

All Retention all the Time: How Institutional Research Can Synthesize Information and
Influence Retention Practices

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Abstract

This study reports how an institutional research office at a large public research university has taken the lead to call attention to retention problems, describe attrition/retention predictors, and influence policy. Building on existing retention theories and previous institutional research studies, the institutional research office began coordinating several first-year study-based initiatives whose primary purpose was understanding and promoting first-year retention. Data on student characteristics, survey data on student involvement, NSSE data, non-returning survey data, and data from various student engagement programs are being analyzed to better understand attrition and retention. Student commitment and institutional commitment are discussed as factors affecting attrition and retention. Strategies for maximizing these commitments as ways of increasing student success and retention are discussed.

All Retention all the Time: How Institutional Research Can Synthesize Information and Influence Retention Practices

Student retention can be viewed from two different perspectives. The first perspective has to do with broad-based benefits to the university and even to society. These benefits include “enrollment management,” maintaining stable enrollments to support the university’s budget (Levitz, Noel, & Richter, 1999). The enrollment management consulting firm Noel Levitz has a retention savings worksheet to quickly estimate gains in revenues as a direct result of increases in student retention. Stable enrollments based on higher retention rates are more predictable, rely less on pressuring the admissions office to increase recruiting targets (while often lowering quality), and are more manageable in terms of course demand and level and type of student services needed. A policy report by ACT argued that retaining students will help students reach their goals and ultimately help America’s workforce compete globally (Lotkowski, Robbins, & Noeth, 2004).

Higher retention benefits the image of the university when retention rates are used as indicators of institutional success. Higher retention rates typically lead to higher graduation rates. Retention and graduation rates are widely collected by IPEDS, state SHEEO’s, US News and World Report, et al., and are subsequently publicized to internal and external audiences. Attrition has a negative public connotation, even when it is understood that students do not “drop out” but rather transfer to other colleges or universities (Sanoff, 2004). However, Porter (2003) both argues and provides evidence that retention is not simply a “stay in school” or “drop out” outcome. Students stay, leave, “stop out” for indefinite periods, and transfer out. Different groups of students have different determinants of retention. For example, female attrition rates have been attributed to social factors more than for males (Landry, 2002). A meta-analysis done

by American College Testing to investigate the relationship of academic and non-academic factors to retention revealed that a combination of academic factors (ACT, HS GPA) and non-academic factors (socioeconomic status, institutional commitment, academic goals, social support, academic self-confidence, and social involvement are influential) (Lokowski, Robbins, & Noeth, 2004). Understanding retention thoroughly requires data from multiple sources to develop a rich understanding of why students stay and leave.

The second perspective of retention has to do with fostering student success. When we admit students as new freshmen, we are inviting them to become part of our campus community. One of our goals is to enable individual students to be as successful as they can be. If we are serious about helping students succeed, retention is a necessary but not sufficient component to their success. In fact, retention should be our minimal expectation for student success, that they simply return to our campus after their first year (T. Kahrig, personal communication, January 14, 2005). One way we can do this is to involve and engage our students in their education (Kuh, Shuh, Whitt, & Associates, 1991). Student involvement--academic, social, and goal commitment--is related to quality of undergraduate education (Astin, 1993). The National Institute of Education report Involvement in Learning suggested that students who are more involved in activities related to their formal education will grow more as individuals, will be more satisfied with their education, will tend to persist in their education to graduation, and will tend to continue their learning after college (Study Group on the Conditions of Excellence in American Higher Education, 1984). Involving Colleges discusses how colleges and universities should foster student involvement on their campuses (Kuh, Shuh, Whitt, & Associates, 1991). One way to do this is to study and encourage student involvement. The experiences during the first (freshman) year affect students' development and performance throughout college. Indeed,

attrition occurs most frequently during the first year, and retention programs most often are directed toward freshmen. Student involvement and engagement studies provide information that is important to student retention and student development.

Furthermore, efforts to involve students in the life of the campus are believed to have higher retention. According to Tinto (1999),

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. (pp. 5-6)

Tinto and others have drawn a parallel between attrition rates and suicide rates. Tracing back to Durkheim's theories of suicide, communities with higher suicide rates were typically those with less social integration between individuals and society and were deemed less healthy environments. Likewise, campuses with high attrition rates are thought to offer fewer opportunities for involvement and integration for students. Campuses with higher attrition rates are judged to offer less healthy environments for student success.

Significant evidence suggests that learning communities are an effective way to involve and engage students and help them succeed. They contribute positively to educational outcomes (Lenning & Ebbers, 1999; Pascarella & Terenzini, 2005). Reported benefits include increased student achievement and satisfaction, enhanced academic skills, and increased retention and graduation rates for participants. Zhao and Kuh (2004) discussed the positive relationships between learning communities and student engagement, as measured by the National Survey of

Student Engagement (NSSE). They facilitate students' development of relationships with other students and with faculty and staff (Hoffman, Richmond, Morrow, & Salomone, 2002).

For many years the institutional research office at a large public research university in the mid-west has done an annual retention study (Office of Institutional Research, 2005). This study takes existing data from the university's student information system and reports variables that are related to attrition/retention. Student characteristics such as sex, race/ethnicity, admissions status, residency, living arrangement, academic college and major, aptitude, high school and college academic performance, and course enrollment are among the variables studied. This study and these characteristics are similar to those advocated by Gardner, Barefoot, & Swing (2001). This report, entitled "Factors Associated with First-Year Student Attrition and Retention," has been widely distributed and is available on-line:

<http://www.ohiou.edu/instres/retention/RetenAthens.pdf>

The information in the report has been used to identify areas in which retention is strong as well as areas with high attrition. The high attrition areas have then been addressed via different retention initiatives. For example, females in certain academic colleges with high grade point averages (above a 3.0) had higher attrition rates. As a result, the institutional research office established an intervention program to increase retention of these students from the first year to the second year.

This university's retention rate had increased from about 67 percent in the 1970's to a high of 86 percent in the 1990's. This change was commonly attributed to the university's shift from open admissions to selective admissions during this time. However, in the last five years this university has experienced a gradual decrease in first-year retention. In 2004-05, this university experienced the third year in a row of decreasing retention, currently at 82 percent.

