Technology Use of College Bound Seniors from a Southwest Border Community: Preparation, Selection, and Application to College

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Abstract

Yearly, college bound seniors across the country spend a significant amount of their senior year making plans for a post high school education. An integral part of this process for college bound seniors is the preparation, selection, and application to college. College bound seniors typically begin searching soon after meeting with their high school counselor. However, for a growing number of high school seniors, the college route begins in front of their computer, as they utilize computer technology to inquire about higher education. This research describes and examines how college bound seniors in a border community use computer technology to pursue higher education. Results indicate that high school students in border communities negotiate cultural, economic, and digital boundaries to pursue higher education.

One Student’s Dream – Theresa

Theresa’s parents graduated high school from a rural area in the border regions outside of El Paso, Texas. Although neither of them attended college Theresa’s mother stayed at home with her children while her father continued, from the age of 17, in a working class job as a butcher. They both anticipated their children to be engaged in the schooling process. When Theresa was eight years old the family purchased their first family computer. In school, her earliest experience with computers was much sooner – during the first grade. She indicates that she remembers using “learning programs like math programs, vocabulary programs; it was pretty much games, but geared toward learning.” In middle school, her primary use of computers was for research on the Internet which continued into high school for school projects, reports, presentations, and word processing. As one of 12 college bound seniors, case study participant described below, Theresa describes clearly how border students have come to depend on the internet to further their educational goals. Specifically, she states, “I really utilized computers for the Internet. I used the Internet to obtain information on prospective universities and scholarships. I also depended a lot on e-mail to communicate with schools.”

Introduction

Research on Border Education issues is a powerful method to develop understanding of the variety of school settings that are in a continuous state of change. Border Education research allows us to consider concepts of liminality (Turner, 1967) as students struggle to find balance between their personal world and the dominant cultural environment that interrupts their educational experience. However, it should be recognized that although there is much research yet to be completed in the
area of liminal spaces of academic engagement, we have focused this research on how students who may have been marginalized academically with few post-secondary education options available to them, at one point, yet being active members of a digital milieu provided them with opportunities that were unavailable only a decade earlier. Keeping a perspective of a “vision of the possible” at the forefront of this research we have focused on one student’s movement toward higher education and placed it within the context of her peer and cultural influences.

**Context of the Study**

Allerton (2001) suggests that current student populations are more exposed and technologically advanced than prior student populations – a generational and cultural aspect of funds of knowledge (Vélez-Ibáñez and Greenberg, 1992) that includes students attending schools in border regions. Additionally, Daniel (2002) indicates that rapid reform measures are being taken to implement technology into the curriculum. Likewise, while there is literature available on mandated computer technology instruction (Trotter, 2003; Daniel, 2002), there is limited evidence on the factors which college bound seniors attribute in the process of using computer technology to prepare, select, and apply to a college.

For more than a few years, the use of technology in education has been a commonly disputed issue (Rowe, 1998; Tyner, 1998). To some, computers serve as a promising educational contribution, so much so, that now more U.S. households than ever before have a computer at home. Computer technology continues to gain momentum as federal educational laws are moving towards ensuring that all students entering high school become technologically proficient by 2005 (Trotter, 2003). In the Current Population Survey (Newburger, 1997) on computer use in the United States, 93.3 percent of children repeatedly utilized computers for educational purposes, which resulted in a change from prior years where games lead the use of computers at home. Yet, according to this survey, Newburger (1997) indicates that only 39.0 percent of students in between the ages of 7 and 17 used computers in educational settings.

It is relatively simple to monitor students on whether they are using technology, but we believe that how technology is being used or what they are learning from using technology is not as likely to be a focal point of inquiry. The elemental origin of what a learner understands about technology, in turn, affects forthcoming social and economic participation. We believe technology aids in the development of greater problem solving and higher order thinking skills and therefore positively influences learners collectively and efficiently. Thus, the culture of using computers to notably improve problem solving and higher order thinking skills must be developed throughout a learner’s educational grounding.

Given the limited literature on the use of computer technology by college bound graduating seniors, doubly so for seniors in border communities, there is a need to better understand the factors that contribute to the use of computer technology by graduating seniors’ success in preparing, selecting, and applying to a college from their point of view. Specifically, it is through the analysis of the use of computer technology that gaining better understanding of its role for college bound seniors in a southwest border community.

