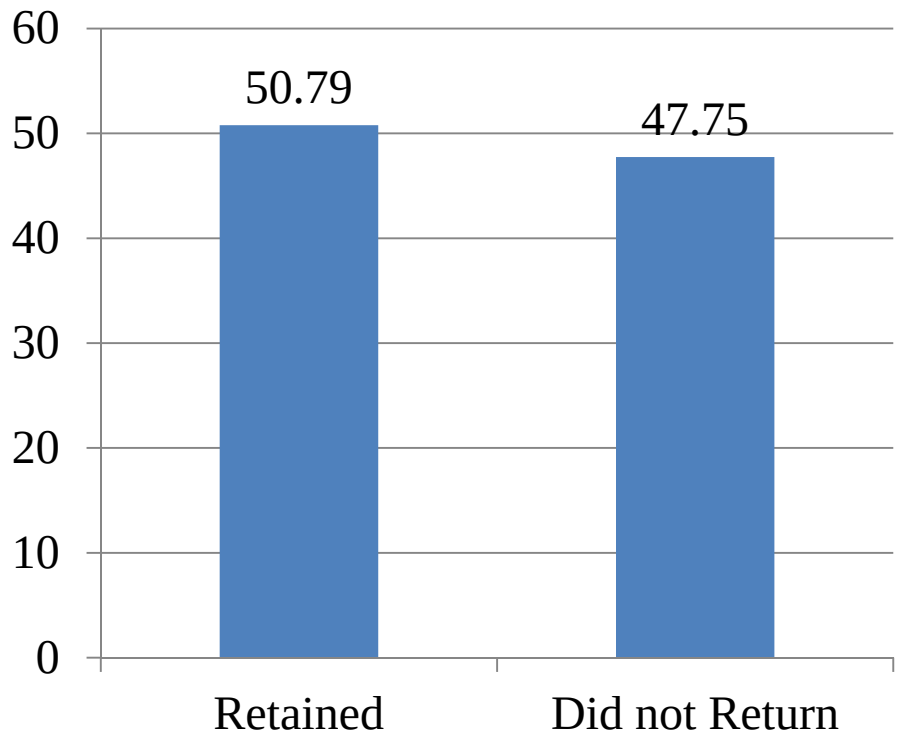
Incomes were lower for students who did not return in the spring in the No Aid/Did not Apply category (mean = $ 6,091) compared to retained students in this category (mean = $ 7,802).



Attrition by Mean Elementary Algebra (Math) ACCUPLACER* Score

Higher ACCUPLACER math scores were associated with a decreased likelihood of attrition.

Students in the retained group had an average math ACCUPLACER score of 50.79, compared to 47.75 for students who did not return.



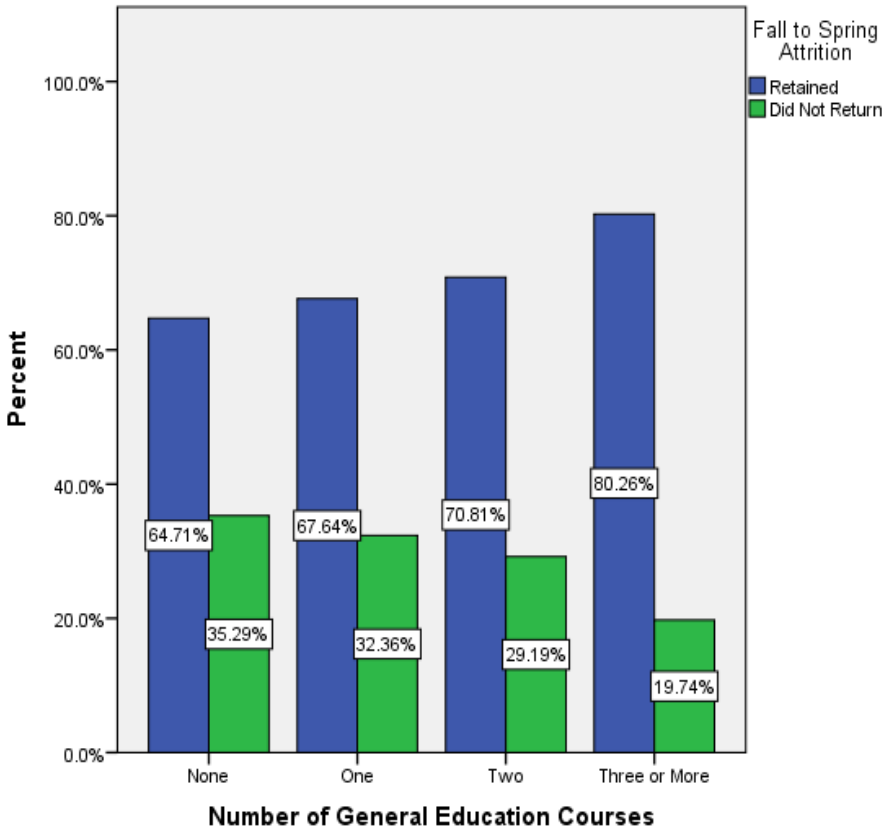
*Note: These cohorts all used the ACCUPLACER assessment. However, Amarillo College is now (fall 2013 forward) required to offer the Texas Success Initiative (TSI) Assessment.

Attrition by Number of General Education Courses

Attrition was highest among students who were not taking any general education courses. In fact, when semester hours were excluded from the model, all four categories were significant in that taking more general education courses could be equated to higher retention rates.

However, results from the model should be interpreted cautiously, as further cross tabulation showed that the number of general education courses appeared to be related to the number of semester credit hours.

The graphs on the following pages show the number of general education courses by each of the semester hours categories for the retention and attrition groups.

