

Bonnie S. Brzozowski. A Survey of Orange County Public Library Computer Users. A Master's Paper for the M.S. in L.S. degree. July, 2007. 63 pages. Advisor: Evelyn Daniel

This study presents the results of a paper-based survey conducted at all four branches of the Orange County Public Library System (OCPLS) in North Carolina. The goal of the study was to gauge the adequacy in which OCPLS is bridging the digital divide, defined as gaps in technological access among the American public, as well as offer OCPLS an opportunity to gather feedback on existing policies and services. The collection of this data could have provided OCPLS with justification for its continued funding; however, the response rate was low and it is still unclear whether or not OCPLS is filling technological gaps. Nonetheless, the value of this survey has been demonstrated previously, and with slight alterations to the present study a higher response rate is likely.

Headings:

Microcomputers -- Patron use

Use studies -- Internet

Internet -- Public libraries

Digital divide

Information retrieval -- Social aspects

Public libraries -- North Carolina

A SURVEY OF ORANGE COUNTY PUBLIC LIBRARY COMPUTER USERS

by  
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## **Table of Contents**

List of Tables .....	2
Acknowledgements.....	3
Introduction.....	4
Literature Review.....	6
Methodology.....	23
Results and Discussion .....	31
Conclusions.....	47
References.....	49
Appendix A: Paper-based survey of Orange County Public Library Users .....	52
Appendix B: Text of signage located near the public use computers at each OCPLS location.....	57
Appendix C: Text of signage located at each OCPLS location circulation desk.....	58
Appendix D: Fact sheet including all IRB required elements of consent.....	59

## List of Tables

Table 1. Frequency of OCPLS Computer Use.....	31
Table 2. Length of Time Respondents Waited for a Computer .....	32
Table 3. Respondent Experience When Using the Computer.....	32
Table 4. Respondents Who Have Taken an OCPLS Computer Class.....	33
Table 5. Respondents Who Have Requested Help with the Computers.....	34
Table 6. Helpfulness of OCPLS Staff in Answering Respondents' Questions .....	34
Table 7. How Often Respondents Receive Items or Services They Want.....	35
Table 8. Respondents' Rating of OCPLS Staff Customer Service .....	35
Table 9. Other Activities Performed by Respondents While at the Library.....	36
Table 10. Computer Activities Performed by Respondents.....	36
Table 11. Primary Reasons Respondents Use OCPLS Computers.....	37
Table 12. Computer Skill Level of Respondents .....	38
Table 13. Demographic Characteristics of Respondents .....	40

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## **Introduction**

As an employee at the Carrboro Cybrary, a branch library within the Orange County Public Library System (OCPLS), I observe the public use computer users and have always noted the computer and Internet access gaps we fill. The Cybrary provides access to a group that often does not have access elsewhere and greatly appreciates the ability to ask and receive help from staff with basic computer and Internet questions (e.g. how to fill out Internet forms, how to use the back button on a web browser, how to interpret various Internet messages, etc.). However, no data exists on this population and, while the power of observation is strong, it is also biased. I understood that the only way to verify that the Cybrary and the rest of OCPLS were truly bridging technological access gaps was to survey this population.

The purpose of the present study was to determine whether or not the Orange County Public Library System (OCPLS) is adequately filling existing gaps in technological access, often referred to as the digital divide. Clear-cut gaps in computer and Internet access exist among the American public and most believe public libraries should be filling these gaps (Public Agenda Foundation, Americans for Libraries Council, & Gates Foundation, 2006). In order to determine the adequacy of OCPLS computer and Internet services, a survey of OCPLS computer users was conducted. It was expected that this survey would not only reveal the degree to which OCPLS is bridging the digital divide, but also the degree to which computer users are satisfied with existing OCPLS services, the services not currently provided that computer

users desire, and computer users' satisfaction level with staff. Armed with this knowledge OCPLS administrators and staff will be better able to evaluate existing policies and services and create new ones, as well as justify OCPLS's continued funding and support.

## **Literature Review**

### ***Introduction***

The digital age is upon us and the role of the public library in this new age is constantly being questioned. It is not completely certain what the libraries of the future will look like and some even anticipate the demise of libraries as we currently know them. As stated in a report prepared by Public Agenda Foundation et al. (2006), “With the advent of computers and search engines, digital libraries and the Internet, people ask if libraries are essential and whether they should command priority in the competition for public dollars” (p. 5). However, public libraries are certainly in a position to prove their worth and place in the future by addressing the technological needs of the communities that they serve and demonstrating to funding bodies the essential gaps in technological access that they fill. In order to accomplish these aims, it is necessary that the roles the American public expect national public libraries to play, current computer and Internet adoption trends in national public libraries, gaps in technological access among the American public, and public libraries’ budgetary and funding challenges be examined.

### ***Public Expectations of Public Libraries***

It has been reported (Public Agenda Foundation et al., 2006) that 64% of the American public believe providing access to public computers should be a high priority for public libraries (p. 48) and 45% believe providing wireless access at public libraries should be a high priority (p. 24). A study conducted by the Marist College Institute for

Public Opinion (2003) also found that providing public use computers is ranked among the top three expectations of their libraries.

Although the public names these as priorities for libraries, it is also apparent that many are uncertain of the importance of libraries in the digital age. It has been reported that in the wake of Internet access and in the face of major online booksellers and increasing online information resources, a significant percentage believe that the public library's role will become less important (Public Agenda Foundation et al., 2006, p. 39).