**Purpose of the Study**

The purpose of this study is to describe and examine how college bound seniors in a border community use computer technology to pursue higher education. Specifically, this study addresses how the use of computer technology to prepare, select, and apply to college may have fundamental
grounding in accessibility, learning opportunities, and intellectual growth for typically marginalized students.

**A Dream Coming into Focus**

For Theresa, the preparation, selection, and application to college began in her junior year of high school. It was at the beginning of her junior year that Theresa began scouting colleges, attending college-recruiting presentations, visiting in-state colleges, and seeking out scholarship and financial aid information. Using the Internet during her junior year, Theresa began scouting for colleges. The focus of her search concentrated on colleges such as the University of Texas at Austin, Baylor, and Rice, but Theresa would also remotely consider Brown University. Theresa requested campus information online and signed herself up on the college list-serves to receive periodic information on upcoming deadlines.

Initial online searches included using the Fastweb. To begin using the Fastweb, Theresa had to fill out a profile, where she responded to questions such as college size, location, campus setting, preference of states, and selectivity of the college. Theresa indicated another benefit of using Fastweb was that it provided information on potential scholarships. In using the Fastweb she stated, that it “gave me schools that I would have not otherwise considered.”

**Computers in Education**

Technology became present in education due to “a few teachers with vision who were willing to experiment” (Dwyer, 2002). Educators who have been in the profession for over twenty years recall the numerous transformations of computers. Heavyset stationary model computers are no longer present as computers have become omnipresent and weighing no more than six to eight pounds. The changes of computers are even more impressive as computers are no longer constrained to classroom walls as a result of the development of wireless communication. Students have access to almost any information with every keystroke. The presence of computers in academic settings is vital in so much that learner’s daily encounter computer technology. The possibilities of learning have extended into creating online learning communities and have extended into the development of long distance educational classes for children of migrant farmworkers (Stafford-Levy, 2004).

Because technology is consistently gaining momentum in the educational arena, it is evident that it will “become a constant companion, our personal toolkit and mind store for lifelong learning” (Dwyer, 2002). Dwyer (2002) adds the following four important methods of how technology can be utilized to create effective learners: 1) increase real world opportunities for students to devise and test their personal knowledge; 2) expand the learning community for students from one teacher and one class of students to a world full of experts with current and vital knowledge; 3) support students’ needs to organize data, ideas, and experiences so that they are able to identify patterns and build their personal models; and 4) provide the means to develop unique audiences locally or remotely to view and critique student work. It is then the role of technology to be a tool that enables learners with opportunities, which will be beneficial in their day-to-day activities – such as applying to college. Technology’s role is also to make available a wide range of knowledge that will sustain learners’ personal learning models while, in turn, receiving input from various resources via the use of technology.
Access

Computer technology is present, but it is not readily accessible to all students (Becker, 2000). When the accessibility or lack thereof is a factor, students lacking access to computer technology stand to fall short of obtaining the necessary computer technology skills to compete with their counterparts. The issue of inequitable access to computer technology is serious, as Becker (2000) demonstrates that students with varying income levels tend to generally have quite distinct computer technology experience. As of 1998, responses from a nationwide teacher survey suggests that students residing in lower income households are more likely to utilize computers for repetitive practice, whereas students from higher income households utilize computers in more sophisticated and intellectual complex applications (Becker, 2000). In the school setting were this study took place the student population met many of the factors that would indicate inequitable access:

1) Ethnic distribution
   □ 98.2 %  Hispanic
   □ 0.2 %  African American
   □ 1.1%  White
   □ 0.5 %  Native American

2) Economically disadvantaged - 86.6 %
3) Limited English Proficient - 18.9 %
4) At-risk - 69.2%
5) Mobility - 18.8%

The significance of these factors extend beyond the school walls, as students in lower income households will invariably be limited to access of computer technology once they leave the school. Thus, similar concerns raise questions about the emergence of the digital divide (Vail, 2003).

