The Use of Technology by Students at an HBCU
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Abstract

English:

As use of the Internet continues to expand, the width of the digital divide between the "haves" and the "have nots" will expand as well. Caught in the forefront of the "have nots" are those living within a region of the south known as the Black Belt. This area contains the greatest levels of poor, uneducated, and Black Americans which according to the U.S. Dept. of Commerce is also one of the least technologically advanced parts of the country (1999). The purpose of this study is to determine the level of competence and comfort-ability of students attending and HBCU in this region regarding the use of technology especially when accessing personal health information. Results of the focus groups indicate that these students had minimal access to technology at home and within primary and secondary education. The use of technology by these students at the college level was minimal and was linked to e-mail use and the Internet primarily. Use of technology for instructional purposes was tied to specific coursework typically assigned within upper level health and physical education courses exclusively.

Spanish:

Mientras la utilización del Internet continúe creciendo, el ancho de la brecha de la división digital continuará expandiéndose entre los que "tienen" y los que "no tienen". Presos en el área de los que "no tienen" se encuentran aquellos viviendo en una región del Sur de Estados Unidos de Norteamérica denominada la Franja Negra (Black Belt). Esta área geográfica contiene los niveles más elevados de pobreza, falta de educación y afro-americano que según el Departamento de Comercio de EEUU es una de las áreas menos avanzadas tecnológicamente del país (1999). El propósito de este estudio es determinar los niveles de competencia y comodidad entre estudiantes participando en HBCU en esta región sobre el uso de tecnología, especialmente al acceso de información de salud personal. Resultados de grupos de enfoque o grupos focales, indican que estos estudiantes han tenido mínimo acceso a tecnología en sus hogares y en las escuelas primarias y secundarias. El uso de tecnología por estos estudiantes al nivel universitario es mínimo y esta y esta principalmente ligada al uso del Internet. El uso de tecnología para propósitos educativos se asoció a cursos específicos generalmente asignados a cursos de niveles elevados sobre temas de salud y educación física.

Introduction

The Internet has been described as "one of the most important communication innovations in history" (Hoffman and Novak, 1999, pg 2). The use of technology, world wide, continues to spiral up ward as its usefulness, both personally and professionally, continues to be revealed. In the United States the goal put forth by the Clinton administration of having Internet access to every American through Community Access Centers (CAC's) such as schools, libraries, and other access points as well as to homes by 2007 may fall short but the idea of every child being able to log on to the Internet is getting closer to being reality (Clinton, 1997; U.S. Dept. of Commerce, 1999).

Connectivity in the U.S. is a kind of "tale of two cities" or more specifically a tale of urban and rural access. According to the U.S. Department of Commerce in the report, Falling Through the Net: Defining the Digital Divide, Americans generally are becoming more connected (1999). Alan Greenspan, The Federal Reserve Chairman went as far to suggest that technology is improving the quality of life in rural America (Parker, 2000). A 2001 report on technology in the classroom pointed out that virtual high schools are present in every state in the south (Collins, 2001). In addition, BellSouth has reportedly made the commitment to "bridge the digital divide" by bringing high speed access to "smaller communities" throughout South Carolina (BellSouth, 2002). Also, with the future introduction of the state of the art wireless system known as IEEE 802.16, but affectionately called WiMax, analysts from some major telecommunication companies suggest it could help close the digital divide (Reinhardt, 2004).

However, some groups, principally the poor, uneducated, and black Americans living in rural areas

are lagging behind their urban counterparts. The Welfare Information Network's October 2002 report Bridging the Rural Digital Divide sums up the situation when it states that "a digital divide in access to and use of the Internet and other information technology persists, particularly among individuals at different income and education levels, and in remote geographic areas" (pg. 1). A report from the Southeast Farm Press points out that more than 60 percent of the zip codes in the Mississippi River Delta areas of Mississippi, Louisiana, and Arkansas had no broadband provider as of 2002 (October 2). Supporting the lack of technology was a study of telecommunication technologies in the rural south which surmised that establishing or upgrading digital capabilities were being hampered because they were too cost prohibitive (Malecki & Boush, 1999). Without question rural areas are at a technological disadvantage. The U.S. government characterizes the current technology situation as being one between the "haves," who are information-rich with abundant Commerce, 1999). Where people live is unquestionably one of the most significant factors in having access to technology and this is even more evident when racial geography is considered. The greatest deficit in the availability of technology is in a region, once described by Du Bois in 1903 as the color-line, but is more notable as the crescent-shaped geographical area that stems south from the Appalachian Mountains in Virginia winding down through Georgia, Alabama, Mississippi, and terminating in Texas known as the Black Belt (Institute for Rural Health, 2003).

