TRIO Focuses On The Digital Divide

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The report, *Closing the Divide: Technology Use in TRIO Talent Search Projects*, will be available through the National TRIO Clearinghouse by early 2002.

According to Education Week (2001a), what was called the digital divide by the Department of Commerce can better be described metaphorically. The divide resembles "the tributaries of a river" if describing the way computers are used in education, and it resembles "the bulging balloon" if describing the way computers are squeezed for access in one place due to wealth. The hazard of focusing on the digital divide is that it tends to overshadow the divide of poverty. According to William Rukeyser (2001), "…kids living in poverty tend to have less of everything that money can buy" (Education Week, 2001b).

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Closing the Divide: Technology Use in TRIO Talent Search Projects is the second report from the National TRIO Clearinghouse on the topic of TRIO programs and technology. Having recognized the various technology divides, the National TRIO Clearinghouse, a branch of the Center for the Study of Opportunity in Higher Education, instituted a national technology survey of all the TRIO programs. After an in-depth data collection and research process spanning nearly one year, *Closing the Divide: Technology Use in TRIO Upward Bound Projects* was published in March 2001. This is the second report from the National TRIO Clearinghouse on the topic of TRIO programs and technology. It assess the use of computer-based technology* by Talent Search (TS) students and the role TS projects play in providing access to that technology.

The TRIO Talent Search Program was initially established within the Higher Education Act of 1965 with the purpose of identifying "qualified individuals from disadvantaged backgrounds, to prepare them for a program of post-secondary education"(USDE, 2001), and to encourage secondary and post-secondary school dropouts to re-enter an educational program while also publicizing the availability of financial aid. More than 80 percent of TS participants are from families that are both low-income and first-generation as detailed in the TRIO legislation. Seventy-one percent of the 367 currently funded Talent Search programs participated in the study with 257 completed questionnaires received. The focus of this article is to draw attention to the importance of understanding computer technology and its link to TRIO programs.

Disparity in Technology Use

As a first step in examining the extent of access to technology of TRIO Talent Search students, the study sought information regarding students' access through their schools, and homes. Using data from the U. S. Department of Education Schools and Staffing Survey we find that 90 percent of all American students are attending schools with computers and Internet access (USDE, 1999). However, the current problem is not simply access to computers, but the quality of student involvement while utilizing computers.

The power of computer technology is apparent in the discussions of globalization. Globalization has many references from how corporate and political leadership are restructuring global politics and economics to citizen groups against globalization (Institute on Globalization and the Human Condition, 2000; Corporate Watch, 2000). Friedman (2000) best describes globalization as "the inexorable integration of markets, nation-states and technologies to a degree never witnessed before...farther, faster, deeper, cheaper than ever before" (p. 9). The advent of not only the computer but the Internet makes access to information, organization, and analysis easier and faster to conduct. People with the skills, the knowledge, and the reference base can accomplish more in less than half the time.

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For low-income students, many questions remain relative to the use, support and incorporation of computer technology. Questions needed to be asked about student use and capability to handle large amounts of data like the Internet, the frequency of students using the Internet, and for what purposes do they use it. Responses to these inquiries will determine if students are working on outdated machines. Related to support, questions should ask if schools, or in our case TRIO TS Programs, have technical support to keep the machines operative, if teachers and counselors are trained in how to use technology to enhance student learning, and if this knowledge is incorporated into student instruction and support. If all students do not benefit equally from the incorporation of technology into education, then "digital discrimination" is no longer a question but a statement of fact (Education Week, 2001).

In another report, *Falling Through the Net: Defining the Digital Divide*, focus is given to computer "haves" and "have nots" as well as the question of Internet access. The U.S. Department of Commerce issued its report in 1999 pointing out serious disparities in access and use of computer technology for Americans based on family income. According to the report, the number of Americans accessing the Internet had grown rapidly in the past year. Yet, in the midst of that general expansion in technology and computer access, the "digital divide" between information "haves" and "have nots" continues to widen. However, instead of embarking on a general discussion of "Falling Through the Net," the major areas of concern directly mirror the digital divide reported by the Department of Commerce and supports the bulging balloon of technology access for the wealthy reported in Education Week. This concern, lack of access relative to TRIO participants, is sharply reflected in income levels and household computer use.

Without access to technology in TRIO programs, many opportunities are missed. For example, the disparity in home Internet access between those at the highest and lowest income levels widened 29 percent from 1997 to 1998. While a significant majority of Americans (58.9%) that frequent the Internet from any location make over $75,000, far fewer persons (16.0%) at the lower end of the pay scale ($5,000-$10,000) use the Internet. Characteristics of Internet participation by household income reveal that the percentage of U.S. households using the internet increase relative to income ranging from 9.8 percent in households with $15,000- $19,999 up to 43.9 percent in households with $50,000-$74,999 income (U.S. Department of Commerce, 1999). Income level was clearly a strong determinant of a person's or household's Internet access.