It is obvious then that the public expects computer and Internet access via their local public library, but it has been indicated that only 52% give their libraries a grade of "A" or "B" for their provision of these services (Public Agenda Foundation et al., 2006, p. 22). That leaves nearly half assigning libraries a bad grade for their provision of these services. This is unfortunate as Bertot (2006) found that public Internet access has a large impact on the provision of "education resources for K-12 students (63.6%), services for job seekers (46.1%), computer and Internet training skills (38.0%), and access to and assistance with local, state, and federal government electronic services (21.4%)" (p. 26). If these provisions are inadequate, then the full impact of these excellent services may not be completely realized. The below section explores the trends of computer and Internet adoption among public libraries.

### ***Technological Adoption Trends in Public Libraries***

As of a 2006 report, 98.9% of public libraries were connected to the Internet and 98.4% of those libraries offered Internet access to the communities they serve (Bertot, 2006, p. 25). Once the margin of error is considered in the reporting of these two statistics, it can be assured that currently virtually 100% of public libraries are connected

and providing access to the Internet. The current percentage of connected public libraries is particularly remarkable when it is considered that less than ten years ago only 20.9% of public libraries were connected (Bertot, 2006, p. 10). A 2005 article in *American Libraries* reported a similar dramatic shift in which it was discovered that in 1994 20.9% of libraries were connected to the Internet, but in 2004 this percentage had jumped to 99.6% (Bertot, McClure, & Jaeger, 2005).

Although the overwhelming majority of public libraries are offering Internet access, they are largely only offering it via public access computers for only 36.7% offer wireless access. This low percentage has doubled, however, since 2004 when only 17.9% provided wireless. Because the present study focuses on a county library system in North Carolina, it is of particular note that only 13.7% of North Carolina's public libraries provide wireless access (Bertot, 2006, p. 54); although, North Carolina has the largest percentage of libraries that intend to adopt wireless within a year (Bertot, 2006, p. 48). It is possible that a full 61% of national public libraries may have wireless provisions within the year if they follow up on current plans to incorporate this service (Bertot, 2006, p. 25).

The majority of national public libraries have 12 or fewer public access computers available for public use. The average number of computers in these libraries is 10.7, with rural public libraries only having an average of 7.1. Only 20.7% of these libraries feel that this number of computers is adequately filling patron demands; however, 45.4% of libraries do not have any existing plans to purchase additional computers (Bertot, 2006, p. 2). Libraries in North Carolina constitute one of the highest state percentages with plans to add more computers to their facilities (Bertot, 2006, p. 60). Despite the perceived

inadequacy, these numbers reflect a dramatic increase since 1994 in the number of public computers available at libraries (Bertot, 2006, p. 10).

The average age of public library computers is 2-3 years old with those libraries providing computers less than a year old making up the lowest number of public access computers (Bertot, 2006, p. 33). 72.8% of public libraries do plan to replace some of their computers within the next two years (Bertot, 2006, p. 35). Costs and space constraints are the most severe restrictions preventing the addition of new computers and the upgrading of currently owned computers (Bertot, 2006, p. 36).

Public libraries in the state are open and providing computer access an average of 47.4 hours per week (Bertot, 2006, p. 52). In terms of how sufficiently the computers are meeting patron demands in North Carolina during operating hours, Bertot's (2006) extremely comprehensive report indicates that 16.4% of NC public libraries said they have fewer public computers than patrons who want to use them at any given time during operating hours; 55.2% said that there are only certain times when there are not enough public computers for patrons; and 28.4% said that they have enough computers for all patrons at any given time (p. 77).

Yet another factor considered and reported on in Bertot's (2006) report, is connection speed in public libraries. While this was addressed, Bertot (2006) notes: "It is time to move beyond connectivity type and speed questions and consider issues of adequacy, quality, and the range of networked services that should be available to the public from public libraries" (p. 12-13). He argues that considering the number of computers a library can provide, the IT support the library receives, and a host of other factors should be considered when determining the sufficiency of library Internet

connectivity (p. 16). Nonetheless, it was determined that most libraries have a connection speed of 769kbps (kilobytes per second) or greater (p. 15). Additionally, the majority of national libraries claimed their connection speeds were adequate for their patrons with 53.5% asserting it is adequate all of the time, 29.4% asserting it is sufficient, and 16.1% asserting it is inadequate (p. 25).

Another important factor to address when considering computer and Internet adoption in public libraries is staff training and the availability of computer and Internet training to patrons. If staff and patrons alike are untrained and unskilled in use of computers and the Internet, then the adoption of these technologies in libraries is only of benefit to those with prior experience using them. Just as training exists for use of various library services and tools, so should training exist for these new services and competent staff is essential. However, a study conducted by Gordon, Moore, & Gordon (2004) and cited in a Gates Foundation report (2004) found that slightly less than 40% of public libraries do not offer technological training to staff members (p. 29). This number becomes even more alarming when it is considered that almost two thirds of public use computer users typically ask for help with the computers when they have a problem (Gates Foundation, 2004, p. 21). However, 80% of patrons claim that the assistance with computers received from librarians while in the library is satisfactory, seeming to indicate that a lack of staff training may not be affecting these services in a dramatic way. Alternatively, this could be indicative of patrons having low expectations of the type of computer support they can expect from librarians.

The most current statistic on computer and Internet training availability to patrons comes from Bertot (2006) in which he reported that only 21% of public library systems

reported that they were unable to provide any technological training to patrons. This percentage decreased by 10% since 2004 (p. 17). In North Carolina, only 16.3% of public libraries offer no form of information technology training (Bertot, 2006, p. 95).

These statistics point to strengths and weaknesses in the adoption of computer and Internet access into the range of already existing traditional public library services.

