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# *An Evaluation of the Early Impacts of the Cluster Program and First Year Experience Seminar on New Freshman*

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## Abstract

This report evaluates the impact of the cluster program and First Year Experience Seminar (GE 197) on a variety of student outcomes including retention, grade point average, use of and satisfaction with Boise State University services, perceived impact of the University on skills development, social experiences, and general perceptions of the University. To evaluate the Cluster program, a control group was formed of similar students who were enrolled in the same core courses but not taking them together as a group. Two groups were formed to compare to First YES enrollees. One consisted of students enrolled in other GE courses, mostly GE 108. The other consisted of the remaining students who enrolled in neither. The effects of admissions index, age, and number of credits attempted first semester were statistically controlled to make the groups as equivalent as possible.

The following is a summary of major findings:

· Cluster students were more likely to re-enroll in the spring and again the following fall compared to the control group. In the spring, 91% of cluster students returned compared to 78% of controls. In the Fall, 68% returned compared to 52% of controls. No differences were found for any other variables, including GPA, use of and satisfaction with University services, impact on skills development, or social experiences.

· First YES and Other GE students also were more likely to re-enroll in the spring than the controls (90% vs. 80%). The differences did not hold for the following fall term, however, except for part-time students.

· After adjusting for entering academic ability, Other GE enrollees had the highest first term GPAs. They were followed by First YES enrollees, while the control group had the lowest GPAs. Results were not as strong for spring term GPAs.

- Compared to the control group, both First YES and Other GE enrollees thought the University had impacted them more highly. In addition, they had used more services and had participated in more study groups.

- Compared to the control group, First YES students were more likely to work with other students on projects, express satisfaction with services, and generally have better perceptions about their first semester at Boise State. This was not true for students enrolled in the other GE courses.

These findings indicate that early retention efforts seem to be paying off. Because the First YES (GE 197) and Other GE (mainly GE 108) students had many similar results despite initial differences in the kind of students enrolled in the two courses, a variety of orientation and study skills courses should probably continue to be provided.

## An Evaluation of the Early Impacts of the Cluster Program and First Year Experience Course on New Freshmen

What to do about retention at Boise State University? That was the general issue facing the Retention Committee. After research into what was working at other institutions and gathering local data, the committee issued a report in 1993 with 13 recommendations. One recommendation was to implement a cluster program that grouped courses together so that students enrolled in the cluster would have four classes with the same group of students, thereby allowing for the establishment of a sense of community—to make friends and develop a support group within the larger, more impersonal university setting. Another was to develop a one-credit course designed to help freshman and transfer students make successful transitions to the University and to assist them in reaching their educational goals. The resulting course was designed to provide students with academic skills training and essential information about the University, its rules, procedures and resources. Students also learned strategies for making appropriate major and career path choices. Named "First Year Experience Seminar" or First YES, all students enrolled in the cluster program took the course. Other new enrollees at the University were also strongly encouraged to enroll. Both new efforts kicked off in the Fall of 1995. This study reports on the initial outcomes from the program.

Outcomes Studied

Above all else, it was hoped that the efforts would improve retention. This, after all, was the purpose of implementation. It would also be useful, however, to see if the program had impacts in some other areas that were either directly or indirectly related to retention. Toward this end, the following outcomes were included in the study:

***Retention***: Defined as re-enrolling the next term and the following fall. These were two critical periods for losing new freshmen.

***Grade Point Average (GPA)***: Defined as first and second semester term GPAs. Students with lower grade point averages, especially below 2.0, have been found to be less likely to return to Boise State University (see Research Report 97-01).

***Use of Services***: Defined as the number of services students indicated they had used at the end of their first semester. Since First YES included familiarizing students with University resources, this seemed a viable outcome to study. A listing of the 16 services included can be found in the survey contained in Appendix A (items 15-30).

***Satisfaction with Services***: Defined as the sum of the satisfaction ratings students gave for those services they used. It was theorized that greater understanding of services and what they had to offer might lead to greater satisfaction.

***Impact of Boise State University on skills development***: Defined as the sum of the impact ratings in eight areas: commitment to lifelong learning, solving problems, developing job skills, learning about careers, getting along with different people, using effective oral and written communication, and drawing conclusions from data. The items used can be found in Appendix A (items 1-8).