TRIO Talent Search and Technology

TRIO Talent Search students and professionals are faced with a lack of computer technology support and this has serious implications for student's futures. Without access to technology funding there will be no computers. Without computers there will be no access to the Internet nor computing knowledge. Without access to the Internet nor knowledge there will be no information. Without information there will be no economic or expedient way to apply to colleges, get financial aid, communicate with faculty, communicate with other students, complete a degree, apply for and attain a good job, nor access any opportunities that higher education brings, such as a middle or upper class lifestyle, all of which are currently achieved through use, access and knowledge of computer technology. Without technology or Internet access, there is no opportunity, only opportunities missed.

Given our current technology infused work environment, it becomes easy to see the need and relevance of technology in the development of TRIO Talent Search students as future professionals. Similarly, TRIO Talent Search student development is closely related to the technological proficiency of TRIO Talent Search professionals. In focusing on how to close the divide, the National TRIO Clearinghouse asked a number of questions in 1999-2000 regarding TRIO students and professionals similar to many issues raised in 2001 by Education Week, for example:

- Do the students in your program have access to the Internet through your project?
- Do the students in your program have access to e-mail through your project?
- Are computers and the use of technology integrated into your project's course content for students? (Council for Opportunity in Education, 1999).

In addition, the National TRIO Clearinghouse Technology Survey included relevant questions focusing on TRIO professionals instructional capacity to prepare students to use technology. Key questions asked of Talent Search Program professional included:

- Does your project offer students specific courses on computing and using emerging technologies?

- Do students in your project use your project's computers to aid them in their search for information about prospective colleges?
- What type of technology training is most needed by your staff? (Council for Opportunity in Education, 1999).

Questions were aimed at understanding not only student access but what technological knowledge TRIO professional were capable of providing to their students.

Theoretical support for asking these questions is offered by Thornburg (2000) who cites several goals required to address the development of teaching staff. The first goal is to move staff development to the number-one position in technology development, which includes efficient use of technology by staff and a new definition of what students need. Thornburg's (2000) second goal is to ensure that every educator and learner acquire three new functional skills, 1) to know how to find information, 2) to know how to determine if the information found is relevant, and 3) to know how to determine if the relevant information is accurate. Often student searches find thousands of references, but without knowledge of source credibility and relevance students are still excluded from the information of this new society. Finally, the third goal is to ensure that every learner has universal access to "telematic" learning tools (Thornburg, 2000). Computer knowledge enables access, but the telephone linkage to the Internet enables opportunity. Teaching and counseling staff are the links in connecting students educational opportunity to technology.

Considering the circumstances of technology access in TRIO Talent Search projects, especially in the context of the variety of reports, the timeliness of the TS technology survey can best be seen within the findings of the survey. Unfortunately, TS Programs are consistent relative to low-income populations distance away from technology use and proficiency. What follows is a brief description of the findings from the National TRIO Clearinghouse report.

Access and Reality: Technology in Upward Bound Projects

Access of Talent Search students to technology is limited. Talent Search Project Directors report that just under 7 in 10 Talent Search students (66%) have access to computers and the Internet in their schools while only nine percent of classrooms in schools attended by Talent Search students have computers and Internet access. Nationally, 90 percent of secondary students have access to computers and the Internet in their schools, while 51 percent of classrooms have such access. Talent Search Directors also report that only three percent of Talent Search participants have access to computers in their home.

Student Access to Computers

Fifty-five percent of TRIO Talent Search projects do not have any desktop personal computers primarily dedicated for student academic use (see Table 1). Though smaller TS projects (those serving 1,000 students or less) tend to have more student use computers than the larger projects (those serving over 1,000 students), the numbers are still staggering. Thirty percent of projects serving less than 1,000 students have only 1-3 computers for the 1,000 students to use. According to the data, 34 percent of Talent Search projects have little more than one computer for every 50 students and 58 percent of TS projects serve between 700-1,299 students. This means that the majority of TS students do not have frequent or regular access to a computer or the Internet.

Table 1: Percentage of UB Programs with Desktop PC's Exclusively for Student Use

Number of Desktop PC's	Total TS Program	Less than 1000 Students	1000 or More Students
None	55%	53%	58%
1 to 3	25	30	13
4 to 7	10	9	13
8 to 10	3	2	5
11 to 20	5	4	8
More than 20	1	1	3
Unsure	1	1	—
Total	**100**	**100**	**100**

Source: National TRIO Clearinghouse Talent Search Technology Survey, 2000

Student Access to the Internet and Network Support

The majority of TRIO Talent Search projects (58%) do not provide access to the Internet for their students. Eighty-one percent of Talent Search projects do not provide access to e-mail for their students (See Table 2). Additionally, more than one-third (30-45%) of these same TS students do not get access to the Internet or email at their school.

