The Effectiveness of Education Learning Assistants Program for Student Retention

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Abstract

In 1995-1997, the New Jersey Institute of Technology (NJIT), via the Educational Opportunity Program (EOP), received funding from the Gateway Education Engineering Coalition for a retention initiative called the Educational Learning Assistants (ELA) Program. The main goal of the ELA program was to increase the retention rate of EOP sophomores; 422 students were served by this program. One of the objectives was to develop a special treatment which included, but was not limited to, the assignment of role model peers to work closely with the EOP residents and commuter sophomores to provide tutoring, peer counseling, and academic support workshops.

This paper analyzes the performance of students in this program to gauge its effectiveness.

The study is a quasi-experimental design: ELA students were included in the experimental group, and sophomores with similar gender/ethnic distribution, SAT and placement test scores were included in the comparison group. The study analyzed such learning outcomes as retention, graduation and passing rates of students in the ELA and comparison groups.

For 1995, 1996 and 1997 sophomore cohorts, the ELA students' passing rates were slightly higher, although the difference was not statistically significant. The sophomore retention rates were the same for experimental and comparison groups after the first year of the program, however in the second and third years the retention rates of the experimental group were higher than the rates of the comparative group and the difference was statistically significant.

1. Introduction

The Educational Learning Assistants Program at the New Jersey Institute of Technology was created to increase the retention rate of sophomore students in NJIT's Educational Opportunity Program, which received funding from the Gateway Engineering Education Coalition. Although most EOP students did successfully complete their freshman year, there was a significant drop in

retention from the sophomore to junior year. The ELA program is a special treatment developed to help these students successfully complete their sophomore studies.

The ELA program used several strategies to improve sophomore retention. Peer role models, typically seniors, were hired to mentor students in the ELA program. The mentors, called educational learning assistants, resided in the residence halls, as did most of the students in the program. They maintained regular contact with the students, and served as trusted liaisons between students and professional staff. With timely feedback from the mentors, the professional staff members were able to implement effective intervention for problems that were academic, financial, and social/emotional. The mentors also developed group study sessions for the students and conducted bi-weekly student meetings. The ELA program is a relatively low-cost strategy for improving student retention and graduation rates. An implementation manual [1] and program report [2] for this project are available for download at the Gateway Engineering Education Coalition's web site [3].

This paper presents the outcomes resulting for students in this program. It examines the 1994, 1995, 1996, and 1997 cohorts, analyzing passing and retention rates for these students. Over 90 percent of the students who participated in the program were engineering majors; the rest were mainly computer science majors. Overall, retention rates for students participating in ELA were higher than for the comparison group, and the difference was statistically significant.

2. The Educational Learning Assistants Program

The Educational Learning Assistants program was developed as a result of a shift in the university's goals from recruitment to retention of students in general and in particular of those from underrepresented groups. A variety of approaches that had been used successfully at other institutions were explored. The first of these was having students work with other students in several roles: as mentors, tutors and big brothers/sisters. In each case, the roles were clearly defined. The second strategy was the proven effectiveness of tutoring and academic support for successful mastery of course material. Students who attended tutoring on a regular basis were much more likely to excel than students who did not attend tutoring. Finally, the program concentrated on finding ways to connect students to the campus community. This included the student support as well as student life services. The more those students felt connected to the college community, the better their academic performance.

Using this information, NJIT developed a program that would utilize these best practices in concert with one another. Through the Educational Opportunity Program, the Educational Learning Assistants (ELAs) provided structured group study sessions in the residence hall for residence students and in the University Learning Center for commuters. ELAs also worked in close collaboration with the academic departments, as well as with the Dean of Student Services office, the Counseling Center, the University Learning Center, the office of Residence Life and the Student Support Services Program to meet the ELA Pilot Program objectives.

The program utilized a case management system that enabled the staff to effectively and efficiently monitor students' academic progress and provide better quality services. The program is described in detail below.

Three forms of clustering students for success were used: 1) academic clustering where students in the same majors are placed in the same sections of courses; 2) structured study groups by subject areas; and, 3) residential clustering in a selected residence hall. In addition, the ELAs resided in the same building as the EOP residential sophomores which allowed them more flexibility in planning activities, monitoring progress, and encouraging the formation of informal EOP peer support groups.

