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This longitudinal study examined the impact of participation in the federally funded Talent Search program at The University of Tennessee, Knoxville. The Talent Search program provides career exploration and counseling services to low-income students with the potential to be first-generation college graduates. Postsecondary education enrollment rates of 758 Talent Search participants were compared with enrollment rates of a control group of 450 individuals who were eligible for Talent Search services but did not participate. Chi-square analysis revealed that Talent Search participants were significantly more likely to enroll in postsecondary education than were members of the control group ($p < .001$). These results have implications for career development services provided to low-income, potential first-generation college graduates.

KEY WORDS: low-income; first-generation college students; Talent Search; postsecondary education enrollment rates.

There must be developed in this country the widespread realization that money expended for education is the wisest and soundest of investments in the national interest. The democratic community cannot tolerate a society based upon education for the well-to-do alone. If college opportunities are restricted to those in the higher income brackets, the way is open to the creation and perpetuation of a class

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society which has no place in the American way of life. (U.S. President's Commission on Higher Education, 1947, p. 23)

Although these words were written over 50 years ago, they still ring true today. Over the past 25 years, the economic value of a college education has increased steadily (U.S. Census Bureau, 2002). The more education an individual receives, the more income he or she can expect to earn across a lifetime. Unfortunately, just as the value of a college education has risen, so has its cost. Using data from the U.S. Department of Education and the U.S. Bureau of the Census, Stiglitz, Tyson, Orszag, and Orszag (2001) calculated a 91% inflation-adjusted increase in college costs between 1978 and 1998. Coinciding with dwindling state support, these costs have been passed on to students and their families (Breneman & Finney, 1997). Consequently, low-income college students have suffered diminished opportunities due to reduced financial access (Davis, 2003), and the cost of a college education has become prohibitive to many low-income families. If the dream of attending college seems unattainable to those who fall outside the higher income brackets, then their access to the most cogent pathway available for social and economic mobility is effectively blocked.

Recognizing the inherent benefits to society resultant from helping disadvantaged students overcome barriers to postsecondary education, the U.S. Congress has passed numerous legislative measures promoting the removal of such barriers. Beginning in the 1960s with President Johnson's War on Poverty, the U.S. Congress passed the Economic Opportunity Act of 1964 and the Higher Education Act of 1965, which served to strengthen college resources and to provide financial assistance for students. In addition, these acts authorized the establishment of a series of educational opportunity programs designed to provide assistance to disadvantaged students, including those from low-income backgrounds. Emerging from this and subsequent legislation, these educational opportunity programs—known as the TRIO programs—have helped approximately 2 million disadvantaged students graduate from college since 1965. During that time, TRIO programs have expanded in number from three to seven programs serving low-income students who have potential to be first-generation college graduates. Moreover, the support base for TRIO programs has grown into a broad coalition working for the interests of all individuals who have not had opportunities for postsecondary education and the subsequent career paths afforded by

postsecondary education (Council for Opportunity in Education, n.d.).

Despite past success and broad support, however, the future of TRIO programs is not entirely secure. President Bush proposed that the 2003 budget for all TRIO programs remain unchanged from the 2002 budget. Although this proposal involved no funding cuts, it also did not provide for any increases, including any compensatory measures for inflation. In light of these actions and the administration's pointed reference (Mathematica Policy Research, 1999) to the 1999 Mathematica evaluation of Upward Bound (see also Moore, 1996; Myers & Schirm, 1996) that reported virtually no significant effects among program participants, some have viewed TRIO programs—and Upward Bound in particular—as coming into the cross hairs for possible funding cuts in the near future (Morgan, 2002). In response to this increased scrutiny, TRIO staff members must actively document and substantiate the effectiveness of their programs.

As one of the original three programs under the TRIO umbrella, Talent Search (TS) is one such program that might come under pressure to prove its worth. Funding for TS programs in 2002 totaled \$143,505,809, which breaks down to \$368 per participant (389,454 participants) in 475 programs across the country (U.S. Department of Education, 2003). Given the recent emphasis on measurable outcomes (Morgan, 2002), program administrators should focus on presenting empirical evidence to prove that their program is deserving of such expenditures. Because the primary goal of TS—as well as of other TRIO programs—is to help disadvantaged students overcome barriers to higher education and to achieve career aspirations, a proven track record of promoting postsecondary enrollment provides an ideal measurable outcome.

Review of Literature

Talent Search has targeted students from low-income homes where neither parent graduated from college (Council for Opportunity in Education, n.d.). Wolanin (1996) noted that the emphasis on first-generation to college status has moved the TRIO programs in an increasingly inclusive direction, thereby building a broad coalition of support from all involved with anyone who has been deterred from postsecondary education. Because of the positive correlation

between education and income (U.S. Census Bureau, 2002), first-generation college students often come from low-income homes (Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996). However, the two categories (i.e., first-generation to college and low-income) are not necessarily inclusive and often have been studied separately.