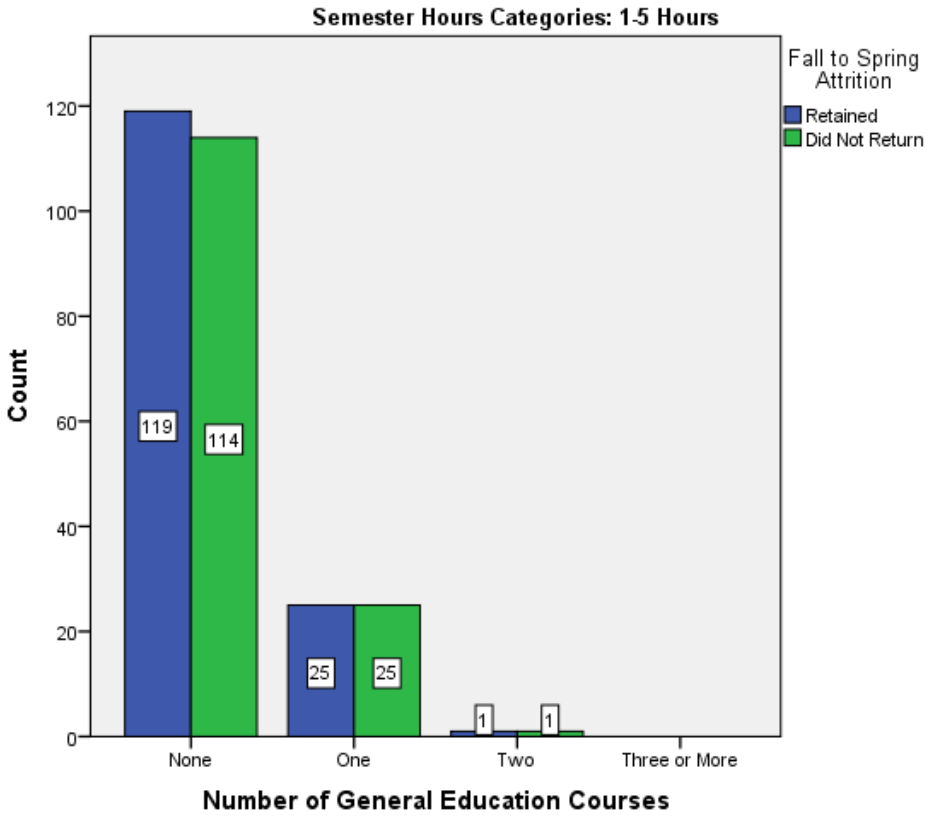


Attrition by Number of General Education Courses for Students Taking 1-5 Semester Hours

On this page and the next two pages, counts are shown, rather than percentages, due to small sample sizes within some of the groups.

In the 1-5 hours category, the majority (233 out of 285 total) of students did not take any general education courses.

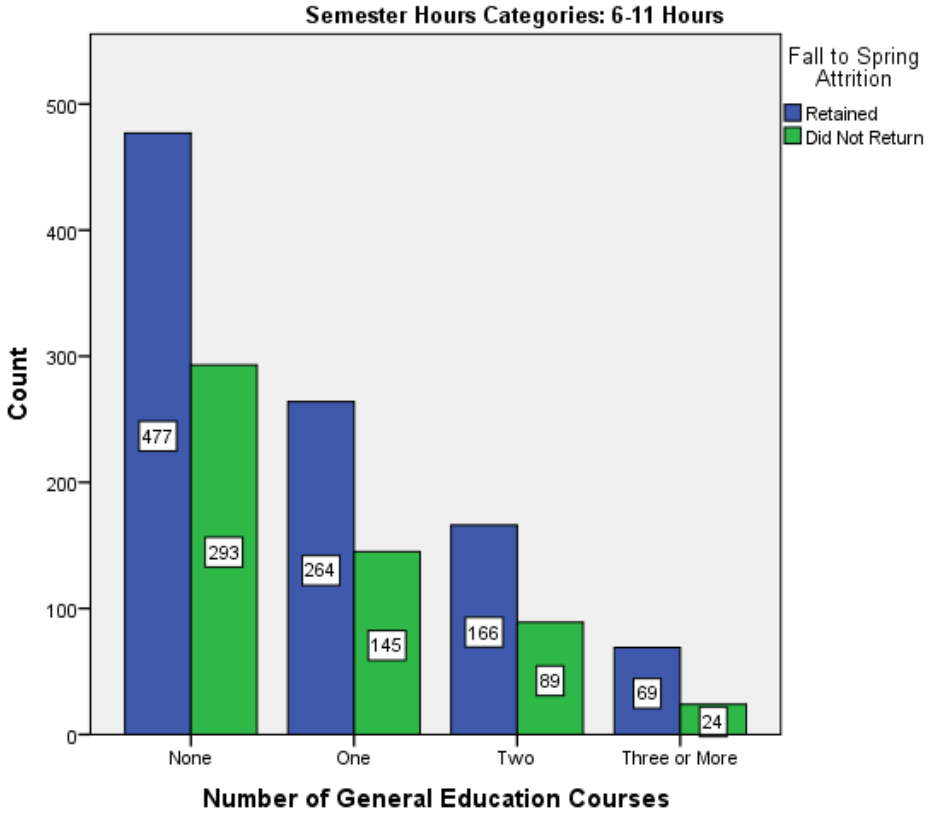
Students with 1-5 hours who did not take any general education courses were almost as likely to leave as to be retained the following spring semester.



Attrition by Number of General Education Courses for Students Taking 6-11 Semester Hours

As can be seen in the graph on the right, fewer students with 6-11 hours took three or more general education courses. These students also had the lowest attrition when compared to the other students with 6-11 hours.

Attrition rates were similar for students with 6-11 hours carrying 0-2 general education courses.