During this period the institutional research office regularly produced its retention report, which documents the year-to-year decline in retention, and communicated the university's retention rates. Each year the report was changed in content, format, and distribution in an attempt to actively communicate to the campus community about retention issues. Following the examples of other institutional researchers (Hansen, Borden, & Howard, 2003; Angelo & Rogers, 2003), data on courses with high attrition rates were identified and reported. Information on the financial impact of attrition and the potential revenue benefits of increasing retention, even modestly, were communicated. However, little attention was paid to these findings, and retention continued to decline.

In 2003-04, a number of initiatives were either begun or revitalized that were designed to increase student involvement and engagement. Some of these are learning initiatives, residential learning communities, student engagement committees, supplemental instruction, and academic probation intervention. The primary goal of these programs is to foster student success, especially for first-year students. "Student success" primarily means enhancing learning. Retention was not considered to be a primary goal of these programs, but it was believed that retention might increase as a result of them. Previous research suggests that these types of efforts benefit students in retention and academic success and persistence by influencing their levels of academic and social integration (Kuh, Shuh, Whitt, & Associates, 1991; Pascarella & Terenzini, 1991; Tinto, 1993). Pascarella, Terenzini and Wolfle (1986) found that participation in first-year programs, such as freshman seminars and orientation programs, had indirect positive effects on student persistence by positively influencing students' social integration and institutional commitment.

The institutional research office was asked to perform assessments or evaluations of

many of these programs. Although retention was not considered a primary goal or outcome, retention was often requested as a dependent variable in studies of program effectiveness. Conversations about these programs presented opportunities to advocate retention being a primary outcome goal. “Retention” is defined as a measure of student success in student goal achievement by tracking a cohort of new first-year students (freshmen) to their second year of enrollment at this university.

The research questions for these assessments are, simply, are there retention differences between students participating in these programs and students not participating in these programs? Comparing different groups of participants, are there differences? What “best practices” can be identified and supported? The basic design of this research is to compare groups of students—between participants and non-participants, and within participant groups (e.g., different sections, dates, courses, programs). This approach, taken by an office of institutional research, is appropriate for a broad-based internal audience of faculty and staff (Bauer, 2004; Dooris & Nugent, 2001). It has also been used previously in assessing supplemental instruction (Romoser, Rich, Williford, & Kousaleous, 1997).

Many factors can influence program outcomes—student characteristics, student aptitude, student prior academic performance, student experiences, differences in program delivery, student motivation, and attitudes toward learning. It is common to report institutional retention rates broken down by their level of admissions selectivity (Levitz, Noel, & Richter, 1999). Many studies of programs designed to involve students through learning communities compare retention rates of participants vs. non-participants, but they typically do not control for these influences (e.g., Johnson, 2000). Comparing program outcomes will necessitate controlling for as many of these factors as possible. This can be accomplished statistically by blocking and/or

matching students on relevant and available variables. As a result, program participants can be virtually matched with comparable non-participants. Once variability from indirect and intervening factors is removed statistically, the final analysis will be a comparison of outcomes variables of participants and non-participants. Previous studies have compared stayers and leavers, controlling for aptitude and prior academic success (Kahrig, 2005; Lombard; 2005; Williford, Chapman, & Kahrig, 2001).

The institutional research office at this university has had a long history (over 20 years) of studying student involvement and more recently, student engagement. In the last three years an annual student involvement study has been conducted along with annual administration of the NSSE. Comparisons are possible between participants and nonparticipants. Comparisons among participant groups are also possible. These comparisons are helping describe the types of students that participate in these engagement programs and stay or leave. The comparisons help describe the different outcomes for different types of programs.

In addition to these existing surveys, in 2004-05, the institutional research office designed a new survey of non-returning students. Previous institutional research studies do not address the question of why students leave the university before their second year. In fall quarter 2004, the Office of Institutional Research conducted a survey to assess why the fall 2003 freshmen did not return for fall 2004.

To provide another perspective on attrition from students who are still enrolled, students' responses to the First-Year Involvement study and the NSSE are presented. Comparisons in student involvement and engagement between stayers and leavers are made to help better understand retention and attrition (Office of Institutional Research, 2005). This type of study by an office of institutional research was highlighted by Gardner and Barefoot (2005) as a best

practice to identify programs that contribute to institutional excellence. Indeed, “offices of IR can carry out analyses to help guide enrollment management strategies as well as conduct assessment and evaluation studies of the effectiveness of various strategies” (Hossler & Anderson, 2005, p. 69).

The research problem for this study is to identify the primary influences on attrition and retention at this university. What do leavers tell us, after they have left the university, about why they left? What differences in involvement and engagement are there between stayers and leavers, using data collected while both groups are enrolled? Finally, are there retention differences between groups of students participating in programs such as residential learning communities and supplemental instruction? Are there “best practices” of retention support that can be identified and duplicated? The answers to these questions are helping shape practices and policy to improve first-year retention.

Method

Multiple methods are employed in this study. Annual first-year student retention studies done at this university identify characteristics of groups of first-year students who return for their second year and students who do not return. These studies, however, do not address the question of why students leave before their second year. One disadvantage of doing a survey of leavers is that the students who leave may be disenfranchised with the institution, and therefore low responses rates lead to low reliability of the responses. Despite the disadvantages of non-returning student surveys, they can provide valuable information, after the fact and when combined with other information obtained from students while they are still enrolled, that provides an important source of information so that we can better understand the complexities of student attrition and retention.

A new questionnaire was developed to identify factors that influenced students' decisions to leave the university. The questionnaire is divided into three parts. First, respondents were asked to select their current status, i.e. whether they left the university temporarily or permanently and if they permanently transferred to another institution, they were also asked to name that institution. Second, respondents were asked to identify the major and minor reasons that influenced their decision to leave the university. Third, in open-ended questions, respondents were asked about other factors related to their leaving the university.

The survey was conducted in the fall 2004. As of fall quarter 2004, 649 or 18 percent of the 3,672 freshmen entering in the fall 2003 did not return to the university. Eighty-six (13%) of the 649 non-returning students were not surveyed because these students were suspended from the university for either disciplinary or academic reasons. Twenty were dismissed for disciplinary reasons, and 66 were dismissed for academic reasons (combined, 2.3% of the total class). Of the 563 leavers surveyed, 32 percent responded to a questionnaire sent to their last known address. Although slightly more females than males responded, the responses were otherwise generally representative of the population.