Clearly, wireless access adoption has occurred in a minority of public libraries, although many do plan to adopt this service within the next year, and North Carolina's wireless adoption percentage is particularly low compared to the national percentage. Laptop users whom may take advantage of this service are being underserved. Bringing these users into libraries may make them aware of the many other services the library has to offer them and further increase library support among the communities they serve.

Additionally, wireless access is a relatively recent technological trend indicating that libraries may be lagging behind in the adoption of newer technological advances. As noted in the preceding section, many people feel that the public library will become less important in the wake of Internet access and in the face of further development and expansion of online booksellers and other online information provisions. Libraries must learn to compete against these newer forces in order to remain relevant to the public and the slow adoption of newer technological trends is an indicator that libraries may be incapable of prompt adoption and incorporation of services the public desires.

A second weakness is that only a small number of libraries feel that the computers they do have fill patron needs in an adequate way. Further, almost half of the nation's public libraries do not have any plans to purchase additional computers with space and cost restraints cited most frequently as the reasons behind this. Funding and budgetary

issues (addressed in a preceding section) make it likely that these restraints will remain intact.

A final weakness is the lack of public library staff training in technology. Many of the potential effects this can have on technological services in public libraries are noted in a preceding paragraph; however, it is also important to emphasize that technology is not stagnant. Constant training will be necessary to keep staff up-to-date with new advances so that they may always be able to assist patrons.

On the other hand, the above statistics also indicate strengths in the relatively recent change in technological services provided by public libraries. Virtually every national public library has adopted the Internet and offers access to it. Additionally, though wireless access is a concern, many libraries plan to provide this service within the next year. Further still, the majority of libraries, though unable to add computers, do plan to replace existing computers in the next two years and computers are available to the public most of the time during operating hours. Finally, most libraries feel their connection speeds are at least sufficiently meeting patron demand.

### ***Gaps in Computer and Internet Access Among the Public***

“Digital divide” is a term that

patterns of unequal access to information technology – particularly computers and the Internet – based on income, ethnicity, geography, age, and other factors. Over time it has evolved to more broadly define disparities in technology usage, resulting from a lack of access, skills, or interest in using technologies (Gates Foundation, 2004, p. 2).

The concern is that universal access to a significant information resource is not assured for certain individuals and may further perpetuate significant existing societal divisions or, perhaps, create new ones (Gates Foundation, 2004, p. 6). There are obvious benefits to computer and Internet access such as access to job opportunities, unemployment

benefits, health information, and a wide range of other services, information, and opportunities that can be had via computer and Internet use. Additionally, skills with computers and the Internet are often learned while using them. Even though a large number (71%) of adults are currently using the Internet (Pew Internet and American Life Project, 2007), there is still a significant number still do not. The number of Internet users is constantly on the rise; however, a look at the population not using the Internet reveals that this group, though smaller, has remained the same in ethnicity, educational, age, income, and geographical characteristics as reported when the digital divide was initially brought to national attention (Gates Foundation, 2004, p. 8).

Exploring divisions in computer and Internet access reveal that significant racial differences exist. In particular, African Americans, Native Americans, and Latinos, already known as “traditionally disadvantaged” groups, do not access (usually due to lack of skills or anxieties associated with lack of skills) or may not have access to computers and the Internet (Gates Foundation, 2004, p. 2). Latinos make up 14% of the adult population in America and a little over half of this group, 56%, uses the Internet (Fox & Livingston, p. i). In contrast, 73% of whites and 62% of African Americans go online (Pew Internet & American Life Project, 2007). The factors that account for this disparity between Latinos and other ethnicities are largely low education levels and limited facility with the English language. Only 31% of Latino adults without a high school diploma use the Internet and only 32% of Spanish speaking Latinos use the Internet. On the other hand, 89% of Latinos who graduated from college and 70% of Latinos with a high school diploma use the Internet, and 78% who speak English and 70% who are bilingual use the Internet (Fox & Livingston, p. i).

As noted above, 62% of African Americans are online constituting the second smallest ethnic group online behind Spanish speaking Latinos. Education level and age seem to be the most significant factors in determining online use among this group. Only 25% of African Americans without a high school diploma use the Internet forming the ethnic group with the smallest number of members whom do not possess a high school diploma and are not online (Fox & Livingston, p. i). African American college graduates, though, form the largest group online at 93%. The percentage of African Americans aged 18-29 using the Internet is exactly the same as that of whites (77%); however, African Americans aged 71 and older form the smallest of this age group online at only 7% (Fox & Livingston, p. iv).

The statistics just reported regarding these two ethnic groups also reveals quite a bit about whites. Whites constitute the largest ethnic group online (73%, reported above). As with African Americans, education level and age appear to be factors determining Internet usage. Ninety one percent of white college graduates use the Internet, whereas only 32% without a high school diploma use the Internet. As reported above, 77% of whites aged 18-29 use the Internet, while 27% aged 71 and older use the Internet (Fox & Livingston, p. iv).

Other characteristics of those not using the Internet include age differences and household income. Only 32% of Americans aged 65 and older use the Internet. Additionally, those households where income is \$30,000 and less per year only make up 55% of Internet users. As age decreases and income increases, so does the percentage of Internet users (Pew Internet & American Life Project, 2007).

According to the Gates Foundation (2004), seniors (those aged 55 and older) are the fastest growing group of Internet adopters (p. 1-2). However, Fox (2006) notes that “most of the growth in this group over the last few years has come from long-time Internet users in their early sixties aging into senior status as the number of users aged 70 and older has not increased since 2005” (p. 1). Seniors using the Internet are typically white, well educated, and have high incomes (Fox, 2004, p. i).