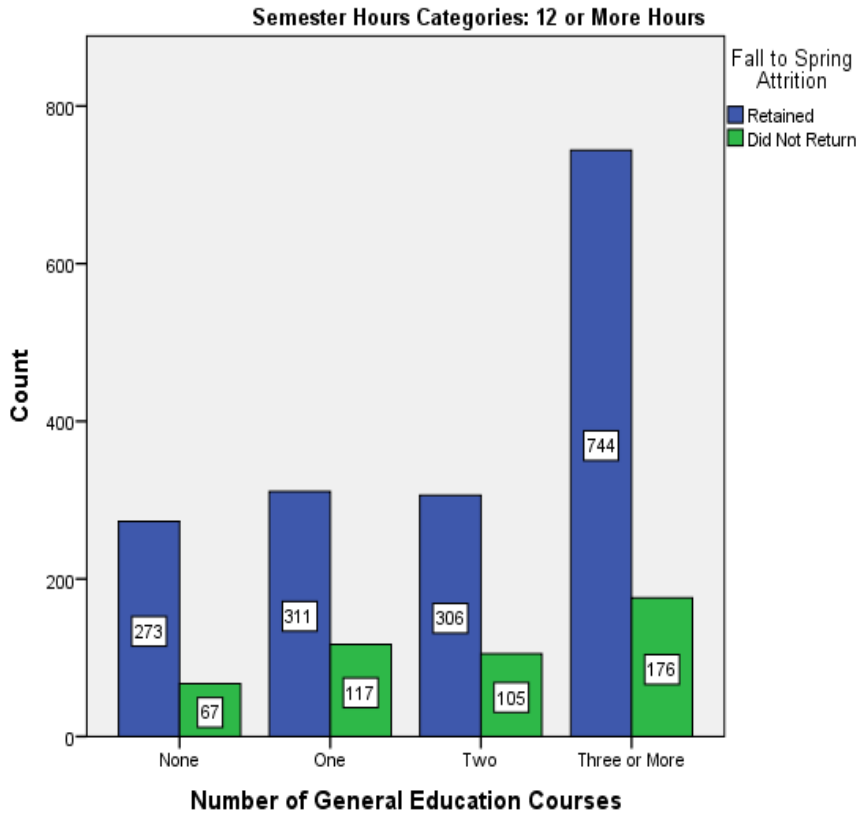


Attrition by Number of General Education Courses for Students Taking 12 or More Semester Hours

An interesting result for the full-time (12 or more hours) category is the attrition rate when comparing students with no general education courses (20% of students) to those who took three or more general education courses (19% of the students).

Further analysis (see Appendix 2) indicates full-time students with no general education courses were taking either one or more technical courses or one or more developmental courses.

Students who took 12 or more hours, whether in a technical program or in general education courses, had lower rates of attrition than students taking fewer hours. This pattern held for students taking developmental courses as well (refer to Appendix 3 for these results).

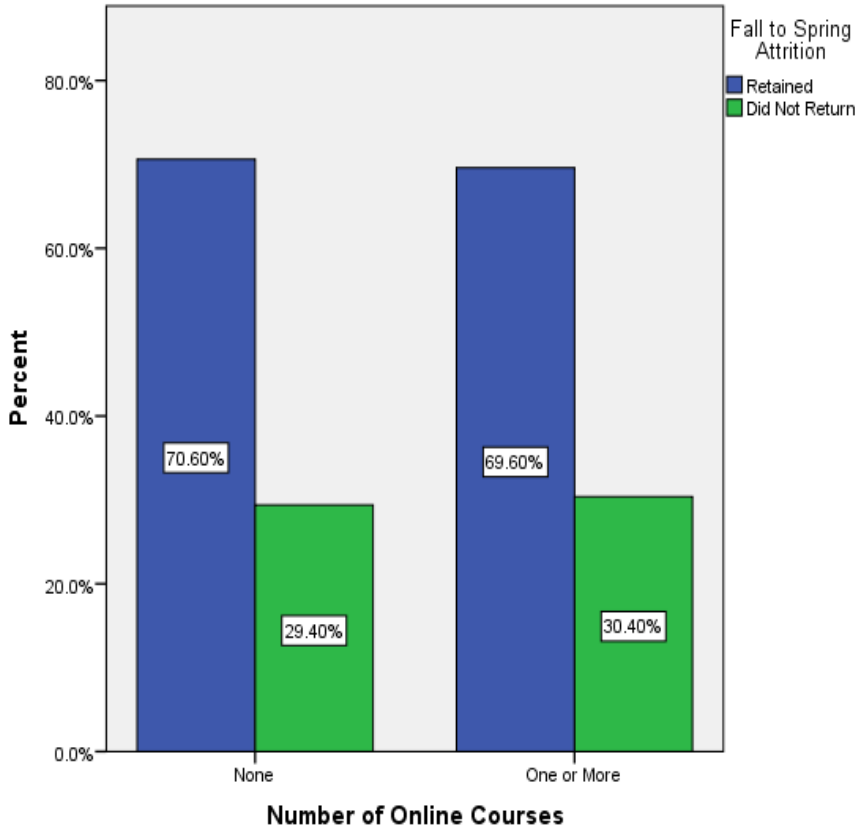


Attrition by Number of Online Courses*

When compared to students who did not take any online courses, students who took one or more online courses had an increased likelihood of attrition. This result is not readily apparent in the graph at right. Several variables may have influenced this outcome, including semester hours, gender and age group (results not shown, available upon request).

Fourteen percent of students taking 1-5 hours took one or more online courses, compared to sixteen percent in the 6-11 hours category and eighteen percent in the 12 or more hours category.