The term Black Belt was originally used to describe the rich fertile soil but soon came to typify the population inhabiting the area which is predominantly black, poor, and to a large extent uneducated. This area which is rich in culture, crops, and culinary specialties is equally as poor academically, monetarily, and technologically. Within every measure of achievement regarding the use of technology, the Black Belt scores in the lowest of percentiles. The Institute for Rural Health Research in describing the situation in Alabama's portion of the Black Belt could have accurately extended its description to cover most of the other portions when it said "it is an area in dire need, confronted with economic stagnation, declining population, and insufficient health care and schools (2003, pg. 1)."

It comes as no surprise that this area continues to fall behind technologically as the divide widens between those at the lowest and highest incomes levels and those at the lowest and highest education levels. Household incomes of $75,000 and higher are 20 times more likely to have Internet access than

access to technology, and the "have nots," who are information-poor having little access to technology with minimal opportunities of future access. Accessibility to technology is not consistent nationwide and the digital divide is widening among certain populations (US Dept. of Commerce, 1999). Why is this digital divide an issue of great significance? For those regions of the country that have been hit hard economically future revitalization of these areas will be linked to accessibility (Welfare Information Network, 2002).

The lack of technology in rural parts of the south has placed its population, which is typically poor, black, and uneducated under the unenviable category of the "have nots" with little hope of catching up to the "haves" any time soon. The National Telecommunications and Information Administration discovered from their 1998 study, the third in the "Falling Through the Net" series, that rural America is half as likely to have Internet access as those in urban areas earning the same income (US Dept. of rural households at the lowest income levels (U.S. Dept. of Commerce, 1999). Also, the divide between the highest and lowest education levels regarding home Internet access increased by 25% from 1997 to 1998 alone and those with college degrees are more than eight times more likely to have a computer at home and almost sixteen times as likely to have Internet access at home than someone with an elementary school education (US Dept. of Commerce, 1999).

In colleges and universities the use of technology for on-line course work, academic research, and personal use has required students to perform skillfully regardless of their backgrounds. However, students attending Historically Black Colleges and Universities (HBCUs) in the rural south are at a distinct disadvantage. Students attending HBCU have less access to technology than students at private universities according to studies of first year students at private colleges and public black colleges (Hoffman and Novak, 1999). Students in private schools used email and the Internet at significantly higher levels than their counterparts at public black colleges. According to the United Negro College Fund (UNCF) the digital divide is greater within higher education than for households across the country. The UNCF reports that the gap between African American households and American households that own computers is 45% compared to the gap of 72% between UNCF students and other students across the country who own a computer (UNCF, 2000). Korgen and colleagues in their 2001 study entitled Internet Use Among College Students: Are There Differences By Race/ethnicity? also suggest that a lack of access to computers and the

Internet at home by black college students equated to less use in college which in turn translated into reduced study time. It remains unclear if the lack of access is more a function of inadequate education in the use of the technologies or the lack of the technologies themselves (Anderson and Melchior, 1995). Regardless of the reasons, students at HBCUs lag behind in their access to technology. The lack of access is of considerable concern when considering the value of technology in accessing current and relevant health information, a topic of increasing importance to students. Without question the digital divide is directly proportionate to levels of education, income, and race (U.S. Dept. of Commerce, 1999).

Purpose

The purpose of this study is to determine the level of competence and comfort- ability students attending an HBCU in the rural south have regarding the use of technology especially when accessing personal health information. The pertinence of such a study is twofold. First of all, literally every university across the country has the aspiration that their students be well versed in the use of multiple technologies including e-mail, the Internet, and the delivery of course materials or entire courses on-line. Secondly, the use of information technologies to access personal health information by students will be an increasingly important resource and assessing their beliefs about its value for this purpose is important in determining competence and comfortability.