Schools play a critical role in alleviating the dilemmas that lower income families undergo. Educational institutions need to provide opportunities for less advantaged students by exposing students to computer technology. Since the 1980s access to school computers increased from 250,000 in 1983 to 8.6 million in 1998; another notable increase occurred when the average of pupils per school per computer dropped from 40 to 6 or 7 (Becker, 2000). Additional access issues are based on a school’s socioeconomic status (SES). In terms of disadvantages created by differing SES levels, schools with concentrated low income families are approximately one to two years behind schools with students from average incomes; however, lag an additional one to two years behind schools that have a predominantly high socioeconomic level (Becker, 2000, Crowther, 2003, Plonikoff, 2003).

While schools play a critical role in the access of computer use for less advantaged students, the use of home computers also serves as a significant factor which affects equitable use of computers. More precisely, “Income, education, and ethnicity are key predictors of access” (Becker, 2000, p.56, Crowther, 2003). Data from CPS in 1998 indicates that in a household where the income level was under $20,000 only 22% of children had a home computer, whereas families with incomes more than $75,000 approximately 91% had a computer (Plotnikoff, 2003). The same information also indicates children whose parents did not graduate from high school and those parents who have at least one parent with a master’s degree ranged 16% to 91% which owned a computer. Figures continue to stagger, as residential segregation is indicative that a student in a low socioeconomic household is less likely to be able to borrow a computer from a neighbor (Shields & Behrman, 2000, Vail, 2003). The preliminary factors affecting the use of home computers continue to create a disparity, as computer functionality becomes essential for SES groups. Therefore, the digital divide separating socioeconomic advantaged and disadvantaged children is immense.
The successful participation of children politically, socially, and economically depends on increased comfort and competence in the use of computers. Thus, to many policy makers and parents, equitable digital opportunities are one in the same with equitable educational opportunities (Shields & Behrman, 2000). In the border community of El Paso-Juarez, where this present study took place, income, education, and ethnicity were not singular factors but combined to be the key factors that distinguished these participants from other areas in the country. And, although the school district in this border community is well supported from state funding, many of the schools are stuck in an area of convergence where low income, developing educational goals, and ethnic status adversely influence student learning opportunities.

Preparing for College

Preparing for college has become much more sophisticated for today’s college bound seniors, as many college bound seniors seek out preparing applications online (Clayton, 2003). This highly developed method of preparing for college is partially due to the use computer technology. According to the Darien Library, students are able to utilize college sites to help them in their college preparation efforts (2003). For instance, CampusTours.com enables students to virtually visit a college campus. Through Embark.com, college bound seniors are able to take self-tests that match them to college campuses. College Board Online assists in college preparation, as it provides students and their parents with information on selecting and attending college. Chapman & DiBianco (1996) discuss the provision of informed choices in preparation for college bound seniors for “life after high school.” Preparation for college begins even before students enter their senior year. In some instances, their junior year is the prime year for getting resumes and many of the required tests out of the way. However, even eighth grade students are also being made aware of college preparation needs through online advice (ACT, Inc., 2004). Subsequently, living in a border community with the economic, educational, and ethnic identity factors impinging access to technology, preparing for college was challenging.

Selecting a College

Just as computer technology has changed college preparation, computer technology has also impacted the college selection process. Clayton (2003) discusses how the college viewbook, letters, postcards, phone calls, and even videos are out of date for this new technology savvy generation. An emerging essential in the selection of a college is accessibility to college search engines such collegeboard.com and usnews.com, and other essential features for this generation of college hopefuls is being able to check the status of their online application and even consulting a “Virtual Advisor” (Clayton, 2003).

The college selection process is facilitated through the use of computer technology; however, there are other factors that affect the college selection process. A survey conducted by the National Association for College Admission Counseling identified academic reputation as the most important issue affecting the selection of a college by college bound seniors (Meritz, 2004). According Meritz (2004), one high school senior from the border region of El Paso, Texas considered cost and whether he fits a specific college atmosphere as factors that he will consider. This student contemplated the selection of entering one the following colleges: 1) The University of Texas at Austin, 2) St. Mary’s University in San Antonio, 3) Baylor University, 4) New York University, and 5) The University of Texas at El Paso (Meritz, 2004). A survey conducted in the fall of 2002 by the National Association for College Admission Counseling indicated that 55 percent of students selected a college based
on academic reputation; 34 percent selected a college based on college size; 18 percent selected a college because it was closer to home; and 56 percent selected a college based on low tuition or as a result of the financial assistance they were offered (Meritz, 2004).