Persons living in rural areas tend to access computers and the Internet the least when compared to people located in urban and suburban areas. Only 60% of persons living in rural areas access the Internet compared to 73% in both suburban and urban areas (Pew Internet & American Life Project, 2007).

In short, the above statistics reveal that most of those who do not use the Internet are either Latino or African American, are not well educated, have lower incomes, are of senior citizen age, and live in rural areas. Fox (2005) found that, overall, 22% of adults in the United States do not use the Internet (p. i).

While it is useful to know who is typically considered digitally divided, it is of even greater value to understand some of the barriers to computer and Internet access. American adults who do not use the Internet do not do so because it is either their choice or because of other factors that prevent access. A lack of interest and attitude that the Internet has nothing to offer are the most typically given reasons for choosing not to use the Internet. In terms of barriers, 46% of nonusers indicated that “the Internet is too complicated and too hard to understand” and 48% reported that cost of access is a problem. Others noted that they were embarrassed about their lack of skills and knowledge and did not feel that they would be capable of learning the skills to utilize

computers and the Internet. This has led to the conclusion that there are certain conditions that must be present for a person to decide to use the Internet: first, an adult must be able to access computers and the Internet; second, an adult must feel they have the appropriate skills and/or knowledge necessary to use computers and the Internet; and, third, an adult must have the willingness and desire to learn how to use computers and the Internet (Gates Foundation, 2004, p. 9).

A lack of access to adequate technological provisions in rural areas may be the root of the problem of the lack of computer and Internet use by rural dwellers. It has been reported that rural libraries have fewer public use computers, lower connection speeds, and are less likely to provide wireless access (Bertot, 2006, p. 2). Considering close to 80% of public library systems serve rural locales (Gates Foundation, 2004, p. 5) and rural areas typically have populations that are poorer and less educated (p. 23), it is apparent that a significant number of libraries are responsible for a significant number of the digitally divided that are being inadequately served.

So, then, whose responsibility is it to fill these technological access gaps? Public Agenda Foundation et al. (2006) discusses community leaders' expectations that libraries should be bridging the digital divide as they are "skilled at reaching underserved populations" (p. 38). Additionally, a National Telecommunications and Information Administration report (cited in Gates Foundation, 2004) asserts that schools and libraries should be active in bridging the digital divide. According to this report, public libraries are in the position to solve this problem because of their openness and accessibility to community residents, their traditional mission and purpose of providing lifelong learning

opportunities to their communities largely free of charge, and their position by law to serve approximately 97% of the American population (p. 12).

As noted in a previous section, the public also believes it is the job of the public library to provide computer and Internet access. But even further, it is clear that the public, the digitally divided, and librarians alike also believe that the purpose of this service is to bridge gaps in technological access. According to Public Agenda Foundation et al. (2006), the majority of people feel that the government should support computer and Internet access in public libraries “so that low income people can have access to the Internet” (p. 11). In fact, the general public questioned in this report were more likely to favor the provision of computer and Internet access in libraries than to support “the individual purchase of computers for low income Americans” (p. 27). Those without many computer skills and less education (i.e. the digitally divided) tend to support the provisions of computer and Internet access even more strongly than those with skills and higher incomes (Public Agenda Foundation et al., 2006). Finally, three quarters of librarians in response to a qualitative question in Bertot’s (2006) survey responded that “the most important social roles of the Internet access provided by public libraries remain access for those who would not otherwise have it and help for those who need assistance with the Internet” (p. 17-18).

Not only is it clear that most people feel strongly that libraries should be bridging the digital divide, there is plenty of evidence that the digitally divided, as well as those not digitally divided, are utilizing their public libraries for computer and Internet access. Seventy three percent of American adults have regular access to the Internet, but 40% of these either have access via slow connections (e.g. dial-up), are infrequent users, or are

nonusers that live with a user (Fox, 2005, p. i). Because public libraries typically have faster connections and free access, they are viable alternatives for those who fall within this 40%. The places in which Internet users access the Internet include their homes, workplaces, schools, friend's or neighbor's house, libraries, and relative's houses. As of 2004, approximately four million people a day access the Internet from some place other than home or work (Harwood, 2004, p. 1). Public Agenda Foundation et al. reports that the majority of the American public access a computer from their home, workplace, or school on any given day and one third of those surveyed said they had accessed the Internet from a public library (2006, p. 28). Further, the report found that public libraries served as both places of first and last resort for the public in accessing the Internet (p. 17-18). The Gates Foundation (2004) found that, of locations other than home, public libraries come in fourth as the place where people access the Internet with work, school, and another's home coming before them (p. 15). Only 3% of Internet users only have access to computers and the Internet in places other than their homes; however, these users are typically living in low income households, living in rural areas, and are recent adopters of the Internet (Harwood, 2004, p. 1).

People that rely on or frequently use public library computers are typically not white, do not have a high school diploma, and are predominately aged 25-34. African Americans comprise 18.7% and Hispanics comprise 13.8% of those who rely on public library computers for access (Gates Foundation, 2004, p. 18). Persons without a high school diploma are also far more likely to only have access to a computer and the Internet from a public library (Gates Foundation, 2004, p. 20). Finally, those aged 25-34 are the most likely to access computers and the Internet from other places including libraries.

Seniors, an identified segment of the digitally divided, are the least likely to go online from other places like libraries (Harwood, 2004, p. 3).