The ELA program developed new and strengthened old partnerships with selected university departments in order to successfully integrate ELA participants into the mainstream of NJIT's academic co-curricular environment. The new and enhanced partnerships enabled the ELAs to better maximize the use of available university resources as they endeavored to help students build their academic confidence and skills required to increase academic performance. ELA participants were required in some cases, and strongly encouraged in others, to participate in the following programs:

- University Learning Center tutoring program (as tutors or recipients, depending on their GPA)
- The Student Support Services Program (SSSP) Winter Intersession (an intensive 2-week skills and confidence building session)
- The professional development workshops and career fair run by NJIT's Career Services Division
- The annual colloquia and lecture series presented by the Albert Dorman Honors College, the Newark College of Engineering, the College of Science and Liberal Arts, the School of Architecture, and the School of Management

Since research consistently supports students' involvement in academic societies and professional organizations, the ELA Program was instrumental in helping ELA participants to establish a balance between their academic and co-curricular activities, especially in the academic societies and professional organizations. This program targeted engineering discipline-specific societies, such as the IEEE, and societies geared toward specific ethnic, racial, or gender groups, such as the Society of Hispanic Professional Engineers.

Another paramount goal of this intervention project was to utilize the ELAs to create an environment for the students that would help promote collaborative learning. The ELAs helped to foster the development of team work by establishing group sessions in the residence hall and in the University Learning Center, and by helping the ELA Coordinator plan and implement workshops and lectures that would foster retention among the EOP sophomores.

This program had a strong student development component. Student services specialists, EOP counselors, and visiting speakers conducted seminars and presentations on topics that included communication and learning skills, career planning; time management; study skills; test preparation; text anxiety; cross-cultural awareness; alcohol and drug use abuse; sexuality and sexual harassment; group dynamics and group building skills; and stress management.

The commitment of the ELAs to their peers is a unique feature of the ELA program at NJIT. Since the ELAs were hired from the ranks of EOP students at NJIT who had experienced many of the same challenges faced by the sophomores and had weathered them successfully, they were in a unique position to empathize and assist their peers.

With institutions facing increasing financial constraints, the ELA Program offered the opportunity for the EOP at NJIT to implement a retention initiative that was practical and cost effective for a population that at-risk of dropping out of college. This program brought EOP residential and commuter students together allowing them to bond and develop the much-needed network and support systems that play such an important role in their retention and graduation from NJIT.

The budget for the program at NJIT, approximately $52,000 over three years, consisted of room and board for the four ELAs hired, work study funds for a student hired as data manager, and supplies, as needed. Since the ELA Coordinator was a member of the EOP staff, there was no additional charge for her time. Classrooms were utilized for cohort meetings once a month and individual counseling sessions were held in the ELA Coordinator's office. ELAs met with students in their dorm rooms or lounges, at the cafeteria, in the library, and in the University Learning Center, as appropriate.

3. Hypothesis and Research Design

The authors' directional hypothesis is that students who participated in ELA program will perform better academically than the students from comparison group. The study design involves comparative analysis of the ELA and matching group of students' academic performance in 1994-2001. The population consists of two groups – ELA students (N=422) and students with matching gender, ethnic and academic characteristics (N=1269). By academic characteristics we mean SAT scores, placement test scores, when available, and college GPA before participation in ELA. This is a quasi-experimental design as random assignment to groups was not feasible. Mitchell and Jolley rightfully argue that perfect matching is never available because subjects cannot be possibly matched on all variables [4]. However the significant size of the comparison groups can provide us with sufficient data to make decisions about the impact of treatment. The average SAT scores for two cohorts are the same, 469 for SAT Math and 395 for SAT Verbal. Both groups have similar placement test scores; however, the comparison group had a slightly higher (0.11) college GPA than the ELA group before the start of the program.

4. Results

The retention rates were calculated for four cohorts of the ELA and comparison students. By "retention rate" we mean the percentage of the students who registered for the succeeding fall semester in the same university. Data show that ELA students have better retention rates than students in the comparison group at every level and in all four years, indicating the success of the ELA program. The difference is statistically significant in most cases. Table 1 compares the number of students and percentages retained for ELA and the comparison group for students who started in the years 1994, 1995, 1995 and 1997.