Two different assessments of student involvement and engagement are conducted during the first year. The Involvement Study first was conducted at the university in 1979 as part of the University of Michigan Project CHOICE (Center for Helping Organizations Improve Choice in Education) study. The questionnaire later was revised, and the Involvement Study was incorporated and adapted into an ongoing university-wide and department-based student assessment program.

The offices of Institutional Research, Residence Life, and the Dean of Students conduct the Involvement Study annually. At the end of winter quarter 2004 all enrolled freshmen who

matriculated in fall quarter 2003 were asked to participate. A personalized cover letter from the dean of students was given to each student, asking them to participate in the study. Residence hall staff distributed the questionnaires to their residents; about 100 “commuter” students were surveyed by mail. The response rate for 2003-04 was 82 percent. Respondents were generally representative of the sample in terms of sex, race/ethnicity, academic college, and academic performance. The questionnaire collects information about the students' academic involvement (contacts with faculty and staff and participation in academic activities), social involvement (social-peer involvement and participation in activities), student satisfaction and goal commitment, and personal goals and adjustment to college. Many of these items ask how frequently students participated in various activities. Stayers and leavers were identified by whether or not they returned in fall 2004.

The National Survey of Student Engagement (NSSE) asks students to report, on continuous scales, how frequently they do activities that are associated with commonly believed to be good educational practices (Kuh, 2003). In addition, students are asked to rate their perceptions of the educational environment at their college or university, such as quality of relationships, support services provided by the institution, and contributions the institution adds to their educational experience. Both paper and electronic versions of administration are available. At the university NSSE is administered electronically during the winter and spring quarters annually. In the winter and spring quarter of 2004 a sample of 1,792 new freshmen was invited to participate in the NSSE. A personalized e-mail from the president of the university was sent to these students, asking them to participate. The response rate was 28%, and respondents were generally representative of the sample in terms of sex, race/ethnicity, academic college, and academic performance. Stayers and leavers were identified by whether or not they

returned in fall 2004. Most NSSE questions ask students how frequently they do these activities, and item means are produced. A higher item mean indicates more engagement.

In addition to survey data, two first-year experience programs, residential learning communities (RLC) and supplemental instruction (SI) were studied to determine if there were differences between retention rates of students participating in these programs and students not participating in these programs. Comparisons among groups of participants were done to determine if there were differences in retention rates. As a result, we hoped to identify “best practices” and areas for further improvements. The basic design of this research is to compare groups of students—between participants and non-participants, and within participant groups (e.g., different sections, courses, programs).

Many factors can influence program outcomes, especially student aptitude and student prior academic performance. Comparing retention rates necessitates controlling for these factors, which was accomplished statistically by blocking and/or matching students on relevant and available variables—ACT Composite score and high school percentile rank. As a result, program participants are virtually matched with comparable non-participants, and comparisons of retention rates of participants and non-participants are made on comparable groups.

The university where these studies were conducted is a large public research university located in the mid-west. With an enrollment of nearly 20,000 students, the university’s main campus is residential for the first two years. Eighty-five percent of the university’s students are undergraduates. A total of 3,672 freshmen matriculated as degree-seeking students in fall quarter 2003. Fifty-seven percent of the freshmen are female, 91% are Ohio residents, 6% are multicultural including international, and 23% are undecided in their major.

Results

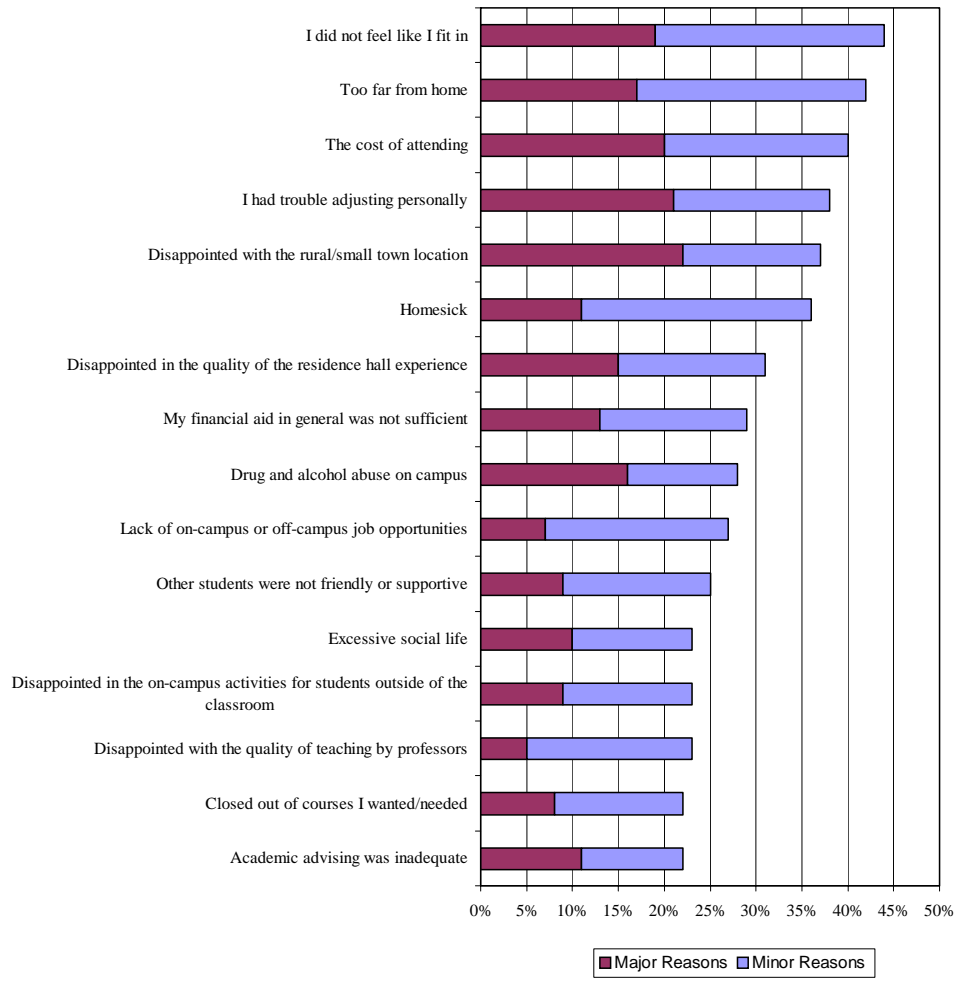
Non-Returning Student Survey

When asked what they were doing after leaving the university, 82 percent said they were attending college elsewhere, while 18 percent said they had only left the university temporarily. Three peer universities were mentioned most frequently as the other institution. These institutions were also identified by data received from the National Student Clearinghouse “Enrollment Search” as universities to which our students subsequently enroll.