Fewer males (13%),took one or more online courses as compared to females (21%). Students age 30 and above took the highest percentage of online courses (25%), followed by 20-29 year-old students (21%) and the 17-19 year-old group (14%).



*Number of online courses was derived from building abbreviations for the courses (e.g. classroom, web, etc.).

Summary of Findings

- The results presented in this report represent associations (rather than cause and effect relationships) between the predictor variables and the target outcome. However, the analysis provides a good first step in predicting attrition at Amarillo College. Adding variables to the model that have been found to be important in other studies, such as high school average, would probably contribute to our understanding of this outcome. Further testing and validation of the model with new cohorts is also recommended. It is important to keep in mind that interactions among the variables (e.g., gender and semester hours) have not been evaluated for statistical significance, but have been presented in this report as avenues for further exploration
- This model was constructed using early term predictors. An end of term model could also be developed that encompasses much more information, such as grade point average (GPA), number of dropped courses and course performance (e.g., A-C, D, and F courses). Preliminary analysis indicated that GPA is a potentially important predictor of attrition.
- By far, semester hours proved to be the most important predictor of attrition for the Fall 2010 to Fall 2012 cohorts. While decisions should be made carefully, in light of these results it is worth examining the performance of students taking less than a full time load. It might also be fruitful to conduct focus groups or structured interviews with students who leave the semester following their first term.
- When gender was taken into account, attrition rates for males enrolled in fewer than 12 hours were higher than females enrolled in fewer than 12 hours. The higher attrition rate for males does not appear to be related to a goal of personal enrichment or gaining job skills. All students in the sample reported their educational objective as Associate degree, transfer credit or certificate completion, which would conceivably account for their academic intentions. On the other hand, students (especially males) with a goal of certificate completion were somewhat more likely to leave the following spring when compared to students pursuing an Associate degree.

Summary of Findings, Continued

- Student age was also a predictive factor in the model. Older students had a decreased likelihood of attrition; however, students in the 20-29 year-old age group had the highest rate of attrition. This effect appears to have been related to semester hours as well. In particular, high rates of attrition were found across all age groups enrolled in 1-5 credit hours. Higher rates of attrition were found for the 17-19 and 20-29 age groups within the 6-11 hours category when compared to students age 30 and above. The lowest attrition was among students with 12 or more hours, regardless of age group. It would be of interest to learn more about the factors involved when students take less than a full-time load. Are these students working full time? Do they have dependents or do they have other financial obligations? Unfortunately, data on employment and number of dependents was not available for this analysis.
- Merit-based financial aid and student income were also significant predictors of attrition. Students who did not receive merit aid or did not apply had an increased likelihood of attrition when compared to students who received a merit-based award. Higher average student income was associated with a decreased likelihood of attrition. The meaning of this effect is difficult to tease out because of the lack of other financial indicators (such as employment).
- Only 18% of students receiving merit-based aid left AC the following spring term. This result seems obvious in that we would expect students who receive aid based on past performance to have higher grades and stay in school. It is quite possible that these students transferred to another school, however that seems unlikely after one semester. Merit-based aid students also had a lower average student income than students who did not receive/apply for merit-based aid. The low average student income level may help explain why 18% of merit-based students left AC in the spring—perhaps they left for financial reasons. Following up with these students would be helpful in understanding their reasons for leaving after their first fall term.

Summary of Findings, Continued

- ACCUPLACER math scores were also a significant predictor of attrition. Higher average scores were associated with a decreased likelihood of attrition.
- When compared to students enrolled in three or more general education courses, students with one or two of these courses had an increased likelihood of attrition. However, the number of general education courses taken could be associated with the number of semester hours taken. This association made interpretation of this model result somewhat problematic due to redundancy (number of general education courses may be measuring the same thing as semester hours). It was actually the most important predictor of attrition when semester hours was excluded from the model. What is clear is that full-time students enrolled in three or more general education courses had much lower attrition levels.
- Cross tabulations revealed that students taking 1-5 hours with no general education courses were about as likely to leave as to stay the following spring. Students enrolled in 6-11 hours were less likely to enroll in 3 or more general education courses. Those students who had 3 or more courses had a lower attrition rate than students with 0-2 general education courses in the 6-11 hours category as well. Full time (12 or more hours) students had lower attrition rates regardless of the number of general education courses.
- The number of online courses was a significant predictor of attrition. Compared to students who did not take any online courses, students who took one or more online courses had an increased likelihood of attrition. This effect may have been modified by semester hours, gender and age group. The number of students taking online courses may have been understated due to the way this variable was derived from available data.

Next Steps

- Before implementing strategies to address attrition, further refinements to the model are necessary. First, data on high school average and/or class rank would be an important addition to the model. These variables would be useful in understanding how high school performance affects attrition. Data on employment and dependent status (if these measures are available or are not a burden to collect) could potentially add to our understanding of students' reasons for leaving. Second, at the next administration of the SENSE survey, a protocol could be developed to increase the likelihood that student IDs will be accurately recorded by students so that this data can be better used in future analyses. Third, this model is flexible in that variables can be added to answer various questions. For example, data on participation in intramural sports can be added to the model to assess the effect of this program on attrition.
- A late-term model of attrition can be developed fairly quickly to explore the impact of first-term academic performance on attrition. If GPA is found to be a significant predictor, it might be helpful to develop a data collection plan for midterm grades in order to help advisors identify students at-risk for attrition as early as possible. Of course, if it is possible to collect midterm grades, they should be fed into the model to gauge whether they are predictive of attrition. The No Excuses interventions (First Year Seminar, tutoring) would be important additions to a late-term model as well.
- Finally, the early-term and late-term models should be validated with data from the Fall 2013 and Spring 2014 terms. Model building is an ongoing process, involving continuous refinements and validation. No set of predictors is perfect and the model can easily be misrepresented if important variables are unidentified or excluded. However, the evidence from the early and late-term models can aid prevention efforts if applied with the previously mentioned caveats in mind.