***Social Experiences***: Students indicated how frequently they had held a conversation with faculty members and other students, worked with others outside of class on a project, and met as a member of a study group. See Appendix A, items 31-34 for details.

***General Perceptions of Boise State University:*** Defined by five items asking about Boise State University's environment, teaching, and helpfulness of staff. (See Appendix A, items 9-13.)

Comparison Groups

Students enrolled in the cluster program were all full-time students (9 or more credits) and, except for one, under the age of 20. Therefore, the cluster comparison group was also limited to full-time enrollees under the age of 20. In addition, every student in the comparison group took the same set of courses as students in the cluster program; they simply were in different sections so should not have seen the same students in all their classes. To ensure that gender and admissions index scores did not differentially influence the outcomes for the two groups, these two variables were assessed as part of the statistical analysis and any differences were statistically controlled.

Two comparison groups were formed for the First YES (GE 197) group. One consisted of students enrolled in other skills courses (mainly GE 108, but also GE 100, GE 114, and GE 115). Most students (N=106) were enrolled in GE 108, a two-credit reading and study skills course designed to assist students in meeting the demands of their university courses. A significant number (N=46) were enrolled in GE 100, a two-credit course title "Strategies for Academic Success". Only two students were enrolled in GE 114, a "re-entry" course for older students, and seven were enrolled in GE 115, Career and Life Planning. The second group included students enrolled in none of the GE courses. Because of the diversity of the First YES group, a number of additional variables were included to see if they had different effects for the First YES

group compared to the others. Besides admissions index scores and gender, checks were made to see if age and number of attempted credits needed to be statistically controlled in the analysis.

Statistical Analysis

For all variables except re-enrollment, regression analysis using the General Linear Model (GLM) was employed. In each case, the analysis commenced with checking to see if the covariates (i.e., admissions index, credits, age) had a significant impact on the analysis. If not, they were eliminated from further study. If they did, the next analysis looked to see if the covariates had different effects depending upon the comparison group being studied. Then differences between the comparison groups were tested for statistical significance after taking into account the effects of the covariates. Gender was included in the model as a main effect but eliminated from further analysis if an interaction with the comparison groups was not found. When necessary, a one-way Analysis of Variance and Tukey's for post hoc comparisons were used. An alpha level of .05 was used to establish statistical significance. For re-enrollment, chi-square testing was used.

The Effects of the Cluster Program

Results revealed that significantly more cluster students returned next semester and the following fall compared to control group students. Table 1 shows that at least 13% more cluster students returned in the Spring and 16% more in the Fall than control group students.

Table 1
Re-Enrollment Patterns for Fall 1995
Cluster Students and Controls

| Group | N in Group | % Returning Spring 1996 | % Returning Fall 1996 |
|---|---|---|---|
| Control | 102 | 78.4 | 52.0 |
| Cluster | 57 | 91.2 | 68.4 |
| NOTE: Statistical significance was found for both terms | | | |

For the remaining variables including GPA, social interactions, use of and satisfaction with services and perceptions of BSU, no significant differences could be found between the means for the cluster group and the control group (see Table 2). This included first and second semester GPA as well as measures of service use and satisfaction, social interactions, and general impressions of Boise State University. Note that very few people in the control group completed the survey so this may have effected the possibility of finding statistical significance.

Effects of First YES Course (GE 197)

Again, a relationship was found between enrolling in study skills courses and returning in the Spring. About 90% of students who enrolled in either First YES or another GE courses returned for the spring semester compared to about 80% of those who did not. Spring term differences were found for all groups, but enrolling in First YES appeared particularly helpful for part-time students and women. The relationship did not hold for the following Fall term, however, except for part-time students. See Table 3 for further details.