Students were asked to select from a list of 48 possible reasons, the major and minor reasons for leaving the university. The major and minor reasons for leaving the university were combined to create a "total reason" percentage for each potential reason item. Figure 1 shows the 16 total reasons with which leavers most frequently responded. Of the top six (major and minor combined) reasons for leaving the university four were personal adjustment-related reasons. The third highest reason was the cost of attending, while the fifth reason was disappointment with the rural/small town location of the university. Insufficient financial aid or student employment, drug/alcohol abuse and excessive social life, and disappointment with residence hall, social life, and quality of instruction, academic program, and advising were also frequently selected. Students’ responses to open-ended questions confirmed these factors as the most frequent reasons for leaving the university.

The list of potential reasons by just the major reason percentage produced a slightly different ordering. While the top five reasons for leaving remained in the top five, the order was slightly changed. For example, the top major reason for leaving was the disappointment with the rural/small town location of the university, while that was only the fifth highest total reason for leaving.

Figure 1. Frequency of major and minor reasons for leaving the University.



Engagement of Stayers and Leavers

Table 1 provides mean comparisons of stayers and leavers on the first 22 items from the 2004 NSSE questionnaire having to do with individual student's engagement activities. The question asks, "in your experience at your institution during the current school year, about how often have you done each of the following?" The item means from the returning students were greater than the means of the leavers on 21 of the 22 items, indicating greater reported engagement. The greatest differences were found in the following items: discussing ideas outside of class, including diverse perspectives in class discussions, having conversations with students different from you, putting together ideas or concepts from different courses, working on a project using different sources, using an electronic medium to discuss or complete an assignment, and asking questions in class.

Mean comparisons of stayers and leavers on the institutional emphasis items from the 2004 NSSE questionnaire are presented in Table 2. The question asks, "to what extent does your institution emphasize each of the following?" Stayers' item means were significantly higher on all items in this section except the item, "spending significant amounts of time studying and on academic work." The greatest differences were found in the items, "encouraging contact among students from different backgrounds," "attending campus events and activities," "providing support to thrive socially," and "helping you cope with non-academic responsibilities."

Table 3 shows item mean comparisons from stayers and leavers on the institutional contribution items. The question asks, "to what extent has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas?" On all 16 of these items stayers had higher means than the leavers, indicating greater engagement. The

*Table 1**Mean Comparisons of National Survey of Student Engagement between Stayers and Leavers*

Stayers and Leavers Engagement Compared	Stayers	Leavers	Difference
Asked questions in class or contributed to class discussions	2.59	2.38	.20
Made a class presentation	2.00	1.89	.11
Prepared two or more drafts of a paper or assignment before turning it in	2.56	2.53	.02
Worked on a paper or project that required integrating ideas or information from various sources	2.83	2.60	.23
Included diverse perspectives (different races, religions, genders, political beliefs, etc.) in class discussions or writing assignments	2.57	2.30	.28
Come to class without completing readings or assignments	2.05	2.11	(.06)
Worked with other students on projects DURING CLASS	2.20	2.09	.11
Worked with classmates OUTSIDE OF CLASS to prepare class assignments	2.22	2.15	.07
Put together ideas or concepts from different courses when completing assignments or during class discussions	2.36	2.15	.22
Tutored or taught other students (paid or voluntary)	1.53	1.49	.04
Participated in a community-based project (e.g., service learning) as part of a regular course	1.31	1.32	(.01)
Used an electronic medium (listserv, chat group, Internet, instant messaging, etc.) to discuss or complete an assignment	2.71	2.49	.22
Used e-mail to communicate with an instructor	3.08	2.94	.14
Discussed grades or assignments with an instructor	2.43	2.26	.17
Talked about career plans with a faculty member or advisor	2.10	1.94	.16
Discussed ideas from your readings or classes with faculty members outside of class	1.68	1.66	.02
Received prompt feedback from faculty on your academic performance (written or oral)	2.55	2.40	.15
Worked harder than you thought you could to meet an instructor's standards or expectations	2.47	2.28	.19
Worked with faculty members on activities other than coursework (committees, orientation, student life activities, etc.)	1.39	1.26	.14

table continues

Table 1 (continued)

Stayers and Leavers Engagement Compared	Stayers	Leavers	Difference
Discussed ideas from your readings or classes with others outside of class (students, family members, co-workers, etc.)	2.65	2.34	.31
Had serious conversations with students of a different race or ethnicity than your own	2.30	2.11	.19
Had serious conversations with students who are very different from you in terms of their religious beliefs, political opinions, or personal values	2.78	2.53	.25

Note. Responses for items 1-22 were based on a four-point Likert-type scale with 1=Never, 2=Sometimes, 3=Often, 4=Very Familiar.

Table 2

Mean Comparisons of National Survey of Student Engagement Institutional Emphasis Items between Stayers and Leavers

Stayers and Leavers Engagement Compared	Stayers	Leavers	Difference
Institutional emphasis: Spending significant amounts of time studying and on academic work	3.01	2.93	.08
Institutional emphasis: Providing the support you need to help you succeed academically	2.95	2.48	.47
Institutional emphasis: Encouraging contact among students from different economic, social, and racial or ethnic backgrounds	2.46	1.83	.63
Institutional emphasis: Helping you cope with your non-academic responsibilities (work, family, etc.)	1.94	1.44	.50
Institutional emphasis: Providing the support you need to thrive socially	2.37	1.83	.54
Institutional emphasis: Attending campus events and activities (special speakers, cultural performances, athletic events, etc.)	2.75	2.12	.63
Institutional emphasis: Using computers in academic work	3.39	3.10	.29

Note .Responses for Institutional Emphasis items were based on a four point Likert-type scale with 1=Very little 2=Some 3=Quite a bit 4=Very much.