First-Generation College Students

Each year thousands of incoming freshmen descend on college campuses across the country. College orientation can be a time of tremendous excitement and stimulation, but it is also a time of adaptation and transformation, which can be both stressful and challenging. For first-generation college students, the acclimatization process can be especially difficult. Without experience dealing with the intricacies of the college registration process, first-generation college students and their families can find it complicated and formidable. For example, Rodriguez' (2001) accounts of the experiences of first-generation college graduates contain substantial details of the social, academic, and financial difficulties faced by first-generation college students as they enter higher education.

In contrast, parents who have gone through the process themselves generally have an idea of what to expect upon entering higher education and can pass that knowledge along to their children. This is an extension of Bourdieu's (1977) concept of *cultural capital*, which pertains to symbolic wealth that upper- and middle-class parents transfer to their children to maintain class status. Examples of cultural capital include information about schools and the educational credentials required for high-paying, high-status occupations (McDonough, 1997). Access to this information can reduce the stress of adapting to college life.

In addition to lacking cultural capital, first-generation college students often have to deal with numerous other deficits upon entering postsecondary education. In comparison with college students whose parents attended college, first-generation college students (a) have weaker cognitive skills, (b) have lower degree aspirations, (c) report receiving less familial support to attend college, and (d) have less basic knowledge about college (Terenzini et al., 1996; York-Anderson & Bowman, 1991). Furthermore, they often are ill-prepared academically. Compared to traditional college students, they have lower grade point averages and SAT scores (Riehl, 1994) and have been less likely to participate in honors programs (Terenzini et al.).

Psychological constraints also can put first-generation college students at a disadvantage upon enrollment in postsecondary education. For example, Hellman (1996) found that first-generation college students had a lower sense of self-efficacy than did traditional college students.

Low-Income Students

Similar to first-generation college students, children from low-income families have been at a disadvantage relative to enrollment and success in higher education. In general, they have been less likely than students from middle- and high-income families to graduate from high school and attend college (Mayer, 1997; Peters & Mullis, 1997). Although public policy has made strides toward boosting entry rates into higher education, participation gaps remain between 18- to 24-year-olds from low-income families and 18- to 24-year-olds from middle- and high-income families (Gladieux & Swail, 2000). Indeed, St. John (2002) reported that participation gaps between low-income and high-income students have widened since 1980.

Research has consistently shown that the degree of concern about college costs exhibited by students when making their college enrollment decisions is inversely related to their income level (Heller, 1997; Paulsen, 1998; St. John & Starkey, 1995). Low-income parents frequently have displayed pessimistic attitudes toward their children's chances of successfully enrolling in and completing postsecondary education (Duncan, Brooks-Gunn, Yeung, & Smith, 1998). However, a positive, hopeful attitude toward higher education exhibited by a parent or other significant person in a child's life can mitigate the effects of an economically disadvantaged background (Crosnoe, Mistry, & Elder, 2002; Rodriguez, 2001). Thus, although economically disadvantaged students face many obstacles, those obstacles are far from insurmountable in the face of broad support and resources.

The TS Program at The University of Tennessee, Knoxville

A federally funded TS program has been housed at The University of Tennessee, Knoxville (UTK) since 1980 (Brewer, 1982, 1987, 2002). Although the program primarily serves students in grades 7 through 12, it also helps high school drop outs by encouraging them to complete their high school education and enter postsecondary education (Brewer, 2002). It provides students with academic and career

planning and helps them to make appropriate decisions regarding postsecondary education. Services and activities provided by TS include career exploration and aptitude assessment, test-taking and study skills development, counseling, academic advising, financial aid workshops, cultural enrichment activities, and job shadowing (Brewer, 1982, 1987, 2002). In addition, participants receive numerous written materials, including a newsletter highlighting such areas of interest as career exploration (Choosing a Career, 1989) and workbooks designed to help participants develop the skills necessary to make effective decisions about their future (Durgin, 2000). Through these activities, services, and materials, TS staff members hope to impart a sense of cultural capital that will empower participants to enter and persist in higher education and beyond to a fulfilling career.