Applying to College

The old fashioned way of applying to college consisted of filling out applications by handwriting in the information or using a typewriter to complete the application. However, today college bound seniors can apply to college by submitting an online application. Froomkin (1996) discusses the method in which technology has changed the admittance and application process. The immediacy of computer technology allows students to apply to multiple colleges in a convenient efficient manner. There are, however, some students who are not completely convinced about applying to college via the use of computer technology. Clayton (2002) indicates that the fear of some students include worrying that the application may get lost, never reaching the school, worrying about the privacy of personal information or that colleges prefer handwritten applications over electronic applications. Despite these concerns, the Princeton Review reports that the number of college bound seniors who applied online rose from 29,000 in 1999 to 387,000 in 2002 (Clayton, 2002).

Computer technology has added simplicity to the college application process. Applying for college through the use of computer technology far exceeds the traditional method of applying to college. Kirby (2000) indicates that applying to college today is as easy as logging on to the web site, accessing the online application, filling it out, inserting the credit card number for the application fee and pressing send. However, the education market research firm of Art & Science showed that a slight 44 percent of college bound seniors preferred using paper, while 43 percent of students preferred applying online (Kirby, 2000). Despite the poll’s small margin of difference, the use of computer technology to apply online is gaining popularity. The following sites provided by Kirby (2000) indicate an increase in sites specifically being used to promote applying online: 1) College Board Online (www.collegeboard.com), 2) Peterson’s CollegeQuest (www.collegequest.com), and 3) Princeton Review (www.review.com/college). Yet, it is clear that if a high school student lacks a credit card, technology skills, access to computers, and guidance or the ability to prepare, or apply to college the opportunity to attend is limited.

Methodology

The purpose of this study was to examine and describe the use of computer technology by graduating college bound seniors enrolled in a large urban high school along a southwest border community located along the border between Ciudad Juarez, Chihuahua, in Mexico and El Paso, Texas, in the United States. The urban high school is classified as 5A high school with a student population of approximately 2750 in grades 9-12. The graduating class of 628 seniors was the basis of this study. First, a Computer Attitude Scale (Lloyd and Gressard, 1984) aimed at identifying the level of computer comfort in order to determine how college bound seniors prepare, select, and apply to a college utilizing computer technology skills was used. The use of a Senior Survey provided an overview of graduating college bound seniors in terms of whether and how they used computer technology to apply for college. The 12 case study participants were chosen based on the criteria of: identified graduating seniors; intentions to go to college; applied to college; a willingness to participate in the study; and returned a signed consent form from parents.

Primarily, the purpose of this study was to identify how technology use by students impacted or assisted their pursuit for higher education. Each of the 12 case study participants utilized technology
in varied ways. However, we believe Theresa’s use of the internet, based on her minimal financial means, propelled her to seek further than she would have otherwise (i.e. talking with a school counselor). In speaking with the 12 college-bound students in the case studies, we found students who were staying in town locally for college, others who were attending in-state, yet there was Theresa, who was not attending locally nor in-state but was seeking out the possibility of attending a university that would not be considered an obvious option to most people she interacted with at the high school. The participants’ data were utilized to gain an understanding of college bound seniors’ experiences but also to recognize the use of computer technology in regard to issues of social justice.

**Findings**

**Computer Attitude Scale**

Table 1, below, displays descriptive statistics for graduating seniors’ computer attitude according to: computer anxiety, computer confidence, computer liking, and computer usefulness. A total of 330 survey respondents participated. The minimum and maximum scores indicating the highest and lowest scores provided by survey respondents are included. The mean score on and standard deviation are also displayed.