*Table 3**Mean Comparisons of National Survey of Student Engagement Institutional Contribution Items between Stayers and Leavers*

Stayers and Leavers Engagement Compared	Stayers	Leavers	Difference
Institutional contribution: Acquiring a broad general education	3.13	2.63	.50
Institutional contribution: Acquiring job or work-related knowledge and skills	2.57	2.17	.40
Institutional contribution: Writing clearly and effectively	2.85	2.37	.48
Institutional contribution: Speaking clearly and effectively	2.62	2.20	.42
Institutional contribution: Thinking critically and analytically	3.16	2.71	.45
Institutional contribution: Analyzing quantitative problems	2.59	2.24	.35
Institutional contribution: Using computing and information technology	2.87	2.24	.62
Institutional contribution: Working effectively with others	2.74	2.24	.50
Institutional contribution: Voting in local, state, or national elections	2.08	1.61	.47
Institutional contribution: Learning effectively on your own	2.96	2.63	.33
Institutional contribution: Understanding yourself	2.76	2.41	.35
Institutional contribution: Understanding people of other racial and ethnic backgrounds	2.37	1.73	.63
Institutional contribution: Solving complex real-world problems	2.46	1.83	.63
Institutional contribution: Developing a personal code of values and ethics	2.52	1.93	.60
Institutional contribution: Contributing to the welfare of your community	2.10	1.80	.29
Institutional contribution: Developing a deepened sense of spirituality	1.86	1.44	.42

Note. Responses for Institutional Contribution items were based on a four point Likert-type scale with 1=Very little 2=Some 3=Quite a bit 4=Very much.

greatest differences were found in the following items: understanding people of other racial and ethnic backgrounds, solving complex real-world problems, using computing and information technology, developing a personal code of values and ethics, and acquiring a broad general education.

Comparing the three NSSE sections, the greatest differences between stayers and leavers were found in the institutional emphasis and institutional contribution items. The individual engagement activity items were similar between stayers and leavers. Across all three sections, however, the items that were different had to do with diverse perspectives or conversations and contact with diverse groups of students. Leavers reported much less individual engagement and institutional emphasis than stayers on diversity items.

Involvement of Stayers and Leavers

Table 4 shows a summary of response means from academic involvement items, social involvement items, and goal commitment items. In most items, stayers reported greater frequency than leavers did. Students were asked to indicate how many conversations about educational plans, problems, or progress they had with their academic advisor, faculty, and Residence Life staff during the academic year. The large number of reported contacts by Residence Life staff for leavers may be due to the early involvement intervention, which targeted some of these students as high risk for attrition. Residence Life staff will have contacted these students as part of a potential leaver intervention program. Except for reported social contacts with faculty, number of books read outside class, and email contacts with faculty, stayers reported greater frequency of involvement than leavers did. While the academic involvement differences between stayers and leavers were somewhat mixed, the stayers reported more involvement in all of the social involvement items. In the goal commitment and satisfaction

Table 4
Mean Comparisons of Freshmen Involvement Study between Stayers and Leavers

Stayers and Leavers Involvement Compared	Stayers	Leavers	Difference
<u>Academic Involvement</u>			
Conversations With Academic Advisor	1.96	1.85	.12
Conversations With Faculty	1.59	1.28	.31
Conversations With Res. Life Staff	1.34	1.53	(.19)
Conversations With Student Org. Advisor	.31	.27	.03
Conversations With Other Staff Member	.36	.33	.03
Contacts With Career Advisor Or Program	1.15	.97	.18
Weekly Hours Spent Studying	11.16	11.02	.14
Number Of Books Read Each Month	1.74	1.81	(.07)
Number Of Times To The Library This Year	14.42	11.32	3.10
Conversations About Research	.70	.50	.20
Social Contacts With Faculty	.47	.77	(.30)
Daily Academic Computer Usage	2.51	2.42	.09
Email Communication With Faculty	7.75	8.04	(.29)
<u>Social Involvement</u>			
Parties Attended Each Month	6.59	5.94	.66
Drank Alcohol At Parties	5.54	5.05	.48
Go Out With Friends	10.08	9.11	.97
Cultural Events Attended This Year	4.20	3.73	.46
Conversations With International Students	2.76	2.44	.32
Weekends Spent On Campus Each Month	3.49	2.84	.65
Number Of Extracurriculars	1.41	1.19	.23
Number Of Extracurricular Hours	8.95	6.80	2.15
Number Of Five Best Friends On Campus	1.83	1.50	.33
Daily Personal Computer Usage	4.00	4.00	.00
<u>Goal Commitment and Satisfaction</u>			
Right Choice In Attending	1.68	2.88	(1.21)
Important To Graduate from this university	1.60	2.70	(1.10)
Important To Graduate From any university	1.11	1.24	(.12)
Will Return Next Fall	1.35	2.94	(1.58)
Quality Of Instruction	1.86	2.09	(.23)

Table 5

Frequency Comparisons of Freshmen Involvement Study between Stayers and Leavers

	% Important Stayers	% Important Leavers	% Satisfied Stayers	% Satisfied Leavers	% Difference In Important	% Difference In Satisfied
<u>Social Involvement</u>						
Peer Relationships	93%	88%	82%	68%	5%	14%
Close Friends	93%	84%	82%	67%	9%	15%
Student Organizations	59%	39%	46%	27%	20%	19%
Campus Activities	55%	42%	44%	29%	13%	15%
Cultural Events	35%	26%	34%	27%	9%	7%
International Students	31%	23%	28%	26%	8%	2%
Different Races	55%	46%	43%	37%	9%	6%
Religious Activities	36%	27%	34%	30%	9%	4%
Having a Job	40%	46%	31%	30%	-6%	1%
<u>Academic Involvement</u>						
Major Course	91%	84%	71%	58%	7%	13%
Non-Major Course	83%	82%	67%	58%	1%	9%
Faculty Availability	82%	77%	66%	57%	5%	9%
Faculty Social Contacts	55%	48%	43%	33%	7%	10%
Academic Advising	84%	74%	60%	44%	10%	16%
<u>Campus Atmosphere</u>						
Personal Security	87%	85%	81%	72%	2%	9%
Physical Environment	88%	82%	82%	70%	6%	12%
Social Atmosphere	89%	84%	80%	62%	5%	18%
Academic Atmosphere	88%	81%	77%	63%	7%	14%
Fit into Community	85%	76%	75%	53%	9%	22%
<u>Personal Goals</u>						
Personal Goals	94%	90%	83%	67%	4%	16%
Academic Goals	93%	90%	80%	67%	3%	13%
Career Goals	92%	89%	74%	60%	3%	14%
Adjust Academically	92%	88%	78%	63%	4%	15%
Adjust Socially	90%	85%	78%	60%	5%	18%
Adjust Emotionally	88%	84%	76%	57%	4%	19%
Managing Stress	88%	84%	66%	56%	4%	10%

table continues

Table 5 (continued)