Purpose of Study

The purpose of this study was to report findings regarding characteristics and postsecondary enrollment rates of TS participants in the UTK program between the years 1980 and 1989. This article provides a comparison of postsecondary enrollment rates of TS participants and rates for a control group of individuals who met all of the eligibility requirements for the program but did not participate. Reports providing a national profile of the TS program have offered valuable information regarding the performance levels of participants (U.S. Department of Education, 2002a, b). A focus on the outcomes of a single program over an extended period of time can offer evidence of the program's impact on the lives of its participants. Furthermore, comparing postsecondary enrollment rates of program participants with enrollment rates of a control group of similar individuals who did not participate in TS can provide further insight into the significance of the program's impact. To guide this descriptive study, we developed two research questions:

1. What were the characteristics of TS participants at UTK between 1980 and 1989?
2. How did participation in TS affect students' postsecondary education enrollment rates?

Method

We employed a causal-comparative design with a control group. Causal-comparative research, also referred to as *ex post facto* research, attempts to discover the main factor leading to differences between groups on a specified variable (Gay & Airasian, 2000). In this case, the groups were TS participants and a control group of students who were eligible for TS services but did not participate, and the specified variable was enrollment in postsecondary education.

Population and Sample

The population for this study consisted of the more than 10,000 students who participated in TS at UTK between 1980 and 1989. Using systematic sampling procedures, a sample of 1,000 students—100 students from each year between 1980 and 1989—was drawn. This number represented roughly 10% of the population. These students had received such TS interventions as academic and career counseling, financial aid workshops, and cultural enrichment activities.

The population for the control group in this study comprised students who completed initial application forms and were determined eligible for TS (i.e., they were low-income, potential first-generation college graduates) but who chose not to participate in the program. From this population, a systematic sample of 1,000 students—100 students from each year between 1980 and 1989—was drawn. Because these students chose not to participate in the program, they did not receive any services. Examples of reasons why students chose not to participate in TS included lack of time and interference with other activities.

Data Collection

To collect data about both TS participants and control group members, we mailed follow-up cards to every member of each sample. To facilitate convenient return of the follow-up cards, they were stamped and addressed for return. As an additional follow-up measure, telephone calls were made to sample members who had not returned cards or for whom additional information was needed. The follow-up cards were designed to gather information relative to students' (a) gender, (b) racial/ethnic background, (c) maternal educational level, (d) paternal educational level, (e) enrollment in postsecondary

education, and (f) receipt of financial aid. No further attempts were made to contact non-respondents. We reviewed TS participants' files to determine the number of interventions received by each one. Interventions included any of the services or activities directed by TS staff, such as individual or group counseling, career exploration and advising, study and test-taking skills development, or job shadowing opportunities (Brewer, 1982, 1987, 2002). Data collection occurred during the fall of 1990.

Data Analysis

We calculated frequencies for each variable for both TS participants and the control group. We then compared the frequencies calculated for TS participants with the frequencies calculated for the control group using the independent-samples χ^2 test to determine if differences between frequencies were statistically significant.

Findings

From the systematic sample of 1,000 TS participants between 1980 and 1989, 758 participants returned follow-up cards, a response rate of nearly 76%. For the control group, 450 of the 1,000 students who were sent follow-up cards returned them, a response rate of 45%. We gleaned information about the demographic characteristics of TS participants and the control group from the follow-up cards. Table 1 displays the demographic characteristics of both groups.

College Enrollment Rates

As noted in Table 1, 93.8% of the TS participants had enrolled in postsecondary education, in comparison with 42.2% of control group members who had enrolled in postsecondary education. Results from the χ^2 test indicated that the difference between these two frequencies was significant ($\chi^2 = 401.73$, $p < .001$). Thus, TS participants were more likely to enroll in postsecondary education than were their control group counterparts.

To add further insight into differences in postsecondary education enrollment patterns between TS participants and control group members, we collected data about the type of institutions in which

Table 1
Demographic Characteristics of TS Participants (N = 758)
and Control Group (N = 450)

<i>Demographic Characteristic</i>	<i>TS Participants</i>		<i>Control Group</i>	
	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>
Gender				
Female	416	54.9	200	44.4
Male	341	45.0	248	55.1
Racial/Ethnic Background				
African American	151	19.9	55	12.2
White American	587	77.4	388	86.2
Other	3	0.4	3	0.7
Maternal Educational Level				
9th Grade or Below	25	3.3	42	9.3
10th-11th Grade	37	4.9	58	12.9
12th Grade	391	51.6	260	57.8
Some College	208	27.4	49	10.9
Paternal Educational Level				
9th Grade or Below	26	3.4	36	8.0
10th-11th Grade	34	4.5	56	12.4
12th Grade	383	50.5	249	55.3
Some College	211	27.8	51	11.3
Enrolled in Postsecondary Education				
Yes	711	93.8	190	42.2
No	45	5.9	260	57.8
Receiving Financial Aid				
Yes	399	52.6	*	*
No	226	29.8	*	*

*Data were not available for these items.