Study Design

The study used a focus group format to elicit the perceptions and beliefs of students pertaining to five general areas. This qualitative research design provided the opportunity to address a broad base of issues regarding their past and present use of technology which is consistent with its best use (McDermott & Sarvela, 1999). Students randomly selected from a number of Health, Physical Education and Recreation courses were asked to volunteer for one of five focus groups which were run on select days from 12:00 to 1:00 over a two week period. Each of the focus groups contained 6 to 8 students. The questions asked during the sessions were designed by a content expert and were delivered in the same manner to each group. The actual questions are in listed in Figure 1. The participants in the study were black, mostly juniors and seniors, between 20-22, and typically lived within a 100 mile radius of the university. The university is a state supported institution of approximately 4,000 students which is located within the Black Belt of southwestern Georgia. The university is a historically Black university and its student population is reflective of that heritage.

Results

Technology in Elementary School

Regarding the use of technology in elementary school the respondents overwhelmingly commented that the only computer use was during a weekly or biweekly computer lab where they worked on reading skills, math skills, or played games. Those requiring more extensive reading support could attend the computer lab as much as twice a week. There were several exceptions to this level of computer use, however. One exception was from a nontraditional student who had no computer experience at this level and the second was from a student who had participated in an elementary computer magnet school where computer skills were taught daily.

Technology in Secondary School

Regarding the use of technology in secondary school most commented that they had received computer training through classes in either introduction to technology, keyboarding, word processing, or as part of a business class. Some of these technology classes were mandatory but most were optional. All commented that Internet research was required for a variety of classes but that gaining access to the computer lab to complete Internet assignments was difficult for those respondents attending schools who closed their labs immediately after normal school hours. Some commented that a few teachers provided class time for such assignments and some schools operated their computer labs beyond normal school hours, providing time for after school use. Most agreed that they were on a computer almost daily for some school purpose. A couple of the respondents stated that they were required to take a computer test over material from an English course on-line. One respondent, a first semester freshmen who had no previous experience with on-line course work, actually expressed a greater comfort with technology. His comfortability with technology was a result of having technology available at home; a situation the upper level students did not generally share. Also, one respondent stated that things were different now based on information from their younger sibling who is in school currently; the group agreed.

Technology at Home

Regarding the use of computers at home when they were growing up and at the present time, all but a couple of respondents stated that they did not have a computer at home during their elementary school years. Approximately half had a home computer during high school and only a few do not have a computer at home currently. All those with computers stated that they were connected to the Internet.

Use of Technology

Regarding the respondents comfortability in using technology (e-mail, Internet, and WEBCT) at their current university, virtually all responded that they felt comfortable with using the Internet, having used it in high school. The use of e-mail was a different matter. Between 33% and 50% stated that they have been using e-mail for only a year and two did not currently use e-mail at all. WEBCT use for on-line course assignments was a new modality for all the respondents. They stated that WEBCT use was a direct result of professors requiring it for on-line instruction as part of one of their university courses. Every respondent, bar one, had used WEBCT at least once and all agreed that the more they were required to use it the greater their comfort level. The respondents commented that their preference for WEBCT use was to augment traditional instruction. The overwhelming majority expressed a dislike for the idea of taking courses entirely on-line. However, none of the respondents had actually taken a course entirely on-line previously. Most agreed that once the students organized the timetable of the assignments, WEBCT was an acceptable instructional tool.

Electronic Assignments

In response to the question of whether they felt electronic assignments to be more challenging than traditional ones the respondents typically believed that electronic assignments were more work. They also expressed concerned about teacher support in the likelihood that a question about the assignment arose. The respondents also stated that electronic assignments required them to be more responsible and attentive to details. Specifically, electronic assignments required them to check WEBCT regularly, to be cognizant of timetables, and to read directions carefully, which most found problematic. Some expressed concern over whether completed assignments actually made it to the professor by the deadline. Another common theme was regarding the personal nature of in class versus on-line discussions. The overwhelming preference was for in-class discussions. Generally, the majority despised on-line testing however the issues of on-line assignments received some support. Suggestions for improving WEBCT assignments included opening up the assignments earlier (four days ahead of assignment), requiring students to go into WEBCT more frequently (e.g. have students print off syllabus from WEBCT and bring to class for credit), and providing training prior to course assignments.