<table>
<thead>
<tr>
<th>Sub score</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Attitude Anxiety</td>
<td>330</td>
<td>72</td>
<td>159</td>
<td>123.84</td>
<td>17.886</td>
</tr>
<tr>
<td>Confidence</td>
<td>330</td>
<td>16</td>
<td>40</td>
<td>32.95</td>
<td>5.065</td>
</tr>
<tr>
<td>Liking</td>
<td>330</td>
<td>16</td>
<td>40</td>
<td>31.30</td>
<td>5.231</td>
</tr>
<tr>
<td>Usefulness</td>
<td>330</td>
<td>10</td>
<td>40</td>
<td>28.05</td>
<td>5.733</td>
</tr>
<tr>
<td>Valid N (list wise)</td>
<td>330</td>
<td>18</td>
<td>40</td>
<td>31.54</td>
<td>4.637</td>
</tr>
</tbody>
</table>

The survey questions are coded so that the higher the score, the more positive the attitude. The data collected in this study indicated that the mean score for computer attitude was 123.84. The mean of the computer attitude was above the neutral attitude score of 100. Out of a possible maximum score of 160, a mean score of 123.84 indicates a fairly comfortable attitude towards computers. Additional results indicated that the mean score for computer anxiety was 32.95. Out of a possible maximum score of 40, a mean score of 32.95 indicated a low computer anxiety, as a higher score means less anxiety. For computer confidence, the mean score was 31.30. Out of a possible maximum score of 40, a mean score of 31.30 indicates computer confidence. However, for computer liking, a mean score of 28.05 indicates a fairly moderate computer liking. The mean score of computer usefulness was 31.54, which indicates a positive disposition towards computer usefulness. The sub scores of computer anxiety, computer confidence, computer liking, and computer usefulness exceeded 25, which is a neutral attitude score. In analyzing the mean scores,
it is clear that the border area college bound high school seniors surveyed had a positive computer attitude. This is especially important, as the intent of this study is to identify how border area college bound seniors prepare, select, and apply to a college utilizing computer technology skills.

**Senior Class Survey**

The local school district’s Senior Survey was distributed to approximately 559 students during the last month of their senior year to obtain responses on: graduation program, post high school plans, college information, financial aid/scholarships, internet resources, and overall counseling services made available to them by the high school counseling staff. This Senior Survey serves to contextualize the use of technology by high school seniors, college-bound or not, and that internet use can fill a gap that the school setting may not be able to provide. So, for this study, only the responses to internet resources and counseling services aid in understanding the role of technology in higher education planning.

Especially important to this study was high school seniors’ responses to the use of the Internet, libraries, etc, to help in their career planning.

**Senior Class Survey–Resources (Internet, Library, etc…)**

<table>
<thead>
<tr>
<th>I used resources like the Internet, libraries, etc., to help me in my career planning</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td># of Responses</td>
<td>% of Responses</td>
<td># of Responses</td>
</tr>
<tr>
<td>Total number of responses         259</td>
<td>76.0%</td>
<td>82</td>
</tr>
</tbody>
</table>

According to the survey responses, 76% college bound seniors indicated that they had used the Internet, libraries, etc… to help in their career planning, while 24% indicated that they had not used the Internet or library. This data confirms what Dwyer (2002) stated that U.S. schools provided an increased Internet accessibility of 98% in the year 2000.

Survey responses on whether counselors were helpful in students’ career planning were gathered. This information continues to be of significance in this study as counselors can positively or negatively impact the college bound seniors’ futures.

**Senior Class Survey-Counselor Helpful in Career Planning**

<table>
<thead>
<tr>
<th>Counselors were helpful in career planning</th>
<th>Strongly Disagree</th>
<th>Slightly Disagree</th>
<th>Undecided</th>
<th>Slightly Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td># of R</td>
<td>% of R</td>
<td># of R</td>
<td>% of R</td>
<td># of R</td>
<td>% of R</td>
</tr>
<tr>
<td>Responses</td>
<td>305</td>
<td>26.0%</td>
<td>264</td>
<td>22.5%</td>
<td>307</td>
</tr>
</tbody>
</table>
Responses indicated that 26% strongly disagreed, 22.5% slightly disagreed, 26.2% were undecided, 14.2% slightly agreed, and 11% strongly agreed. This means that only 25% of those high school seniors surveyed credited their counselors with career planning advice. This information corresponds with the information gathered from the case study interviews, where counselors ranked low as useful resources (see below). Counselors ranked second to last just slightly above family and friends but significantly behind resources like computers and the Internet.

Case Studies – Students’ Plans for the Future

The case study interview participants’ average computer experience was an estimated 4.6 years. These case study participants are as Allerton (2001) indicates are part of the Generation Y, as a result of being born between 1979 through 1994. Therefore, as Allerton (2001) indicates all have had participated in a society that is replete with technology experience that began as early as pre-kindergarten. Computer access at home was available to 11 out the 12 college bound students interviewed, and the same students respectively had access to the Internet from home.