Enrolling in student success courses also was related to higher first and second term grade point averages. Table 4 shows the first and second term GPAs for the groups after they had been adjusted to account for the differences in admissions index scores. For the first semester, all groups differed significantly from one another with the Other GE group showing the highest

Table 2
Means for Cluster and Control Groups

| | **Control Group** | | **Cluster Group** | |
|---|---|---|---|---|
| **Variable** | N | Mean | N | Mean |
| First Term GPA* | 102 | 2.34 | 57 | 2.49 |
| Second Term GPA* | 93 | 2.27 | 51 | 2.25 |
| BSU's Impact | 8 | 18.13 | 50 | 16.26 |
| Faculty Conversations | 7 | 3.86 | 49 | 3.22 |
| Student Conversations | 7 | 5.00 | 49 | 4.96 |
| Project work | 7 | 2.43 | 49 | 3.35 |
| Study Group | 7 | 2.86 | 49 | 2.94 |
| Satisfaction with services | 7 | 21.57 | 49 | 19.59 |
| Number of services used | 7 | 8.71 | 49 | 8.00 |
| General Perceptions of BSU | 8 | 11.63 | 50 | 10.6 |
| Admissions index | 97 | 49.32 | 55 | 50.29 |
| *After adjusting for the effects of Admissions Index | | | | |

adjusted GPA and the No Study Skills control group showing the lowest. These differences disappeared for the second semester, however, when holding to a strict statistical standard of a probability level of .05. Since the probability level was .07, however, it seemed worthwhile to note that differences appeared between the No Study Skills group and the First YES group for the second semester, also.

As shown by Table 4, differences between the groups were found in a variety of other areas, too. Both the First YES and Other GE groups thought that Boise State University had impacted them more highly than the No Study Skills group, and both of these groups had used more Boise State University services as well. Both First YES and Other GE members were more likely than the No Study Skills group to meet as part of a study group, a behavior that has often been found to relate to retention.

Several other areas showed differences, but only between the First YES group and the No Study Skills group. Compared to No Study Skills students, First YES students were more likely to work with other students on projects, express satisfaction with Boise State University services, and generally have better perceptions about their first semester at Boise State. For women only, First YES students engaged in more conversations with other students than No Study Skills group members. The only area where no differences at all appeared between the groups was in the number of conversations held with faculty.

Table 3
Re-Enrollment Patterns for First YES,
Other GE, and Control Groups

| | | N in Group Fall 1995 | % Returning Spring 1996 | % Returning Fall 1996 |
|---|---|---|---|---|
| **Total Group** | Other GE | 117 | 89.74 | 59.83 |
| | None | 1,118 | 80.50 | 52.42 |
| | First YES | 210 | 89.52 | 57.14 |
| **Full Time** | Other GE | 72 | 91.67 | 61.11 |
| | None | 918 | 24.97 | 55.88 |
| | First YES | 188 | 90.43 | 56.91 |
| **Part time** | Other GE | 45 | 86.60 | 57.78 |
| | None | 200 | 60.80 | 36.50 |

| | | N in Group Fall 1995 | % Returning Spring 1996 | % Returning Fall 1996 |
|---|---|---|---|---|
| | First YES | 22 | 81.82 | 59.09 |
| **Male** | Other GE | 43 | 93.02 | 55.81 |
| | None | 512 | 78.32 | 46.48 |
| | First YES | 95 | 85.26 | 53.68 |
| **Female** | Other GE | 74 | 87.84 | 62.16 |
| | None | 606 | 82.34 | 57.43 |
| | First YES | 115 | 93.04 | 60.00 |

Table 4
Means for First YES, Other GE, and No Study Skills Control Groups

| | (1) None | | (2) First YES | | (3) Other GE | | Sig. Differences |
|---|---|---|---|---|---|---|---|
| **Variable** | N | Mean | N | Mean | N | Mean | |
| First term GPA[1] | 1114 | 2.11 | 209 | 2.31 | 114 | 2.62 | All groups |
| Second term GPA[1] | 1054 | 2.16 | 197 | 2.35 | 106 | 2.24 | None[2] |
| BSU's Impact[1] | 125 | 18.05 | 144 | 16.35 | 22 | 15.19 | 1&2, 1&3 |
| Faculty Conversations | 116 | 3.19 | 141 | 3.33 | 22 | 3.87 | None |
| Student Conversations - Males | 41 | 4.88 | 58 | 4.62 | 7 | 4.29 | None |
| Student Conversations - Females | 76 | 4.78 | 84 | 4.96 | 15 | 4.87 | 1&2 |
| | | | | | | | |