Appendix 1
Basis for Admission

The table shows the number and percentage of students retained/not retained by basis for admission. Students who were high school graduates or earned a GED had similar rates of attrition (28% for high school graduates, compared to 32% for GED).

Students admitted by individual approval had an attrition rate of 52%. According to the admission information provided on the AC web site:

> "Persons who have not graduated from an accredited high school or earned a GED , who are 18 years of age or older, may be admitted on an individual approval basis."

When individual approval students were excluded from the analysis, basis for admission was no longer a significant predictor of attrition.

Fall to Spring Attrition * Basis for Admission Crosstabulation

			Basis for Admission			
			High School Graduate	Individual Approval	GED	Total
Fall to Spring Attrition	Retained	Count	2346	86	337	2769
		% within Basis for Admission	72.0%	48.0%	68.4%	70.4%
	Did Not Return	Count	914	93	156	1163
		% within Basis for Admission	28.0%	52.0%	31.6%	29.6%
Total		Count	3260	179	493	3932
		% within Basis for Admission	100.0%	100.0%	100.0%	100.0%

Appendix 2
Tables for Selected Results

Fall to Spring Attrition * Semester Hours Categories Crosstabulation

			Semester Hours Categories			
			1-5 Hours	6-11 Hours	12 or More Hours	Total
Fall to Spring Attrition	Retained	Count	149	983	1637	2769
		% within Semester Hours Categories	51.0%	64.0%	77.8%	70.4%
	Did Not Return	Count	143	552	467	1162
		% within Semester Hours Categories	49.0%	36.0%	22.2%	29.6%
Total		Count	292	1535	2104	3931
		% within Semester Hours Categories	100.0%	100.0%	100.0%	100.0%

Fall to Spring Attrition * Gender Crosstabulation

			Gender		
			Male	Female	Total
Fall to Spring Attrition	Retained	Count	1160	1609	2769
		% within Gender	66.6%	73.4%	70.4%
	Did Not Return	Count	581	582	1163
		% within Gender	33.4%	26.6%	29.6%
Total		Count	1741	2191	3932
		% within Gender	100.0%	100.0%	100.0%

Fall to Spring Attrition * Age Groups Crosstabulation

			Age Groups			
			17-19	20-29	30 and above	Total
Fall to Spring Attrition	Retained	Count	1627	770	362	2759
		% within Age Groups	71.6%	67.3%	71.7%	70.4%
	Did Not Return	Count	645	374	143	1162
		% within Age Groups	28.4%	32.7%	28.3%	29.6%
Total		Count	2272	1144	505	3921
		% within Age Groups	100.0%	100.0%	100.0%	100.0%

Fall to Spring Attrition * Originally Reported Education of Father Crosstabulation

			Originally Reported Education of Father				
			Not a High School Graduate	High School Graduate	Some College or Associate Degree	Bachelor's Degree or Above	Total
Fall to Spring Attrition	Retained	Count	860	817	454	331	2462
		% within Originally Reported Education of Father	69.0%	72.8%	71.7%	78.3%	71.9%
	Did Not Return	Count	387	305	179	92	963
		% within Originally Reported Education of Father	31.0%	27.2%	28.3%	21.7%	28.1%
Total		Count	1247	1122	633	423	3425
		% within Originally Reported Education of Father	100.0%	100.0%	100.0%	100.0%	100.0%

Fall to Spring Attrition * Most Recent Educational Objective Crosstabulation

			Most Recent Educational Objective			
			Associate Degree	Transfer Credit	Certificate Completion	Total
Fall to Spring Attrition	Retained	Count	1971	460	338	2769
		% within Most Recent Educational Objective	71.0%	75.3%	62.2%	70.4%
	Did Not Return	Count	807	151	205	1163
		% within Most Recent Educational Objective	29.0%	24.7%	37.8%	29.6%
Total		Count	2778	611	543	3932
		% within Most Recent Educational Objective	100.0%	100.0%	100.0%	100.0%

Fall to Spring Attrition * Term Merit-Based Award Status Crosstabulation

			Term Merit-Based Award Status		
			Funds Awarded	No Aid/Did Not Apply	Total
Fall to Spring Attrition	Retained	Count	451	1660	2111
		% within Term Merit-Based Award Status	82.4%	73.5%	75.2%
	Did Not Return	Count	96	599	695
		% within Term Merit-Based Award Status	17.6%	26.5%	24.8%
Total		Count	547	2259	2806
		% within Term Merit-Based Award Status	100.0%	100.0%	100.0%

Fall to Spring Attrition * Number of General Education Courses Crosstabulation

			Number of General Education Courses				
			None	One	Two	Three or More	Total
Fall to Spring Attrition	Retained	Count	869	600	473	813	2755
		% within Number of General Education Courses	64.7%	67.6%	70.8%	80.3%	70.4%
	Did Not Return	Count	474	287	195	200	1156
		% within Number of General Education Courses	35.3%	32.4%	29.2%	19.7%	29.6%
Total		Count	1343	887	668	1013	3911
		% within Number of General Education Courses	100.0%	100.0%	100.0%	100.0%	100.0%

Fall to Spring Attrition * Number of Online Courses Crosstabulation

			Number of Online Courses		
			None	One or More	Total
Fall to Spring Attrition	Retained	Count	2281	474	2755
		% within Number of Online Courses	70.6%	69.6%	70.4%
	Did Not Return	Count	950	207	1157
		% within Number of Online Courses	29.4%	30.4%	29.6%
Total		Count	3231	681	3912
		% within Number of Online Courses	100.0%	100.0%	100.0%