### ***Budgetary and Funding Issues in Public Libraries***

The preceding section indicates that there is evidence that libraries are providing computer and Internet access to the digitally divided. Also, regardless of the extent to which libraries serve the digitally divided, it is overwhelmingly clear that the general public, community leaders, and librarians feel strongly that public libraries should be the institutions to bridge technological gaps in access. However, budgetary and funding challenges and crises are constantly faced by public library administrators and staff, seriously jeopardizing the continued provision of technological services. Bertot (2006) reports that almost 45% of public libraries had a decrease in budget or flat funding since the last fiscal year. As he states, “Given inflation and increased personnel and benefits costs, flat funding equates to a cut in funding” (p. 2). Considering the host of traditional library services still offered and the somewhat recent addition and expansion of expensive technological services, it is obvious that public libraries budgets are strained to keep up with the technological demands and needs of the communities they serve.

If libraries are only capable of providing a “bare minimum” of technological services Bertot (2006) points out two detrimental effects this will have on libraries and the digitally divided: first, it will turn public libraries into places of “last resort” for technological access; and, second, perpetuate current gaps in technological access (p. 5). Bertot (2006) also noted that the quality of technological access provided to the public varies widely between under funded and well-funded libraries (p. 25). Further still, the

increasingly urgent need for libraries to remain relevant in this changing technological time makes it essential that public libraries provide top of the line computer and Internet services. This includes Internet and wireless access, an adequate number of computers, computers in good working condition, fast connection speeds, and more. As the Gates Foundation (2004) points out, there will always be a need for funding to provide support for “hardware and software upgrades, Internet connectivity, keeping systems running, and staff training” (p. 5).

As technology advances, new equipment, staff expertise, and patron training will also need to be expanded. Particularly in the wake of the expansion of Web 2.0 applications, content uploading and user creation of content will continue to become more and more important to Internet users. Content uploading requires certain equipment such as scanners and digital cameras, as well as staff familiarity with this equipment and the applications that can be used in conjunction with them. Users can create content with wikis and blogs among other things. Patrons themselves may have a demand to learn how to use these applications and public libraries would be at a significant advantage to one day be able to offer these kinds of services and assistance with these services.

Alternative funding sources other than the local governments that typically support public libraries are extremely limited. The E-rate program is a program that has been helping schools and libraries with telecommunications costs such as connectivity to the Internet (Universal Service Administrative Company, 2006). This program is noble in its cause, but the complicated application process and limited discount available to some libraries are often cited as reasons public libraries do not apply for this funding (Bertot, 2006, p. 91). In fact, “between 60.4% and 95.6% of library systems do not receive E-rate

discounts” (Bertot, 2006, p. 42). This high number suggests that few libraries receive any benefit from this program.

Certainly a way to ensure that public libraries continue to receive funding, and perhaps even more funding than they have received in the past, is to make sure communities fully support them and vocalize that support. Public Agenda Foundation et al. (2006) found that “community soldiers” are likely to rate public libraries high in their performance and typically consist of volunteer workers, civic organization members, and donors to charities whom vote and are older than 40 (p. 29). These so-called soldiers would be excellent voices for the nation’s public libraries. Public Agenda Foundation et al. (2006) also discovered that “...1 in 3 people under 30 say a library’s closure would affect only a few people in the community...But they are also the most likely group to have used the Internet at the library” (p. 30). It is alarming that these individuals do not feel a library’s closure is particularly meaningful. Attempts to reach out to this group and help them realize the full benefits public libraries can and do provide to their communities are necessary.

### ***Rationale of the Present Study***

One way in which public libraries can justify their continued funding and elicit further community support is to become knowledgeable about the gaps in computer and Internet access they fill. Wexter (2006) and her colleagues conducted a web-based survey of computer users in the Baltimore County Public Library System (BCPL) to not only evaluate the current services being offered and find out about other services their community members might like to see offered in the future, but also to find out if the county’s libraries were serving the digitally divided. The results of her study helped

library administrators and staff consider and revise current policies and services as well as create and consider the creation of new ones. Additionally, Wexter (2006) found that BCPL was providing access to those who genuinely need it.

Wexter's (2006) study is an important one that provides a model for the present study. An adaptation of the survey she used was used in this study. Conducting studies like Wexter's (2006) will provide public libraries with a dataset that can prove to library funders the worth of the public library and justify its continued funding. Additionally, this study can be run extremely inexpensively and with little extra work for administrators and staff. This is only one small step in arguing the case for public libraries, but, nonetheless, an invaluable one.

## **Methodology**

### ***Introduction***

A paper-based survey was placed at each OCPLS location and was filled out by patrons whom had just finished using a public use computer and were 18 years of age or older. The survey (see Appendix A) inquired about the participant's actions while in the library, reasons for using the library's computers, frequency of use of the computers, wait time for use of a computer, satisfaction with and usage of the computer and general services, desired services that are not currently offered at the OCPLS locations, satisfaction with library staff, knowledge of computers, access to computers outside of the OCPLS locations, and demographics including education level, age, gender, and ethnicity. The responses to the survey were recorded and analyzed to create profiles of computer user groups.

### ***Orange County Public Library System***

The Orange County Public Library System (OCPLS) is comprised of one main library and three branches: Carrboro Branch Library and Carrboro Cybrary Branch located in Carrboro, North Carolina, and Cedar Grove Branch Library and Orange County Public Library (main library) located in Hillsborough, North Carolina. These libraries serve the population of Orange County, North Carolina, which, as of 2006, had a population of 120,100 (U.S. Census Bureau, 2006). However, it is notable that OCPLS

only has locations in Carrboro (population 16,425) and Hillsborough (population 5,382) though the towns of Cedar Grove (population 1,970), Chapel Hill (population 49,543) and Efland (population 3,206) are also located within the county (U.S. Census Bureau, 2005a, 2005c, 2000a, 2005b, 2000c, respectively). Chapel Hill Public Library, a municipal library with a small allocation of funds contributed by the county, serves Chapel Hill, and Cedar Grove Branch Library is intended to serve both Cedar Grove and Efland as it is located in closest proximity to these towns.