	% Important Stayers	% Important Leavers	% Satisfied Stayers	% Satisfied Leavers	% Difference In Important	% Difference In Satisfied
<u>Social Involvement</u>						
Develop Self-Esteem	84%	79%	70%	58%	5%	12%
Develop Values/Beliefs	83%	78%	73%	61%	5%	12%
Develop Life Philosophy	73%	69%	62%	50%	4%	12%
Develop Spiritually	63%	57%	56%	42%	6%	14%
Academic Motivation	88%	83%	74%	62%	5%	12%
Academic Achievement	89%	85%	75%	63%	4%	12%
Interested in Studies	90%	87%	72%	60%	3%	12%

Note. Responses to Important and Satisfaction items were based on a five point Likert scale with 1=Very Important 2=Somewhat Important 3=Neutral/Don't Know 4=Somewhat Unimportant 5=Not at all Important and 1=Very Satisfied 2=Somewhat Satisfied 3=Neutral/Don't Know 4=Somewhat Dissatisfied 5=Not at all Satisfied.

items, a lower score indicates a more positive response. Students were asked how sure they were that they made the right choice in attending the university, how important it was for them to graduate from the university, and how important it was for them to graduate from any university. Students were also asked to rate the quality of instruction at the university. Stayers' response means were lower (more positive) than leavers' response means on all of these items.

Questions 22 through 58 of the involvement questionnaire have two parts. First, students were asked to rate how important each item was to them here at the university. The scale ranged from 1 (very important) to 5 (not at all important). Second, students were asked to rate how satisfied they were with each item. The scale ranged from 1 (very satisfied) to 5 (not at all satisfied). The responses were collapsed according to very important (1) and somewhat important (2) and very satisfied (1) and somewhat satisfied (2) to give a total importance and satisfaction percentage for each item. In addition, the percent differences in importance and satisfaction between stayers and leavers are presented. These items are presented in Table 5. Except for having a job, all of the items were more important and satisfactory to the stayers than the leavers. The greatest differences were in social involvement areas, particularly with the satisfaction items.

Residential Learning Communities and Supplemental Instruction

Table 6 shows freshman retention rates for RLC participants and non-participants. The aggregated percentages are shown along with breakdowns by ACT Composite score groups, high school percentile rank groups, first-quarter grade point average (GPA) groups, and then by RLC section (participants only). Both in the aggregate and when controlling for aptitude, previous high school performance, and first-quarter college performance, RLC participants had higher retention rates than non-participants. The greatest differences were in the lower performing

Table 6
Freshman retention rates of residential learning community participants and non-participants.

	RLC Participants	Non- Participants
Retention:		
Fall to Fall Total	91%	82%
Fall to Fall by ACT Group:		
0 – 14	--	67%
15 – 18	100%	75%
19 – 23	91%	80%
24 and above	93%	84%
Fall to Fall by High School Percentile Rank Group:		
Bottom 20 percent	--	69%
21 – 40	100%	83%
41 – 60	93%	76%
61 – 80	87%	81%
Top 20 percent	96%	85%
Fall to Fall by GPA Group:		
Below 2.0	65%	39%
2.0 and Above	93%	85%
Retention within participant groups:		
Fall to Fall by Section:		
A	94%	--
B	100%	--
C	89%	--
D	80%	--
E	95%	--
F	80%	--
G	95%	--
H	100%	--
I	82%	--
J	100%	--
K	84%	--
L	91%	--
M	89%	--
N	100%	--

Table 7

Freshman retention rates of supplemental instruction participants and non-participants.

Retention:	SI Participants	Non- participants
Fall to Fall Total	87%	81%
Fall to Fall by ACT Group:		
0 – 14	--	67%
15 – 18	87%	74%
19 – 23	85%	80%
24 and above	91%	84%
Fall to Fall by High School Percentile Rank Group:		
Bottom 20 percent	100%*	67%
23 – 40	88%	83%
41 – 60	82%	77%
61 – 80	87%	79%
Top 20 percent	89%	84%
Fall to Fall by GPA Group:		
Below 2.0	54%	39%
2.0 and Above	89%	85%
Retention within participant groups:		
Fall to Fall by Course:		
BIOS170	85%	77%
CHEM121	79%	72%
CHEM151	93%	84%
ECON103	83%	84%
GEOL101	92%	60%
MATH113	84%	77%
MATH115	100%	79%
MATH163A	94%	85%
MATH263A	100%	87%
MATH263B	86%	89%
PSY 101	89%	78%

*N = 1.

groups. The participant/non-participant retention rate for students with an ACT Composite of 15 – 18 was 25 percent different, compared to about 10 percent for the upper two groups. Students in the bottom two quintiles of high school performance had a participant/non-participant retention rate difference of 17 percent, which was much higher than the top two groups. Students with a first-quarter GPA below 2.0 had a participant/non-participant retention rate difference of 26 percent, compared to a difference of 8 percent for students with a GPA of above 2.0. There was variability among the participant groups; the retention rates ranged from 82 percent to 100 percent.

Table 7 shows freshman retention rates for SI participants and non-participants. The aggregated percentages are shown along with breakdowns by ACT Composite score groups, high school percentile rank groups, first-quarter GPA groups, and then by SI course. Both in the aggregate and when controlling for aptitude, previous high school performance, and first-quarter college performance, SI participants had higher retention rates than non-participants. The greatest differences were in the lower performing groups. The participant/non-participant retention rate for students with an ACT Composite of 15 – 18 was 13 percent different, compared to about 6 percent for the upper two groups. Students in the bottom two quintiles of high school performance had a participant/non-participant retention rate difference of 5 percent, which was about the same as the top two groups. Students with a first-quarter GPA below 2.0 had a participant/non-participant retention rate difference of 15 percent, compared to a difference of 4 percent for students with a GPA of above 2.0. There was variability among the courses; the retention rate differences ranged from 32 percent to 7 percent. Among participants only, the retention rates ranged from 79 percent to 100 percent.