Appendix 3

Attrition Rates for
Technical/Developmental Courses When
Number of General Education Courses = 0

Fall to Spring Attrition * Number of Technical/Tech WECM Courses * Semester Hours Categories Crosstabulation[a]

Semester Hours Categories				Number of Technical/Tech WECM Courses		Total
				None	One or More	
1-5 Hours	Fall to Spring Attrition	Retained	Count	108	11	119
			*	53.7%	34.4%	51.1%
		Did Not Return	Count	93	21	114
			*	46.3%	65.6%	48.9%
	Total		Count	201	32	233
			*	100.0%	100.0%	100.0%
6-11 Hours	Fall to Spring Attrition	Retained	Count	342	135	477
			*	60.6%	65.5%	61.9%
		Did Not Return	Count	222	71	293
			*	39.4%	34.5%	38.1%
	Total		Count	564	206	770
			*	100.0%	100.0%	100.0%
12 or More Hours	Fall to Spring Attrition	Retained	Count	46	227	273
			*	76.7%	81.1%	80.3%
		Did Not Return	Count	14	53	67
			*	23.3%	18.9%	19.7%
	Total		Count	60	280	340
			*	100.0%	100.0%	100.0%
Total	Fall to Spring Attrition	Retained	Count	496	373	869
			*	60.1%	72.0%	64.7%
		Did Not Return	Count	329	145	474
			*	39.9%	28.0%	35.3%
	Total		Count	825	518	1343
			*	100.0%	100.0%	100.0%

a. Number of General Education Courses = None

*% within Number of Technical/Tech WECM Courses

Fall to Spring Attrition * Number of Developmental Courses * Semester Hours Categories Crosstabulation[a]

Semester Hours Categories				Number of Developmental Courses				Total
				None	One	Two	Three or More	
1-5 Hours	Fall to Spring Attrition	Retained	Count	21	81	14	3	119
			*	50.0%	49.7%	60.9%	60.0%	51.1%
		Did Not Return	Count	21	82	9	2	114
			*	50.0%	50.3%	39.1%	40.0%	48.9%
	Total		Count	42	163	23	5	233
			*	100.0%	100.0%	100.0%	100.0%	100.0%
6-11 Hours	Fall to Spring Attrition	Retained	Count	51	110	210	106	477
			*	68.0%	67.9%	57.4%	63.5%	61.9%
		Did Not Return	Count	24	52	156	61	293
			*	32.0%	32.1%	42.6%	36.5%	38.1%
	Total		Count	75	162	366	167	770
			*	100.0%	100.0%	100.0%	100.0%	100.0%
12 or More Hours	Fall to Spring Attrition	Retained	Count	81	106	29	57	273
			*	81.8%	82.2%	80.6%	75.0%	80.3%
		Did Not Return	Count	18	23	7	19	67
			*	18.2%	17.8%	19.4%	25.0%	19.7%
	Total		Count	99	129	36	76	340
			*	100.0%	100.0%	100.0%	100.0%	100.0%
Total	Fall to Spring Attrition	Retained	Count	153	297	253	166	869
			*	70.8%	65.4%	59.5%	66.9%	64.7%
		Did Not Return	Count	63	157	172	82	474
			*	29.2%	34.6%	40.5%	33.1%	35.3%
	Total		Count	216	454	425	248	1343
			*	100.0%	100.0%	100.0%	100.0%	100.0%

a. Number of General Education Courses = None

*% Within Number of Developmental Education Courses

Amarillo College
Early Predictors of Attrition

First-Time-in College, Degree-Seeking Students
Cohorts: Fall 2010 to Fall 2012 Terms

Executive Summary

Sharon A. Delgado, Institutional Research Analyst
January 10, 2014

Amarillo College

Key Findings

- The sample consisted of 3,932 first-time-in-college, degree-seeking students. Three cohorts were used in the analysis; Fall 2010, Fall 2011 and Fall 2012. Attrition was defined as students who left Amarillo College the spring semester following their first fall term. This definition produced two groups: the Retained Group (students who enrolled the following spring) and the Did not Return (attrition) group. This grouping served as the target variable for a logistic regression model. Key findings highlighted in this report include semester hours, gender and merit-based award status, all of which were important predictors of attrition in this sample.
- Semester hours was a significant predictor of fall to spring attrition. Students taking 1-5 hours had the highest rate of attrition (49%). Students taking 6-11 hours had an attrition rate of 36%. Full-time students had the lowest level of attrition (22%).
- Males had an increased likelihood of attrition when compared to females. This effect was more pronounced for males taking less than 12 hours. The attrition rate for males with 1-5 semester hours was 62%. Males taking 6-11 hours had an attrition rate of 42%.
- Students who did not receive/did not apply for a merit-based award had an increased likelihood of attrition when compared with students who received merit-based financial aid. Cross-tabulations indicate all but two of the students receiving merit-based aid were AC Foundation scholarship recipients. These students had an 18% attrition rate, compared to 27% for students who did not receive or did not apply for this type of aid.
- Other significant predictors included age groups, father's education level, educational objective, student income, ACCUPLACER math score, number of general education courses and number of online courses. Please see page 6 for a brief description of these results.
- It is important to keep in mind that some variables were not available for the analysis, including high school average, dependent status, and other financial variables (such as employment). These variables will be incorporated into the model when they become available and may change the results.