Public use computers are available at all OCPLS libraries: Carrboro Branch Library has four; Carrboro Cybrary Branch has five; Cedar Grove Branch Library has four; and Orange County Public Library has ten, including one that is located in the North Carolina Room and is intended for genealogical research. All of these computers have at least the Microsoft Office Suite, Internet Explorer, and Adobe Reader downloaded on them, with a few of them having more specialized programs such as Adobe Photoshop. Connection speeds at the OCPLS libraries are 512kbps at Carrboro Branch Library and Orange County Public Library, and 384kbps at Carrboro Cybrary and Cedar Grove Branch Library (R. Griffin, personal communication, June 25, 2007).

OCPLS is a unique and small system whose manager recommended budget for 2007-2008 is \$1,326,692. This manager recommended budget is divided so that Carrboro Branch Library receives \$138,173, Carrboro Cybrary Branch receives \$81,639, Cedar Grove Branch Library receives \$106,072, and Orange County Public Library receives \$750,775 (Orange County Budget Office, 2007). Orange County Public Library receives E-rate funding for its telephone line, but does not receive discounts or funding for its Internet connection. Orange County Public Library has not applied for funding for

its Internet connection because this connection is funded by the county IT department, a distinct entity not part of the library system. The other branches have not applied for E-rate largely because the discount amount would not justify the lengthy application process, or they have arrangements with other organizations that either provide them with or share the cost of telephone and Internet service (R. Griffin, personal communication, June 28, 2007). The budget figures indicate the financial constraints under which OCPLS operates and the inherent difficulties such constraints place on the provision of optimal computer services. However, the OCPLS budget has increased steadily since the 2003-2004 fiscal year (Orange County Budget Office, 2006).

OCPLS has dealt with these constraints and difficulties in a remarkable way, which is illuminated best by examining the spaces and service provisions of each of the branches. The Carrboro Branch Library (CBL) is located in McDougle Elementary and Middle Schools. The schools along with this branch all share one space, with CBL only open on weekday late afternoons and evenings and on weekends so that the schools may operate the library during school hours. In comparison to the other two branches, CBL is a much larger facility with a larger circulating collection and less emphasis on computer and Internet access. CBL does not have wireless access.

The Carrboro Cybrary Branch is located in the heart of downtown Carrboro in the Century Center, which also houses the Carrboro Parks and Recreation Department and the Carrboro Police Department. The Cybrary is largely open when CBL is not, operating in the weekday daytime hours and on Saturdays, to supplement the hours CBL cannot be open. The Cybrary houses a very small collection of adult materials and the emphasis is placed on computer, Internet, and wireless access for adults.

Cedar Grove Branch Library (CGBL) is a small room located in the Northern Human Services Building. CGBL's operations and service provisions are similar to that of the Cybrary's in that the emphasis is also on computer, Internet, and wireless access for residents located in the north of the county. However, CGBL's small collection also includes children's materials.

Orange County Public Library (OCPL) is the main county library with the largest circulating collection of the four libraries. It occupies its own space, though some county offices occupy the bottom floor, and within the next few years it will be relocating to an even larger space. OCPLS operates the most extensive hours per week. They offer computer, Internet, and wireless access.

### ***Participants***

Participants were largely Orange County residents possessing OCPLS library cards. However, OCPLS offers computer use only library cards as well as full use library cards. In order to obtain a full use library card, library patrons must show proof of Orange County residence as well as a photo ID. A computer use only card does not require Orange County residence. Therefore, it is anticipated that some participants may reside outside of the county. Participants were all volunteers of age 18 years or older whom opted to complete the survey after utilizing one of the public use computers in one of the OCPLS libraries. The study was limited to those age 18 years or older due to the difficulties associated with gaining sufficient consent of minors for the satisfaction of the Institutional Review Board (IRB).

### ***Survey***

A paper-based survey (Appendix A) adapted from Wexter's (2006) web-based survey was utilized for this study. The survey was distributed on paper as per the requests of the OCPLS administration. One of the difficulties with a web-based survey at OCPLS is caused by the time limit placed by PC Reservation on a patron's computer session. Patrons are limited to 30-minute computer sessions when there is a wait for the computers. The original proposal for this study was to use a web-based survey with computer users being prompted to take the survey via a dialog box. However, because the survey could take as long as 15 minutes to complete, the administration believed there was risk of a low response rate, as the survey could take potential respondents up to half the time of their session to complete. A paper-based survey was used instead to combat this risk.

Some of the fixed responses were reworded either for clarity or to coincide with OCPLS service offerings. For example, in question 12 of Wexter's survey (2006, p. 38) the question and fixed responses were altered (question 8, Appendix A). Wexter's question 12 reads, "What is your knowledge level for using a computer?", and the fixed responses range from "very low" to "very high". Question eight in the present survey reads, "How skilled are you at using a computer?", and the fixed responses range from "very unskilled" to "very skilled". It is the opinion of the researcher that the question and fixed responses used in this adaptation are clearer. An additional example is the exclusion of "Check out E-books" (Wexter, 2006, p. 38) in question 1 (question 3 in Appendix A). The ability to check out e-books is a recent service addition to OCPLS's offerings and it is not anticipated that this will be a frequent reason participants use the public use computers. A further reason for this is that any modification that could

reasonably be made to produce a shorter survey was acted upon to ensure brevity and increase response rates.