Providing Laptops to Students

Overall, only 1 in 5 (20%) of all the Talent Search projects nationwide provide access to laptops for their students (See Table 3). Most Talent Search projects (81%) do not have laptop computers that students can borrow and use on their own. Even among the 20 percent of projects that provide students access to laptops, 60 percent of projects have fewer than three laptop computers for student use.

Technology Relevance and Recommendations for TRIO Student

Talent Search technology needs are vast. Most Talent Search projects have a clear idea about what they need to do to better serve students. The primary needs are to, provide more training for staff (74%) for the majority of projects, purchase laptop computers for student use (69%), purchase additional instructional software (65%) and purchase additional PCs for

Table 2: Technology Offered In TS Programs	
Technology Offering	**TS Programs**
Internet access	41%
No Internet access	58
E-mail access	18%
No E-mail access	81
Unsure	1
Laptop access	18%
No laptop access	81
Unsure	1

Source: National TRIO Clearinghouse Talent Search Technology Survey, 2000

Table 3: TS Projects with Laptops Exclusively for Student Use and Access by Urbanicity				
Laptops	**Total**	**Urban**	**Suburban**	**Rural**
None	80%	83%	75%	80%
1 - 3	14	9	17	14
4 - 7	3	4	8	3
8 or More	3	3	-	3
Unsure	-	1	-	-
Totals	**100**	**100**	**100**	**100**

Source: National TRIO Clearinghouse Talent Search Technology Survey, 2000

student use (63%) (See Table 4). Additionally, many projects are in need of the most basic types of computer training. For example, approximately one-third of the Talent Search projects need to provide advising and counseling staff with basic computer literacy and word processing training.

Overall, information from the TRIO Talent Search Technology Survey suggests that Talent Search students, projects and staff continue to have needs within the areas of resource, access, and staff development. Projects identified how they could better serve students' technology needs with resources of additional student laptop and desktop computers and software, staff training, and a staff person dedicated to technology. The survey also found that projects need additional training and capacity building in the utilization of technology.

Recommendations

A number of recommendations arise from this report. The first is to increase the technology use within TRIO Talent Search projects through a multifaceted, collaborative effort. This effort requires that TRIO projects to collaborate with National TRIO Clearinghouse and the Council, the U.S. Department of Education, American corporations and the U.S. Congress to meet the needs of Talent Search students and programs. Certainly all of the aforementioned entities have varying levels of responsibility. The Talent Search technology report considers each entity and provides a set of specific recommendations for each, from re-examining service delivery to the development of partnerships and legislation to eliminate technological disparities. An additional recommendation for the Department of Education is to provide additional resources to address the disparities in Talent Search Programs ability to enhance the quality of services needed to advantage this extremely disadvantaged population.

Table 4: Percentage of TS Programs Funding Focus for Priority Upgrades by Number of Students Served and Urbanicity						
Focus of Priority Upgrades	**Total**	**Less than 1000 Students Served**	**1000 or More Students Served**	**Urban**	**Suburban**	**Rural**
Provide training to staff in use of technology	74%	72%	79%	73%	75%	74%
Purchase more laptop computers for student use	69	68	72	65	54	77
Purchase more instructional software	65	63	72	66	50	68
Purchase more PCs for student use	63	60	72	71	50	58
Hire a staff member dedicated to technology	56	56	57	60	46	63
Provide technical assistance to staff in using technology	49	45	62	51	42	50
Upgrade technology capacity of PCs	50	45	59	53	38	50
Replace administrative PCs w/faster models w/more memory	43	39	55	52	29	39
Purchase more PCs for administrative use	27	24	36	37	25	22
Replace student use PC's with faster models with more memory	26	23	34	33	26	20
Upgrade my Internet connection	19	15	29	25	4	16

Source: National TRIO Clearinghouse Talent Search Technology Survey, 2000

It is imperative that Talent Search accomplishes considerable progress toward improving its students' technology use and access. It is imperative that Talent Search projects prepare students to be successful.

Reference

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*Note: In this report/survey, we have generally defined technology as computer-based. However, in the area of instruction, we expanded the definition to include multi-media and distance communication technologies such as video conferencing.

The National TRIO Clearinghouse collects and disseminates information; applied program materials, resources, and research related to TRIO Programs and TRIO students. It is housed in the Center for the Study of Opportunity in Higher Education, Council for Opportunity in Education. The National TRIO Clearinghouse is an adjunct Educational Resources Information Center (ERIC) Clearinghouse on Educational Opportunity affiliated with the ERIC Higher Education Clearinghouse. The National TRIO Clearinghouse is funded by a grant from the United States Department of Education Federal TRIO Programs.

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