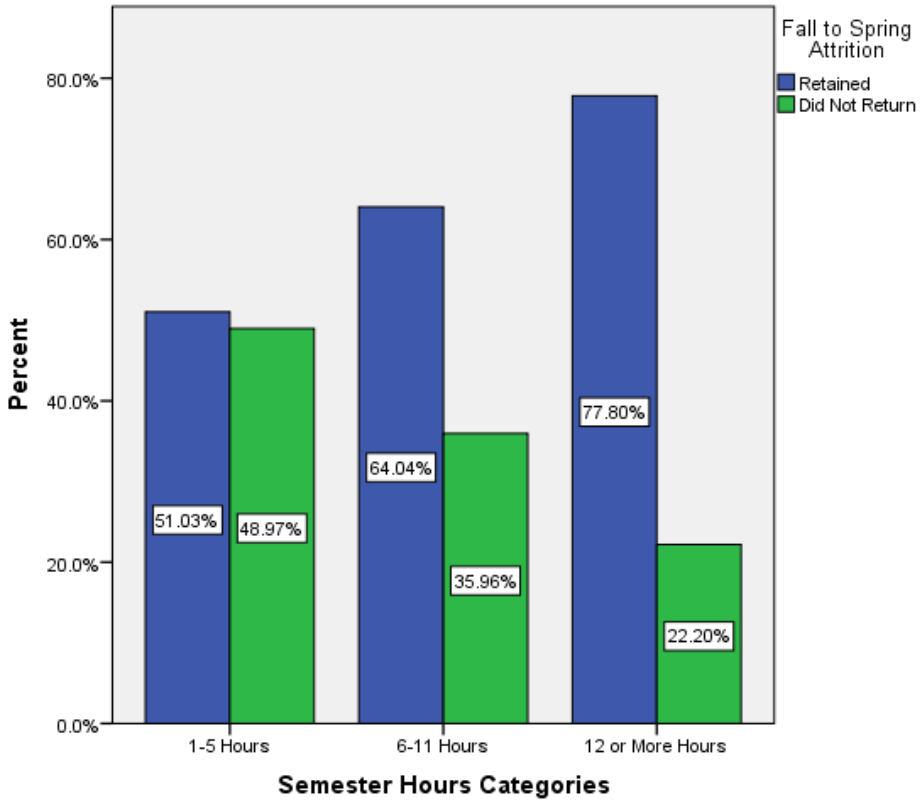
Attrition by Semester Hours at the Census Date

Total hours at semester census date was a significant predictor in the model.

- Students taking **1-5 credit hours** were **3.2 times more likely to leave the following spring than full-time (12 or more credit hours) students.**
- Students taking **6-11 credit hours** were **1.9 times more likely to leave** compared to full-time students.

Attrition by Semester Hours

- **1-5 Hours*** = 51% Retained; 49% Not Retained
- **6-11 Hours** = 64% Retained; 36% Not Retained
- **12 or More Hours** = 78% Retained; 22% Not Retained



Please note that the 1-5 credit hours group was a small group comprised of 292 students. Also, percentages are calculated for the total of each category on the horizontal axis throughout this report.

Goal 5

Earn a Certificate, Degree or Transfer - Earn Awards

This table shows the number of students who completed a credential in the given year.

Cohort Year	Total Students in Cohort	Completed a Degree or Certificate						
		Year 1	Year 2	Year 3	Year 4	Year 5	Total	%
2008	1,874	243	246	250	335	402	1,476	79%
2009	2,341	62	181	335	434		1,012	43%
2010	2,370	40	179	350			569	24%
2011	2,246	38	202				240	11%
2012	2,221	46					46	2.1%

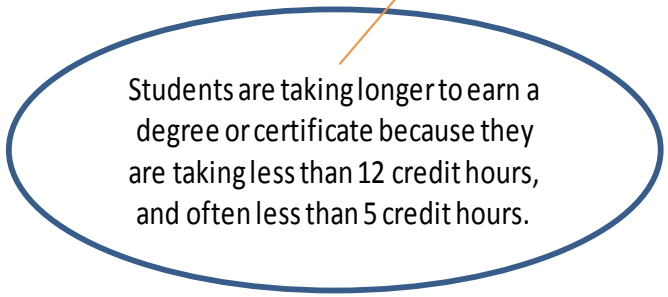


Table 3: Time to Degree by Basis for Admission

	Original Basis of Admission				
DEGREE	HS Grad	GED	Transfer	HS Concurrent	Total
AA Degree	6.8	8.4	6.2	5.0	6.3
AS Degree	7.3	8.0	5.6	5.5	6.5
AAS Degree	8.2	9.3	5.3	6.9	7.1
Certificate 1	5.7	5.3	5.2	5.7	5.6
Certificate 2	7.5	6.5	4.1	5.2	6.3

Source: 2M Calculations with data from Amarillo College

Attrition by Gender

Males were **1.5 times more lik**ely to be in the attrition group (**Did not Return**) when compared to females.