Even though not all students had computer and Internet access at home, all 12 case study participants had an e-mail address. Of the 12, one of the fathers only had an elementary level of education. Four mothers and one father obtained a minimum of a middle school education. An additional two mothers and three fathers attended high school but did not graduate from high school. There was only one mother and one father who graduated from high school. Another three mothers and two fathers obtained a GED. Two mothers and two fathers acquired higher education, as they obtained an associates degree, and, finally, one father and nine mothers attended college but did not receive a degree.

Parental Educational Levels of Case Study Seniors

<table>
<thead>
<tr>
<th>Educational Level</th>
<th>Mother</th>
<th>Father</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary School</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Middle School</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>High School (did not graduate)</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>High School Graduate</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>GED</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>College Degree (Associates)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>College (no degree)</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

According to Plotnikoff (2003), these case study participants should not fall between the 16% and 91% who own a computer because their parents do not have the indicated educational level. However, data from the case study participants contradicts those findings. Despite their parents’ educational level, at least 11 out of the 12 case study participants own a computer at home. In this respect, one cannot presume to know the sacrifices in which these families undergo in order to ensure that their children have the appropriate supplies for better educational opportunities. Data collected demonstrated the educational level of 11 sets of parents and one single parent household. This information indicated that the case study interview participants all have obtained more education than most of their parents and all are attempting to obtain higher education. This information is significant because all participants in the case study interviews are college bound and have prepared, selected, and entered college full time in the fall, following their spring graduation.
Role of Technology v. School Counselors

It was also indispensable to know how the 12 seniors ranked their teachers, counselors, family/friends, and computers/Internet as useful resources (see below). A score of a 1 was indicative of a high score and a score of a 4 signified a low score. In interpreting the table below, the total score for computers/Internet was a score of 17. This meant that these high school seniors ranked computers and the Internet as the most useful resource. The second most useful resource was teachers with a score of 20. Counselors came in third with a score of 27, followed by family and friends with a score of 29.

Descriptive Statistics–Useful Resources of Teachers, Counselors, Family/Friends & Computers/Internet Ranked by Students

<table>
<thead>
<tr>
<th>Teachers</th>
<th>Counselors</th>
<th>Family/Friends</th>
<th>Computers/Internet</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>4</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
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<tr>
<td>2</td>
<td>4</td>
<td>3</td>
<td>4</td>
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<tr>
<td>1</td>
<td>4</td>
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</tr>
<tr>
<td>4</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>27</td>
<td>29</td>
</tr>
</tbody>
</table>

The * indicates that information was not available.

Anderson and Ronnkvist's (1999) study indicates that schools in lower income communities are likely to have less funding or the resources to obtain the latest technologies. Therefore, interviews were conducted to provide recommendations for schools to implement computer technology to assist students in seeking higher education. This appears to be supported by the participants' responses, as many noted making more computers available, obtaining the latest software, and requiring that high school students take more than the minimum required computer technology courses.

In the end, based on student data obtained, the 12 students applied to at least one but also a maximum of five of the following colleges/universities: Baylor University, Brown University, Denison University, El Paso Community College, Johnson & Wales, Massachusetts Institute of Technology, University of Miami, New York University, Sam Houston University, St. Mary's University, Trinity University, University of North Texas, University of Texas at Austin, University of Texas at El Paso, University of Texas at San Antonio, and Washington State University. Along with applying to various colleges/universities, 11 of the case study interviews applied for financial aid, loans, grants, and scholarships through the use of computer technology, specifically the Internet.
### College Attended by Case Study Seniors

<table>
<thead>
<tr>
<th>College</th>
<th>Number Attending</th>
</tr>
</thead>
<tbody>
<tr>
<td>El Paso Community College</td>
<td>2</td>
</tr>
<tr>
<td>Brown University</td>
<td>1</td>
</tr>
<tr>
<td>Trinity University</td>
<td>1</td>
</tr>
<tr>
<td>University of Texas at Austin</td>
<td>3</td>
</tr>
<tr>
<td>University of Texas at El Paso</td>
<td>4</td>
</tr>
<tr>
<td>University of North Texas</td>
<td>1</td>
</tr>
</tbody>
</table>

The case study participants expressed interest in seeking university degrees in business, education, criminal justice, engineering, medicine, and international studies. These college and career goals are significant because they reveal how these students sought out and pursued degrees as a result of the information they gathered by using the Internet.