Additionally, two questions used in Wexter's (2006) study were excluded: questions six and seven (p. 38). Every computer user at OCPLS must enter in a library card number to use the computers and, therefore, it was unnecessary to ask question six. Question seven was subsequently thrown out as it is a follow-up to question six. Further still, it is not of interest whether participants reside inside or outside of the county as the study's purpose is to gauge OCPLS's service provisions regardless of who it is that takes advantage of these provisions.

Finally, questions regarding ethnicity and gender were also included in this adaptation so a more thorough analysis of the extent to which OCPLS is bridging the digital divide could be gauged, as ethnic and sex differences are frequently described when discussing the digital divide. The ethnic categories chosen were those used by the U.S. Census Bureau (2000c).

### ***Procedure***

Signage (see Appendix B) was placed near the public use computers at each OCPLS location indicating the presence of the survey, the estimated time it would take to complete the survey, and the eligibility requirements. A sign (see Appendix C) was also placed at the circulation desk above a folder where the blank surveys and fact sheets about the study (see Appendix D) could be found. This sign was similar to the one in Appendix B, but it additionally noted that participants should read and keep the fact sheet and return the completed survey to the circulation desk.

A folder was placed behind the circulation desk at each OCPLS location in which completed surveys were to be collected. Participants returned the completed surveys to OCPLS staff members at the circulation desk and staff members were instructed to place the surveys in the folder behind the desk. It was requested that the staff members not read the surveys and promptly place them in the folder. The fact sheet requested that the participants fill out the survey while in the library after they had used one of the public use computers. Answers to the survey were completely anonymous and no identifying information was collected on the survey. Participation in the survey was entirely voluntary.

The investigator continuously picked up completed surveys from OCPLS locations during the seven-day period in which it was available in order to begin data entry. The seven-day period included weekdays and weekends.

The generalizability of this study will be highly dependent on the number of responses received. In order to truly know how well OCPLS is filling technological gaps, a broad sample of computer users will be required from each library. Wexter's (2006) survey elicited a high response rate, and, therefore, BCPL was

### ***Analysis***

The fixed and open-ended responses to the survey were recorded in an Excel spreadsheet. The goal was to analyze data to create profiles of participants based on computer access outside of the OCPLS locations, age, education level, ethnicity, and gender. Satisfaction levels with services and staff, adequacy of service provisions, and overall self-reported comfort level with computers were also to be assessed by OCPLS location. This paper and the open-ended responses recorded in the Excel spreadsheet

were submitted to the OCPLS location they pertained to in order for OCPLS administration and staff to review and modify existing and create new policies and services.

## Results and Discussion

A total of 21 responses (11 from Carrboro Cybrary; 5 from Cedar Grove Branch Library; 3 from Carrboro Branch Library; and 2 from Orange County Public Library) were received. Because the response rate was low, it was not worthwhile to profile the branches individually as was an original goal of the study. Rather, the data was taken as a whole and analyzed as such.

### *Staff and Services Satisfaction*

The questions used in this survey asked about patron satisfaction levels with OCPLS staff and services as well as about access levels and demographic information. The findings regarding staff and services will be presented first.

In response to question four (see Table 1), most respondents reported that they use the OCPLS computers more than twice a week, with the majority of other respondents using them once a month or less. This indicates that the majority of the respondents are frequent users of the OCPLS libraries.

**Table 1. Frequency of OCPLS Computer Use**

Question 4: "About how often do you use the computers at this library?"	Number of respondents (n=21)
This is my first time	0
Two or more times a week	15
Once a week	1
Once a month	3

Less frequently than one time a month	2
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Many of the respondents did not wait for a computer, and, for those who did wait, most did not wait longer than 15 minutes. This is indicative of a satisfactory number of public use computers at the OCPLS libraries, though three of the four libraries provide access to fewer computers than is the average for national rural public libraries (7.1; Bertot, 2006, p. 2).

**Table 2. Length of Time Respondents Waited for a Computer**

Question 5: "How long did you wait for a computer?"	Number of Respondents (n=21)
0 Minutes	10
Less than 15 minutes	7
Between 15 and 30 minutes	4
More than 30 minutes	0

All of the respondents indicated that their experience with the libraries' computers was at least "good." The responses available ranged from "poor" to "excellent." This indicates that the respondents are pleased with the computers and computer programs offered by OCPLS; however, it is also notable that five respondents only deemed the services fair. The fact that no respondent indicated that he or she was a new computer user also speaks well for the data that did get collected in this survey, despite the low response rate.

**Table 3. Respondent Experience When Using the Computer**

Question 6: "How is your experience when you use this library's computers?"	Number of Respondents (n=21)
Poor	0
Fair	5
Good	3

Very good	7
Excellent	6
This is the first time I have used this library's computers	0

Only two respondents reported that they had taken computer classes offered at Carrboro Branch Library or Carrboro Cybrary. This could suggest that respondents are unaware of the classes, the classes are too basic for them, the class times are inconvenient, or respondents are uninterested in taking computer classes. The classes offered at these two OCPLS locations are offered in conjunction with the Community Workshop Series, a program sponsored by the University of North Carolina at Chapel Hill Libraries. The Community Workshop Series provides introductory computer and Internet classes, such as Introduction to Computers, Introduction to Microsoft Word, and Web Basics (an introduction to the Internet). The nature of these classes and the revelation that few respondents have attended them may indicate that the respondents are not part of the population typically referred to as the digitally divided, as they perceive themselves as skilled enough not to take them. It could also be the case that the frequency in which they use the OCPLS computers has given them an adequate skill set that would not be complemented by extremely basic computer classes.