Table 1. Retention Rates for ELA and Comparison Group (COM) Students

Fall Semester		**Students Retained****					
	Group	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
1994	**ELA (122)**	**111 (91.0%)**	**88 (72.1%)**	**84 (68.9%)**	**76 (62.3%)**	**69 (56.5%)**	**69 (56.8%)**
	COM (340)	281 (82.5%)	241 (70.9%)	214 (62.9%)	203 (59.8%)	177 (52.2%)	164 (48.2%)
1995	**ELA (117)**	**101 (86.3%)**	**88 (75.2%)**	**71 (60.7%)**	**66 (56.4%)**	**66 (56.4%)**	**66 (56.4%)**
	COM (328)	268 (81.7%)	229 (69.8%)	188 (57.3%)	179 (54.5%)	161 (49.1%)	155 (47.3%)
1996	**ELA (89)**	**88 (98.9%)**	**75 (84.3%)**	**68 (76.4%)**	**67 (75.3%)**	**61 (68.6%)**	**N/A**
	COM (312)	288 (92.3)	261 (83.7%)	224 (71.8%)	217 (69.6%)	190 (60.1%)	N/A
1997	**ELA (94)**	**92 (97.9%)**	**77 (81.9%)**	**73 (77.7%)**	**56 (72.2%)**	**N/A**	**N/A**
	COM (289)	273 (94.5)	228 (78.9%)	199 (68.9%)	181 (62.6%)	N/A	N/A

** Numbers of students and percentages for the fourth, fifth and sixth year include students that have successfully completed their undergraduate degree programs.

The six-year graduation rates calculated for the ELA and comparison groups of students were less consistent. For the 1994 cohort, the ELA graduation rate was 1.2% higher than the comparison group; in 1995 ELA was 4.9% lower. In 1996 the ELA group improved dramatically to show a 14% higher graduation rate than the comparison group; see Table 2.

Table 2: Six-year graduation rates for ELA and Comparison Groups

Fall Cohort	**Graduation Rates**	
	ELA	**Comparison Group**
1994	40.2%	39.0%
1995	39.3%	44.2%
1996	56.2%	42.2%

Course passing rates for ELA and the comparison group were similar, although the ELA group had higher passing rates in all years except 1994. In 1994 the comparison group had a 1.5% higher passing rate for all courses. In all subsequent years the ELA students had higher passing rates by at least 1.2%, in 1995, and as much as 2.7% , in 1996 (Table 3).

Table 3: Passing rates for ELA and comparison group for students in their sophomore year.

Passing Rate		
Cohort	**ELA**	**Comparison Group**
1994	79.7%	81.2%
1995	79.9%	78.7%
1996	81.9%	79.2%
1997	79.7%	78.2%

Consistently higher retention rates and generally higher sophomore passing rates for the ELA group indicate success for the ELA program. Students in the ELA program are remaining in school and performing somewhat better than their peers. The graduation rate comparison is inconsistent, but because the combined number of graduated and retained students is always higher for the ELA group, six year graduation data should not cloud the evidence for the program's effectiveness. It does, however, suggest the need for further research into program enrollment, credit load, and the accumulated GPA for students in the ELA program and the comparison group. The ELA program graduation rate might show more consistent advantages with slight changes in program emphasis and design or the inconsistent 1995 result may be comfortably explained.

In aggregate, the data presented above offers strong evidence that the Educational Learning Assistants Program has achieved its goal of improving student retention and graduation rates. ELA students were retained at higher rates than comparison students, and the difference between ELA and comparison groups was statistically significant at $p<.01$ for the 1st, 3rd and 6th years, and at $p < .05$ for the 2nd, 4th and 5th years.

5. Summary

Through the funding received from the Gateway Engineering Education Coalition, the ELA Pilot Program was able to increase the retention rate of EOP sophomores from 74 percent to 84 percent over one academic year. This program provided the opportunity for NJIT to implement a program that produced a valuable retention initiative, data, and strategies that can be easily transferred to other institutions. At the conclusion of the 1996-97 academic year, the ELA Coordinator produced a program manual and report [1,2]. Included in the manual was an executive summary of the proposal; a copy of the entire proposal; the project evaluation; data which included participants' demographic profile; a listing of the workshops, lectures and meetings held during the year; pertinent job descriptions, and a training section for ELAs. The manual and report are available for download at [3] for use by other universities that wish to implement this program, with or without modifications, at their universities.

The program evaluation presented above demonstrates that ELA had a powerful and consistent

impact on retention rates. It also had a marked impact on sophomore year passing rates. Evidence for the impact on six-year graduation is more ambiguous and deserves further research. The statistical case shows that ELA, at relatively low cost, kept at-risk students in school. Still there is room for progress. With some enhancements, the ELA program could become even more successful.

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