Discussion

This university's campus-wide retention has decreased about 1% per year over the last three years from 85% in 2000 to 82% in 2003. The attrition rate from the second year to the third year is about half that of the first year, and the attrition rate from the third year to the fourth year is about half that of the second year. According to Tinto (1999), during the first year student goal commitment and the institution's influence are at their weakest points. If students can be retained beyond the first year, their probability for success increases in each subsequent year. Indeed, the results from the two comparative surveys showed that non-returning students are less involved socially on campus and less engaged by the institution. Results from the Student Involvement Study showed that students who left after their first year were less involved academically and socially—mostly socially. They also indicated significantly less goal commitment and satisfaction. NSSE results showed that students who left after their first year were less engaged—as individuals and in their perceptions of the university's attempts to engage and support them. In addition, the survey of non-returning students revealed that variables related to socialization (not fitting in, homesickness, trouble adjusting) were the most commonly reported reasons for leaving. Other reported problems, such as cost/financial aid and negative environmental experiences (residence hall experience, drug/alcohol abuse on campus, other negative experiences with students and faculty or advisors), low goal commitment combined with low institutional support result in higher rates of attrition.

Figure 2 shows a graphic interpretation of the outcomes of different levels of student commitment and different levels of institutional commitment. Student commitment, as measured by questions in the Student Involvement Study, has to do with students' goal commitment and general satisfaction. Higher student commitment is related to higher retention, and lower student

commitment is related to lower retention. Institutional commitment, as measured by NSSE institutional commitment and support questions, has to do with students' perceptions of how well the institution is poised to provide help and support. Higher institutional commitment is related to higher retention, and lower institutional commitment is related to lower retention. In addition, there is the potential for interaction between student commitment and institutional commitment. A combination of high student commitment and high institutional commitment is optimal for high retention. A combination of low student commitment and low institutional commitment is optimal for high attrition. A combination of low student commitment and high institutional commitment might be evidenced by low student achievement, disciplinary problems, and low retention. Programs to help students are available, but the students are probably not taking advantage of them. As a result, the potential for lower retention exists. Possible interventions might include efforts to integrate and socialize these students through student activities, mentoring, advising, counseling, and learning communities. A combination of high student commitment and low institutional commitment might be evidenced by low student achievement and also low retention. Because these students are motivated to succeed, potential retention efforts might include supplemental instruction or learning communities. Making these types of programs available to more motivated students might compensate for their perceptions of institutional inadequacies in other areas. Furthermore, the existing success of programs such as residential learning communities and supplemental instruction, especially for students of lower academic ability, suggests that these programs are more effective for certain groups of students.

The enrollment management approach to retention would suggest to the admissions office to identify and recruit students who are likely to persist. That is, admissions should strive to recruit students oriented to high student commitment. Once matriculated, the institution needs

Figure 2: Outcomes of student commitment and institutional commitment

		Student Commitment			
		High	Low		
Institutional Commitment	High	Retention	Low Achievement Low Retention Intervention Potential: Socialization Extended Orientation	Stay	
	Low	Low Achievement Low Retention Intervention Potential: Supplemental Instruction Learning Community	Attrition	Leave	
		Stay	Leave		

to ensure that high institutional commitment and support is available. Targeting these students would lead to more stable enrollments, a profile of matriculating freshmen that is acceptable to faculty, and optimal student success.

A possible topic for further study might be to study the interaction between student commitment and institutional commitment. Which combination of high and low student and institutional commitments are more likely to lead to attrition? Which combination is more likely to respond to attrition interventions?

In addition to the retention projects described in this report, the institutional research office has taken on other initiatives designed to better describe attrition/retention. An advising assessment is being conducted to help identify strengths and weaknesses in academic advising. A comprehensive first-year experience survey is being designed, the primary goal of which is to describe factors related to attrition/retention among currently enrolled students. The institutional research office already participates in two attrition intervention projects, one in winter quarter and one in spring quarter. This office has been asked to develop criteria to identify potential leavers as early as possible in fall quarter, similar to programs that exist at Ball State University and Georgia Southern University.

Findings from this study indicate that students who leave and those who return have very different perceptions about what the university's institutional environment emphasizes, how students' educational experiences have contributed to their personal and educational development, and how these contributed to their inability to adjust to college life. Students who leave often have different needs than students who stay, and if the university is not addressing these needs, they are likely to leave. As one comment from the non-returning survey put it, ". . . felt isolated, deserted in my dorm, little to no help adjusting as a freshman." Ways to better meet

the needs of our students include early intervention of at-risk students, increasing services to larger classes of freshmen, developing more learning communities, focusing more on student socialization and adjustment, and providing more student support. Yet how can the university organize its retention efforts to meet the needs of different groups of students with different needs?

The institutional research office at this university has been an active participant and even a leader in bringing some of these questions and problems to light. It has helped to offer suggestions for solving the problem of attrition in several ways. First, helping the university community understand why students leave is important. Some students do not return for reasons that only they can understand or control. Other students leave because their needs (personally and institutionally) are not being met. Second, helping the university community understand that attrition represents a failure to meet students' needs by not helping them succeed is crucial. If retention is seen merely as a means by which to stabilize enrollment and the institutional budget, students are being taken for granted and are not seen as the primary object of attention. Through studies of student and institutional commitment, and identifying patterns of attrition behavior, institutional researchers can help disenfranchised students tell their story. If the campus community is ready to listen to this story, then programs and practices can change so that future students' needs can be better met. Third, the institutional research office should participate as fully as its resources allow to distribute reports, disseminate findings, attend meetings, offer to do extra analyses, and be an advocate for retention reform on campus. For example, we identified courses that were linked to lower than average retention rates. Some of these courses were appropriate for providing supplemental instruction. The supplemental instruction coordinator adjusted the list of available courses so that supplemental instruction was offered for

courses that were linked to higher attrition. Finally, the institutional research office can help the campus community identify a common, model experience for freshmen, especially for freshmen with special student or institutional commitment needs. Identifying what works already, such as residential learning communities or supplemental instruction, and reinforcing those practices by widely disseminating information is in itself a best practice of institutional research.