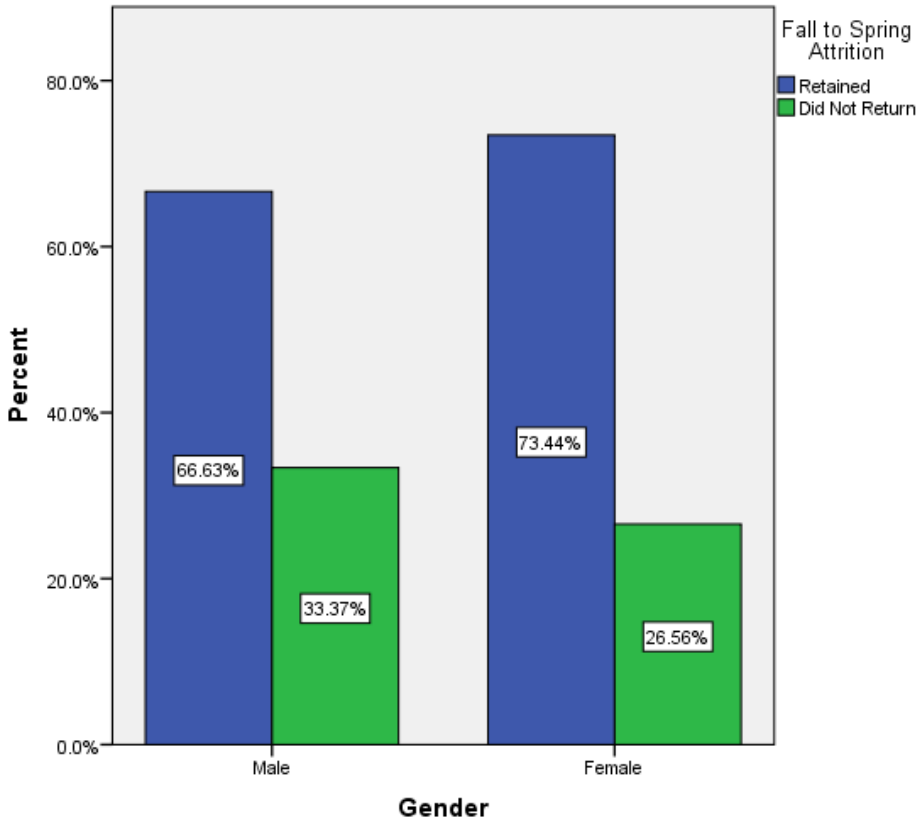
Two thirds of males in the sample were retained (66.63%), compared to slightly less than three quarters (73.44%) of the females.

Attrition by Gender and Semester Hours

1-5 Hours: 62% male attrition compared to 37% female attrition

6-11 Hours: 43% male attrition compared to 31% female attrition

Full-Time Students: Overall, full-time students were much more likely to be retained, with similar rates of attrition for both males (23%) and females (21%) taking 12 or more hours.

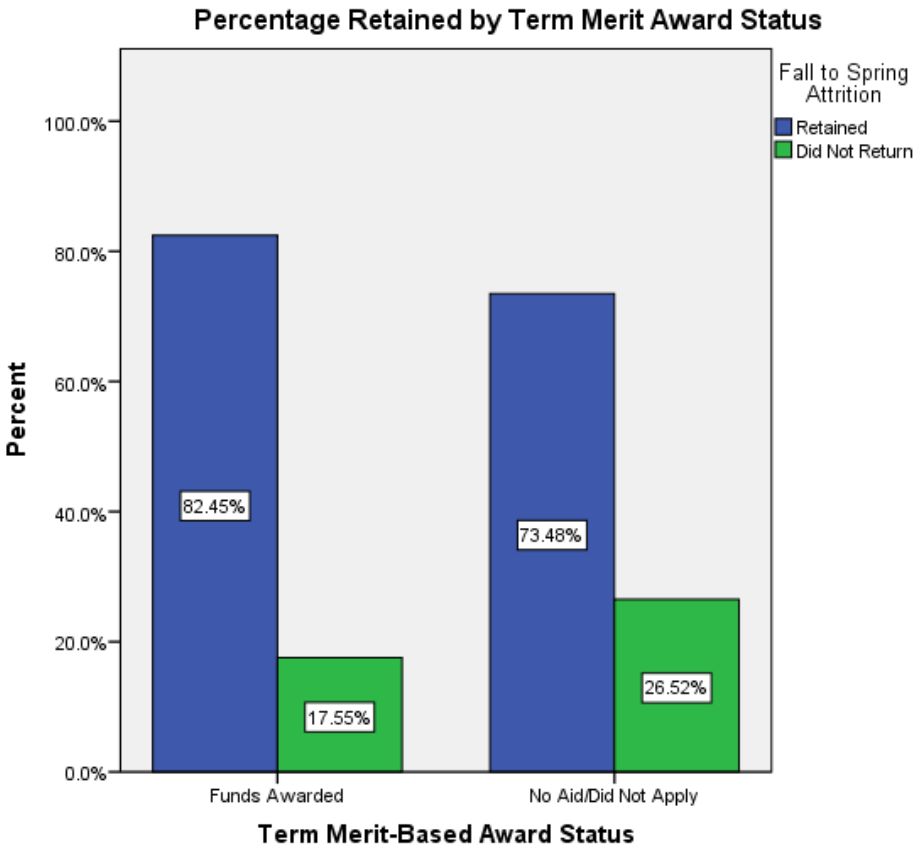


Attrition by Merit-Based Award Status

Students who did not receive or did not apply for a merit-based award for the fall term were 1.8 times as likely to leave school the following semester when compared to students who received merit aid.

Only 18% of students with a merit award left AC in the spring, compared to 27% who were not awarded or did not apply for this type of aid.

It is important to keep in mind that the number of students receiving merit-based aid was 451 for the retained group and 96 for the did not return group compared to 1660 (retained) and 599 (not retained) for the No Aid/Did Not Apply group.



A Brief Overview of Other Model Results

- Age groups: Students in the 20-29 year-old age group had the highest rate of attrition among the age groups. Students in the 17-19 and 30 and above age groups had similar rates of attrition.
- Father's education level: The highest level of attrition was for students who reported that their father was not a high school graduate. The lowest level of attrition was found for students who reported their father had obtained a Bachelor's degree or above.
- Educational Objective: The lowest level of attrition was among students seeking transfer credit. The highest percentage was found for students pursuing a certificate.
- Higher student income was associated with a lower likelihood of attrition.
- Higher ACCUPLACER math scores were also associated with a decreased likelihood of attrition.
- The number of general education courses was also a significant predictor in the model. However, this variable was confounded with semester hours and should be interpreted cautiously. When semester hours was omitted from the model, enrolling in more general education courses was associated with decreased attrition.
- Students taking one or more online courses had an increased likelihood of attrition. Several variables may have influenced this result, including semester hours, gender and age group. This variable should be interpreted cautiously as well.