#### Dream into Reality

Theresa’s college search online would lead her directly to college websites. Accessing college homepages online enabled Theresa to view colleges’ academic programs and curriculum. For Theresa, another benefit of directly accessing colleges’ information online was that it provided her with information on college size and the faculty to student ratio. Online searching of college websites also facilitated Theresa with a view of the campus, dorms, and overall student life.

In Theresa’s preparation for college, she would also attend a few college recruiting presentations. According to Theresa, college recruiters often promoted their colleges by giving students bookmarks or flyers with the college website information. College recruiters also extended their own e-mail addresses so that students could contact them if they had any additional questions.

During Theresa’s junior year, the high school also sponsored an in-state college tour. Students visited The University of Texas at Austin, The University of Texas at San Antonio, and Sul Ross State University. Of the three colleges students visited, Theresa had already inquired online about The University of Texas at Austin. Her visit also included a detailed explanation of the process of applying to the college. This information was already familiar to Theresa, as she recalled seeing it on the website for The University of Texas at Austin.

In seeking out financial aid information, Theresa filled out the FAFSA application online. By filling out the application online, if Theresa had a question, she states, “Clicking on the link would give me an explanation of it.” FAFSA online also provided Theresa with an immediate estimate of her family’s expected contribution. Theresa was also able to electronically send the FAFSA financial information to prospective universities by simply entering the university code.

At the beginning of her senior year, Theresa continued with her college plans. By this time, Theresa was already trying to narrow the selection of her college choices by applying online to
The University of Texas at Austin, Rice, Georgetown, and Brown University. Her basis for selecting Brown was primarily due to the fact that she wanted to study medicine. However, her decision was also a result of the information she received from her brother’s friend as well as the Program in Liberal Medical Education (PLME) information she requested and the online information provided by the university. Unlike many traditional students, Theresa would not have the opportunity to visit the Brown campus prior to actually being admitted. She did not want to put her parents under a financial strain, so she used the Internet to get to know the campus without having to make a formal visit. Theresa states, “It is through the Internet that one can find information on universities without having to visit them.” Although her parents knew that their daughter’s university was in Rhode Island, it was not until Theresa printed out an online map from Mapquest that her parents really realized the distance between their home and that of the university.

The application process for Theresa’s college search continued as she used computer technology to request an application and continue her online search. Upon receiving and submitting her college application, Theresa also began to check the status of her application her online application. Theresa states, “With the Internet, you can stay updated through e-mail or through the universities’ identification numbers. Overall, it is vital to have access to a computer with Internet because now, more than ever, technology is becoming a big part of the process of applying online.”

**Discussion**

With the use of computer technology, students are able to instantaneously travel across the country in search of colleges. The plethora of information students are able to directly receive is invaluable to students who would not otherwise have the opportunity to financially afford a college visit prior to selecting a college. This is crucial for students like Theresa, who is now attending Brown University. Theresa relied solely on the information she obtained online. In fact, for Theresa, her preparation, selection, and application to college were strongly supported though her use of computer technology.

The essential lesson we have learned from the students, in particular their families, relates to the issue of resiliency. The lack of educational level by parents brings forth the resiliency theory, whereby Bernard (1993, 1997) explained resiliency as a capacity to effectively recover from more extreme social and economic roadblocks despite difficult perils during human development. In children, handling difficulty often requires having the following qualities: social competence, problem solving, autonomy, and a sense of purpose and future. “Resiliency theory proposes that all of the attributes are present to some degree in most people. Whether they are strong enough to help individuals cope with adversity, however, depends on the presence of protective factors during childhood” states Chavkin and Feyl-Gonzalez (2000, p. 2). In this present study, resiliency theory is important because it recognizes the challenges that individuals overcome, specifically college bound seniors using computer technology to seek higher education. Even though these college bound students’ parents lack an educational level beyond that of an associates degree, their children are in search of opportunities that were once unimaginable to their parents.