Note: Cell percentages do not total 100% due to missing data.

students enrolled. Table 2 displays enrollment rates for different types of postsecondary institutions for TS participants and control group members.

As indicated in Table 2, 76.4% of TS participants enrolled in 4-year colleges, compared to 14.2% of control group members who

Table 2
Postsecondary Education Enrollment Status by Type
of Institution

<i>Enrollment Status</i>	<i>TS Participants</i>		<i>Control Group</i>	
	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>
Not Enrolled	41	5.4	260	57.8
Community College	83	10.9	58	12.9
Technical School	24	3.2	7	1.6
4-Year College	579	76.4	64	14.2
Other	21	2.8	54	12.0

Note: Cell percentages do not total 100% due to missing data.

enrolled in 4-year colleges. Results of the χ^2 test revealed significant difference in these frequencies ($\chi^2 = 558.62, p < .001$), thereby indicating that TS participants were significantly more likely to enroll in 4-year colleges than were control group members.

To further gauge the impact that participation in TS had on students' postsecondary education enrollment rates, we calculated postsecondary education enrollment rates by the number of interventions (i.e., service or activity provided by TS staff) that program participants received. Number of interventions was collapsed into two categories: fewer than six interventions and six or more interventions. A total of 189 TS participants received fewer than six interventions. Of those 189 participants, 174 (92.1%) were enrolled in postsecondary education. Participants who received 6 or more interventions totaled 554, of whom 523 (94.4%) were enrolled in postsecondary education.

Discussion

First-generation college students from economically disadvantaged backgrounds face numerous obstacles to their enrollment in higher education. However, results from this study strongly indicate that those obstacles can be overcome. Over 93% of TS participants enrolled in postsecondary education. This compares to an enrollment rate of 42.2% for members of a control group of students who were eligible for TS services but did not participate. Although the results from this study are not generalizable to all other TS programs, they

clearly assert the potential of educational opportunity programs to have a significant impact on the lives of low-income, first-generation college students.

In general, first-generation college students often have been found at the community college level (Dougherty, 1994; Inman & Mayes, 1999). Therefore, the finding in this study that TS participants are more likely to enroll in a 4-year college (76.4%) than in a technical school (3.2%) or a community college (10.9%) is somewhat surprising. Moreover, participants enrolling in technical or community colleges initially may transfer to 4-year colleges later, thereby possibly increasing the 4-year college enrollment rate even further. These results could suggest that interventions by TS staff function to help participants access the cultural capital (i.e., information about school) that is readily available to students whose parents attended college but is sometimes inaccessible to students whose parents did not attend college. Indeed, TS interventions are structured to provide participants with the knowledge and means to overcome obstacles to higher education. Armed with such knowledge and means, TS participants may acquire the confidence to aspire to levels of education and to career paths that they had previously thought not possible.

The percentage of TS participants who received fewer than six interventions who were enrolled in postsecondary education was very similar to the percentage of TS participants who received six or more interventions who were enrolled in postsecondary education, 92.1% and 94.4%, respectively. Talent Search staff provide a variety of interventions to program participants, including aptitude assessment, test-taking and study skills development, academic and career counseling, financial aid workshops, cultural enrichment activities, and job shadowing (Brewer, 1982, 1987, 2002). Since the number of interventions that participants received did not seem to have a significant impact on postsecondary education enrollment rates, it is recommended that future research explore whether type of intervention has an impact.

It is important to note that the findings from this study must be viewed in light of the study's limitations. Some of the limitations in this study revolved around threats to internal validity, namely the effects of history and maturation. Since this study took place over 10 years, there was ample opportunity for events that were not part of the intervention and that might have affected the study's findings to occur. Likewise, because data were collected in fall of 1990, there were several years in which participants from the early 1980s could

have had experiences and undergone changes that affected their status on the dependent variable. For example, participants from the early 1980s initially might have entered the workforce instead of postsecondary education, but after seeing firsthand the advancement and salary limitations that most individuals without a postsecondary education experience, they might have decided to enter a postsecondary education program. Thus, their decision to enroll in a postsecondary institution would have been influenced by their experience in the workforce as well as participation in TS.

Highlighting participants' enrollment rates in postsecondary education is an important first step toward demonstrating the effectiveness of programs aimed at removing barriers to higher education for first-generation college students from low-income backgrounds. However, in the current climate of quantitative accountability, TRIO program administrators must push themselves to document all stages of success. College enrollment rates are not enough; programs also must verify progress. How many college credits have participants earned? What are the graduation rates for participants? What are their entrance rates into graduate education programs? What types and levels of employment have they achieved? In addition to serving as evidence of program efficacy, the answers to these questions could provide insight into the career development of low-income, first-generation college students.

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