| | (1) None | | (2) First YES | | (3) Other GE | | Sig. Differences |
|---|---|---|---|---|---|---|---|
| Project Work | 117 | 2.66 | 142 | 3.11 | 22 | 3.09 | 1&2 |
| Study Group[3] | 117 | 2.23 | 142 | 3.11 | 22 | 3.09 | 1&2, 1&3 |
| Satisfaction w/services | 116 | 15.55 | 142 | 19.16 | 22 | 17.73 | 1&2 |
| Number of Services Used | 117 | 6.81 | 142 | 8.28 | 22 | 8.86 | 1&2, 1&3 |
| General Perceptions of BSU | 125 | 11.4 | 145 | 10.50 | 22 | 9.91 | 1&2 |
| Admissions Index | 854 | 48.9 | 180 | 46.14 | 72 | 33.78 | N/A |
| 1st Term Credits attempted | 1168 | 10.86 | 210 | 11.35 | 117 | 8.63 | N/A |
| Age | 1168 | 19.80 | 210 | 19.13 | 117 | 22.3 | N/A |

[1] After adjustment for effects of admissions index
[2] $p = .07$, and follow-up showed significant differences between group 1 & 2 ($p = .02$)
[3] After adjustment for the effects of credits attempted

## Conclusions

Fall 1995 retention efforts have shown early returns. For the Cluster program, retention was higher for participants than for controls, even though differences were not found for a series of variables that might have been expected to moderate re-enrollment. For the First YES course, a wider variety of differences was found ranging from re-enrollment to grade point average to satisfaction with the institution in a variety of ways. It should be noted, however, that for a number of outcomes, there were no differences between students enrolled in First YES and students enrolled in one of the other GE courses, mainly GE 108. Since the Other GE group of students showed lower admissions index scores and lower average credits attempted, the advising process may be correctly diverting students into the course which best suits them. Thus, a "one-size-fits-all" approach to course offerings should probably be avoided in the future.

These are beneficial findings that should help us further tailor our retention efforts. A final study of Fall 1995 freshmen will look at what factors predict retention for freshmen including academic preparation, psychological readiness for college, orientation, service use, social interactions, and other experiences that may impact re-enrollment decisions, should round out the findings.

# Appendix B

Table B-1
Spring 1996 Re-enrollment
Analysis for Impact of Cluster Program
The Logistic Procedure

| Analysis of Maximum Likelihood Estimates | | | | | | | |
|---|---|---|---|---|---|---|---|
| Variable | DF | Parameter Estimate | Standard Error | Wald Chi-Square | Pr > Chi-Square | Standardized Estimate | Odds Ratio |
| Intercept | 1 | 1.29 | 0.24 | 28.76 | 0.00 | . | . |
| Cluster Group | 1 | 1.05 | 0.53 | 3.99 | 0.05 | 0.28 | 2.86 |

Global Null Hypothesis:
-2 Log L Chi-Square for covariates = 4.628, l d.f., p = .0315

Table B-2
Fall 1996 Re-enrollment
Analysis for Impact of Cluster Program
The Logistic Procedure

| Analysis of Maximum Likelihood Estimates | | | | | | | |
|---|---|---|---|---|---|---|---|
| Variable | DF | Parameter Estimate | Standard Error | Wald Chi-Square | Pr > Chi-Square | Standardized Estimate | Odds Ratio |
| Intercept | 1 | 0.79 | 0.20 | 0.16 | 0.69 | . | . |
| Cluster Group | 1 | 0.69 | 0.35 | 4.01 | 0.05 | 0.18 | 2.00 |

Global Null Hypothesis:
-2 Log L Chi-Square for covariates = 4.132, l d.f., p = .0421

Table B-3
Spring 1996 Re-enrollment
Tests for Interactions The Logistic Procedure