Many of these families have limited financial resources. However, they find a way to supply their children with the critical components necessary for their children to succeed. Plotnikoff (2003) indicates that in a household where the income level was under $20,000 only 22% of children had a home computer, whereas families with incomes more than $75,000 approximately 91% had a computer. Despite these figures, the families of these students are sacrificing and moving past their limited financial resources and providing their children with computer technology. Students
who want to seek higher education should not be limited because of their family’s economical situation.

**Conclusion**

The southwest border community is an environment that the authors are familiar with. For the most part, students in this area are predominantly Mexican-American descent and refer to themselves as Hispanic. The parents in this area view education as the most valuable asset in a child’s future. The students whom we have had the privilege of working with represent the hopes and dreams of a culture, which places education as a secure means of ensuring a prosperous future. And, ironically, technology, specifically the internet, although often considered just another boundary for students living in border communities to overcome often can function as a tool to leverage the concomitant goals of the family and the student. In the end, from these 12 students, we have learned that if given the opportunity of higher education, each will seek to obtain it. The students we worked with in this project allowed us to understand the influence of computer technology. Specifically, how computer technology can impacts how students living along the border leverage the internet during their preparation, selection, and application to college.

As learners, we found that students were generally comfortable and had a positive attitude towards technology. More importantly, we also found that students had a sincere desire to pursue a higher education but did not feel that the counseling services available to them adequately addressed their needs. In fact, data from the students credited the Internet and computer technology as the most valuable source for college preparation. Also, evidence presented from the case study participants’ experiences in selecting, preparing, and applying for higher learning clearly favored the use of technology.

This study has enabled us to delve into the area of technological instruction, which has the potential for greatness. However, instruction regarding computer technology is often relegated to a minimal function that neither assists nor compliments how it can directly affect a student’s pursuit of higher education. If students are to utilize the knowledge that formal schooling provides, they must adapt to a consistent use of computer technology to increase their media literacy skills. These skills will, in turn, continue to supply a strong basis for which students can use computer technology skills to meet the changing requirements by institutions of higher learning.
References


Computer Attitude Scale

Below are a series of statements. There are no correct answers to these statements. They are designed to permit you to indicate the extent to which you agree or disagree with the ideas expressed. Place a check mark in the space under the label, which is closest to your agreement or disagreement with the statements.

1. Computers do not scare me at all.  
2. I’m no good with computers.  
3. I would like working with computers.  
4. I will use computers many ways in my life.  
5. Working with a computer would make me very nervous.  
7. The challenge of solving problems on the computer does not appeal to me.  
8. Learning about computers is a waste of time.  
9. I do not feel threatened when others talk about computers.  
10. I don’t think I would do advanced computer work.  
11. I think working with computers would be enjoyable and stimulating.  
12. Learning about computers is worthwhile.  
13. I feel aggressive and hostile toward computers.  
14. I am sure I could do work with computers.  
15. Figuring out computer problems does not appeal to me.  
16. I’ll need a firm mastery of computers for my future work.  
17. It wouldn’t bother me at all to take computer courses.  
18. I’m not the type to do well with computers.  
19. When there is a problem with a computer run that I can’t immediately solve, I would stick with it until I have the answer.  
20. I expect to have little use for computers in my daily life.
21. Computers make me feel uncomfortable.
22. I am sure I could learn a computer language.
23. I don’t understand how some people can spend so much time working with computers and seem to enjoy it.
24. I can’t think of any way that I will use computers in my career.
25. I would feel at ease in a computer class.
26. I think using a computer would be very hard for me.
27. Once I start to work with a computer, I would find it hard to stop.
28. Knowing how to work with computers would increase my job possibilities.
29. I get a sinking feeling when I think of trying to use a computer.
30. I could get good grades in computer courses.
31. I will do as little work with computers as possible.
32. Anything that a computer can be used for, I can do it just as well some other way.
33. I would feel comfortable working with a computer.
34. I do not think I could handle a computer course.
35. If a problem is left unsolved in a computer class, I would continue to think about it afterward.
36. It is important for me to do well in computer classes.
37. Computers make me feel uneasy and confused.
38. I have a lot of self-confidence when it comes to working with computers.
39. I do not enjoy talking with others about computers.
40. Working with computers will not be important to me in my life’s work.