References

- Angelo, T. & Rogers, G. (2003). *Blueprint for change in the first year experience*. Paper presented at the 43rd Annual Forum of the Association for Institutional Research, Tampa.
- Astin, A.W. (1993). *What matters in college? Four critical years revisited*. San Francisco: Jossey-Bass Publishers.
- Bauer, K.W. (2004). Your first stop for information: The office of institutional research. In R.L. Swing (Ed.) *Proving and improving, volume II: Tools and techniques for assessing the first college year* (Monograph No. 37). Columbia, SC: University of South Carolina, National Resource Center for the First-Year Experience and Students in Transition.
- Dooris, M.J. & Nugent, D.P. (2001). *The role of institutional research in implementing first-year seminars*. Paper presented at the Northeast Association for Institutional Research 28th Annual Conference, Cambridge, MA.
- Gardner, J.N. & Barefoot, B.O. (2005). Appalachian State University: High standards for the first year in North Carolina's high country. In B.O. Barefoot, J.N. Gardner, M. Cutright, L.V. Morris, C.C. Schroeder, S.W. Schwartz, M.J. Siegel, & R.L. Swing (Eds.), *Achieving and sustaining institutional excellence for the first year of college*. San Francisco: Jossey-Bass.
- Gardner, J.N., Barefoot, B.O., & Swing, R.L. (2001). *Guidelines for evaluating the first-year experience at four-year colleges* (2nd ed). Columbia, SC: University of South Carolina.
- Hansen, M.J., Borden, V.M.H., & Howard, R.D. (2003). *An action research paradigm for institutional research*. Paper presented at the 43rd Annual Forum of The Association for Institutional Research, Tampa.

- Hoffman, M. Richmond, J., Morrow, J., & Salomone, K. (2002). Investigating “sense of belonging” in first-year college students. *Journal of College Student Retention*, 4(3), 227-256.
- Hossler, D. & Anderson, D.K. (2005). The enrollment management process. In Upcraft, M.L., Gardner, J.N. Barefoot, B.O., & Associates (Eds), *Challenging and supporting the first-year student: A handbook for improving the first year of college*. San Francisco: Jossey-Bass.
- Johnson, J.L. (2000). Learning communities and special efforts in the retention of university students: What works, what doesn't, and is the return worth the investment? *Journal of College Student Retention*, 2(3), 219-238.
- Kahrig, T. (2005). *An evaluation of the residential learning communities program at the university: An analysis of student involvement, satisfaction, academic success, and persistence*. Unpublished doctoral dissertation, the university.
- Kuh, G.D. (2003). *The National Survey of Student Engagement: Conceptual Framework and Overview of Psychometric Properties*. Retrieved May 7, 2005, from http://www.indiana.edu/~nsse/pdf/conceptual_framework_2003.pdf
- Kuh, G.D., Shuh, J.H., Whitt, E.J. & Associates. (1991). *Involving colleges: Successful approaches to fostering student learning and development outside the classroom*. San Francisco: Jossey-Bass.
- Landry, C.C. (2002). Retention of women and people of color: Unique challenges and institutional responses. *Journal of college Student Retention*. 4(1), 1-13.
- Lenning, O.T. & Ebbers, L.H. (1999). *The powerful potential of learning communities: Improving education for the future*. ASHE-ERIC Higher Education Reports, 26(6).

- Levitz, R.S., Noel, L., & Richter, B.J. (1999). *Strategic moves for retention success. In Gaither, G.H. (Ed.), New directions for higher education, no. 108: Promising practices in recruitment, remediation, and retention.* San Francisco: Jossey-Bass.
- Lombard, A. (2005). Instructor framework and its relationship to student satisfaction with instruction, completion of course objectives, and course effectiveness in a first-year seminar. Unpublished doctoral dissertation, the university.
- Lotkowski, V.A., Robbing, S.B., & Noeth, R.J. (2004). *The role of academic and non-academic factors in improving college retention.* ACT Policy Report. Iowa City, IA: American College Testing.
- Office of Institutional Research. (2004). *Factors associated with first-year attrition and retention at the university Athens Campus.* (2004-SI-54). Ohio university, Athens, OH. Retrieved May 7, 2005, from <http://www.ohiou.edu/instres/retention/RetenAthens.pdf>
- Office of Institutional Research (2005). *First-year student attrition at the university 2003-04 to 2004-05: A comprehensive analysis of reasons for first-year (freshman) student withdrawal at the university.* (2005-SI-16). Ohio university, Athens, OH. Retrieved May 7, 2005, from <http://www.ohiou.edu/instres/involve/1stYearAttritionReport.pdf>
- Pascarella, E.T., & Terenzini, P.T. (1991). *How college affects students: Findings and insights from twenty years of research.* San Francisco: Jossey-Bass.
- Pascarella, E.T., & Terenzini, P.T. (2005). *How college affects students vol. 2: A third decade of research.* San Francisco: Jossey-Bass.
- Pascarella, E.T., Terenzini, P.T., & Wolfe, L.M. (1986). Orientation to college and freshman year persistence/withdrawal decisions. *The Journal of Higher Education*, 57, 155-175.
- Porter, S.R. (2003). Understanding retention outcomes: Using multiple data sources to

distinguish between dropouts, stop outs, and transfer-outs. *Journal of College Student Retention*, 5(1), 53-70.

Romoser, M.A., Rich, C.E., Williford, A.M. & Kousaleous, S.I. (1997). Supplemental instruction at the university: Improving student performance. In P.L. Dwinell & J.L. Higbee (Eds.), *Developmental education: Enhancing student retention*. Carol Stream, IL: National Association for Developmental Education.

Sanoff, A.P. (2004, November 23). Students seeking 'bond' with universities. *USA Today*, p. 5D.

Study Group on the Conditions of Excellence in American Higher Education. (1984). *Involvement in learning: Realizing the potential of American higher education*. Washington, D.C.: U.S. Government Printing Office.

Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition*, (2nd ed.) Chicago: The University of Chicago Press.

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

Williford, A.M., Chapman, L.C., & Kahrig, T. (2001). The University Experience course: A longitudinal study of student performance, retention, and graduation. *Journal of College Student Retention*, 2(4), 327-340.

Zhao, C.M. & Kuh, G.D. (2004). Adding value: Learning communities and student engagement. *Research in Higher Education*, 45(2), 115-138.