Skill Levels in Using Technology

The question of whether they felt their technology skills were comparable to students at other universities elicited an affirmative response regarding e-mail and Internet research but they questioned their keyboarding abilities in comparison. An area of question for all was the level of accessibility at the university. Lack of access due to insufficient times of operation, quality of the hardware when it was available, and the need to purchase Internet access for dorm rooms were primary concerns. Three additional issues also made them question their skill levels in comparison to other schools; the lack of on-line registration, minimal web design skills, and no on-line courses. However, most believed the university was gaining ground on these issues.

When asked how they used the Internet within the semester for personal issues and school related work, literally all responded that research for class work was their primary reason for using technology. However, most did use the Internet for a wide range of personal issues such as to check out cars, meet people (chat), sports, purchase things, pornography, pay bills, check account balances and cell phone minutes, and for driving directions.

Personal Health Issues

When asked about their use of technology to search out personal health issues and the value of using technology for personal health issues in the future the respondents stated that they rarely used technology in this way and when they did it was for mixed reasons. Other than health class assignments, personal health use was primarily to research issues pertaining to marijuana, obesity, weight control, cancer (prostate, breast, general), sickle cell, tumors, muscle spasms, and diabetes. The few respondents accessing health information did so for friends, family, and personal reasons. When the topic changed to the value of technology in the future for personal health issues the responses again were all over the map. Some pointed out the value of technology as they aged, for children, and home remedies. Some suggested that future Internet could be for diagnosing a problem, exchanging information easier, understanding physician's better, and helping others by serving as a resource. It was also suggested that topics that might be embarrassing could be addressed more comfortably by using the Internet as a primary or secondary source of information.

Discussion and Conclusions

Access to technology within the south generally and the rural south specifically continues to be an issue of concern and the level of progress in closing the gap remains an issue of debate. Unquestionably the area of the country falling behind in the technology boom faster than all others is an area known as the Black Belt. For those Historically Black Colleges and Universities located in this region the realities of this technology deprivation are manifest in their student's lack of abilities with instructional technologies. Studies have shown that students attending Historically Black Colleges and Universities (HBCU)

in the rural south have distinct disadvantages including less access to technology than students at private universities. Students in private schools use instructional technologies like email and the Internet at significantly higher levels than their counterparts at public black colleges. But it remains unclear if the lack of access is more a function of inadequate education in the use of the technologies or the lack of the technologies themselves (Anderson and Melchior, 1995). This study assessed the use of technology by students at an HBCU which is linked to their feelings of competency, comfortability, and access. Issues of competency and comfortability are unquestionably linked to use and familiarity of technology in their formative school years, which for most provided minimal opportunities at best (Hargittai, 2002). Having use of a computer at home, again for most of those in the study was none existent.

Acknowledgement

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Figure 1. Focus Group Questions

1. Tell me about the use of computers and other technologies in your previous schooling (elementary, secondary).
   - How much technology was used by your elementary school teachers for instruction?
   - How much technology was used by your secondary school teachers for instruction?

2. Tell me about the use of computers and other technologies at home.
   - How much technology was used in your home growing up? Currently available in your home?

3. Tell me about the use of computers and other technologies here at ASU.
   - How comfortable would you say you are with using technology (e-mail, Internet, webct) at Albany State University?
   - Do you feel your technology skills are comparable to students at other universities?
   - How much have you used technology in the last year to search out information regarding personal health issues?

4. How comfortable are you using technology for assignments?
   - Are you currently able to use e-mail, Internet, and WEBCTcomfortably and competently?
   - How have you used the Internet within the semester for personal issues and school related work?
   - Do you find class assignments provided electronically to be more challenging than in-class assignments?

5. How might technology be of value to you in the future regarding personal health issues?