| Analysis of Maximum Likelihood Estimates | | | | | | | |
|---|---|---|---|---|---|---|---|
| Variable | DF | Parameter Estimate | Standard Error | Wald Chi-Square | Pr > Chi-Square | Standardized Estimate | Odds Ratio |
| First YES | 1 | 1.12 | 8.63 | 0.02 | 0.90 | 0.23 | 3.08 |
| Other GE | 1 | -6.14 | 15.43 | 0.16 | 0.69 | -0.91 | 0.00 |
| Gender | 1 | -2.53 | 3.77 | 0.45 | 0.50 | -0.69 | 0.80 |
| Age/Gender | 1 | 0.08 | 0.20 | 0.15 | 0.70 | 0.38 | 1.08 |
| Age GE | 1 | 0.42 | 0.83 | 0.26 | 0.61 | 1.15 | 1.53 |
| Age YES | 1 | 0.05 | 0.46 | 1.00 | 0.92 | 0.17 | 1.05 |
| Cred Gender | 1 | 0.16 | 0.04 | 14.35 | 0.00 | 0.56 | 1.18 |
| Cred GE | 1 | 0.09 | 0.11 | 0.65 | 0.42 | 0.13 | 1.10 |
| Gred YES | 1 | 0.08 | 0.11 | 0.62 | 0.43 | 0.21 | 1.09 |
| Adm. Gender | 1 | 0.01 | 0.01 | 2.72 | 0.10 | 0.18 | 1.01 |
| Adm. GE | 1 | -0.10 | 0.03 | 0.14 | 0.71 | -0.05 | 1.99 |
| Adm. YES | 1 | -0.01 | 0.01 | 0.76 | 0.38 | -0.13 | 0.99 |
| Gender GE | 1 | -0.06 | 0.97 | 0.00 | 0.95 | -0.01 | 0.94 |
| Gender YES | 1 | -2.05 | 0.50 | 16.23 | 0.00 | -0.30 | 0.13 |

Global Null Hypothesis:
-2 Log L Chi-Square for covariates = 39.049, 14 d.f., p = .0004

Table B-4
Spring 1996 Re-enrollment
Analysis of Impact of Cluster Program
Males
The Logistic Procedure

| Analysis of Maximum Likelihood Estimates | | | | | | | |
|---|---|---|---|---|---|---|---|
| Variable | DF | Parameter Estimate | Standard Error | Wald Chi-Square | Pr > Chi-Square | Standardized Estimate | Odds Ratio |
| Intercept | 1 | 1.29 | 0.11 | 145.00 | 0.00 | . | . |
| First YES | 1 | 0.42 | 0.31 | 1.89 | 0.17 | 0.08 | 1.53 |
| Other GE | 1 | 1.07 | 0.53 | 4.02 | 0.04 | 0.15 | 2.91 |
| Linear Hypothesis: Testing | | | | | | | |
| FirstYES= Other GE | 1 | | | 1.12 | 0.29 | | |

Global Null Hypothesis:
-2 Log L Chi-Square for covariates =7.10, 2 d.f., p = .0287

Table B-5
Spring 1996 Re-enrollment
Analysis of Impact of Cluster Program
Females
The Logistic Procedure

| Analysis of Maximum Likelihood Estimates | | | | | | | |
|---|---|---|---|---|---|---|---|
| Variable | DF | Parameter Estimate | Standard Error | Wald Chi-Square | Pr > Chi-Square | Standardized Estimate | Odds Ratio |
| Intercept | 1 | 1.55 | 0.11 | 210.66 | 0.00 | . | . |
| First YES | 1 | 1.02 | .038 | 7.22 | 1.00 | 0.20 | 2.78 |
| Other GE | 1 | 0. 36 | 0.35 | 1.06 | 0.30 | 0.06 | 1.44 |
| Linear Hypothesis: Testing | | | | | | | |
| FirstYES Other GE | 1 | | | 1.65 | 0.20 | | |

Global Null Hypothesis:
-2 Log L Chi-Square for covariates =10.157, 2. d.f., p = .0062

Table B-6
Fall 1996 Re-enrollment
Analysis of Impact of Cluster Program
The Logistic Procedure

| Analysis of Maximum Likelihood Estimates | | | | | | | |
|---|---|---|---|---|---|---|---|
| Variable | DF | Parameter Estimate | Standard Error | Wald Chi-Square | Pr > Chi-Square | Standardized Estimate | Odds Ratio |
| Inter Cpt | 1 | 0.10 | 0.06 | 2.80 | 0.09 | . | . |
| First YES | 1 | 0.17 | 0.15 | 1.28 | 0.26 | 0.03 | 1.19 |
| Other GE | 1 | 0.27 | 0.19 | 2.08 | 0.15 | 0.04 | 1.31 |
| Linear Hypothesis: Testing | | | | | | | |
| First YES Other GE | 1 | | | 0.17 | 0.68 | | |

Global Null Hypothesis:
-2 Log L Chi-Square for covariates = 32.74, 2 d.f., p = .1965