**Table 4. Respondents Who Have Taken an OCPLS Computer Class**

<b>Question 9: "Have you ever attended a computer class at the Carrboro Branch Library or Carrboro Cybrary?"</b>	<b>Number of respondents (n=21)</b>
Yes	2
No	19

As expected, 18 of the respondents have asked a librarian for assistance with the computers. This is consistent with the statistic cited above that two-thirds of public

library computer users ask librarians for assistance with the computers (Gates Foundation, 2004, p. 21). It is a good reflection on the part of OCPLS staff members that the respondents feel comfortable requesting assistance from them.

**Table 5. Respondents Who Have Requested Help with the Computers**

Question 10: “Have you ever asked the staff for help with the computers?”	Number of respondents (n=21)
Yes	18
No	3

Another good reflection of OCPLS staff is that none of the respondents who requested help with the computers were displeased with the help they received. All respondents reported that the librarian from whom they requested assistance was “helpful” or “very helpful.” This is consistent with the statistic cited above that 80% of public library computer users who requested help with a computer were satisfied with the help they received (Gates Foundation, 2004, p. 21); however, as pointed out earlier, this could reflect low expectations of the capacity of librarians to answer computer questions.

**Table 6. Helpfulness of OCPLS Staff in Answering Respondents' Questions**

Question 11: “If you answered ‘Yes’ to the above question, how helpful were the library staff in answering your questions?”	Number of respondents (n=18)
Not helpful	0
Somewhat helpful	3
Helpful	2
Very helpful	13

The majority of respondents reported that they “always” or “usually” get the items or services they want when they come to the library. Again, this reflects well on the services and materials OCPLS provides in that respondents get what they want, or at least what they expect, from the library most of the time.

**Table 7. How Often Respondents Receive Items or Services They Want**

Question 12: “When you come to the library, how often do you get the items or services you want?”	Number of respondents (n=18)
Never	0
Rarely	0
Sometimes	2
Usually	6
Always	10

The majority of respondents gave the customer service they receive from staff while in the library a rating of “good,” “very good,” or “excellent.” Clearly, respondents are pleased with OCPLS staff members.

**Table 8. Respondents' Rating of OCPLS Staff Customer Service**

Question 13: “When you come to the library, how is the customer service you receive?”	Number of respondents (n=21)
Poor	0
Fair	2
Good	3
Very good	8
Excellent	8

The majority of respondents reported that they planned to either read leisure materials (e.g. newspapers, magazines, etc.) or borrow or reserve a book while at one of the libraries. Some respondents intended to do nothing else while in the library or planned to ask a librarian for help in finding information. An even smaller set of respondents said they would borrow or reserve a movie or music material or attend a children’s event or class.

It is interesting that OCPLS libraries have computer users that take advantage of other, more traditional library services. This may suggest that computer users are being lured into other services while at the library to use a computer, or that traditional-service

users are taking advantage of the computers while already in the library for other purposes. Overall, it surely indicates that OCPLS libraries are providing a wide range of services that computer users take advantage of as only four responded that they intended to do nothing else while at the library.

**Table 9. Other Activities Performed by Respondents While at the Library**

<b>Question 15: “What else will you do/did you do while you are/were at the library today?”</b>	<b>Number of respondents (n=21)</b>
Borrow or reserve a book	8
Borrow or reserve a movie or music material	2
Attend a children’s library event or class	2
Attend an adult’s library event or class	0
Attend a non-library event or class	0
Do research with resources other than the computer	1
Read leisure materials (e.g. newspapers, magazines, etc.)	12
Ask a librarian for help in finding information	2
Sign up for a library card	1
Sign up for an event or class	0
Nothing else	4
Other	1*

\* “Use phone and restrooms” was specified as “other” at Carrboro Cybrary

### ***Bridging the Digital Divide***

The table below indicates the computer activities respondents perform most frequently while at the libraries. As anticipated, many use the Internet to read or write email. This is consistent with Fox and Madden’s (2005) findings that nearly 90% of Internet users receive or send email (p. 1). Another popular activity for respondents was browsing the Internet; all other computer activities were infrequently reported.

**Table 10. Computer Activities Performed by Respondents**

<b>Question 2: “For what purpose(s) did you use the library’s computer today?”</b>	<b>Number of Respondents (n=21)</b>
Browse the Internet	15
Read or write email	14
Use the printer	4

Look for or apply for a job	3
Learn more about personal interests	3
Get information for my job	3
Read the latest news, sports, etc.	3
Search the library online catalog	3
Search for or purchase goods or services	2
Search an online database	2
Reserve items in the library online catalog	2
Do homework assignments	2
Participate in online chat	1
Use word processing (e.g. Microsoft Word) or spreadsheet (e.g. Microsoft Excel)	1
Other	1*

\* Other was not specified

The question regarding the primary reason OCPLS patrons use the public use computers proved problematic. It was requested that participants select only one response; however, four respondents selected more than one response to this question. The low response rate prompted the inclusion of these responses, regardless of the selection of more than one response.

The majority of respondents reported that they access the public computers at OCPLS because these are the only places they have access to a computer. This would seem to indicate that OCPLS is filling a significant gap in access for several of the respondents, but the responses to question 20, in which respondents were asked to indicate whether they have access to a computer, showed an inconsistency in responses and will be discussed later in this section. Two other reasons for use—better speed and quality of OCPLS computers compared to others they could use and convenience of OCPLS location—were less frequently selected responses.

**Table 11. Primary Reasons Respondents Use OCPLS Computers**

Question 3: “What is the <i>primary</i> reason you use the library’s computer?”	Number of respondents (n=21)
This is the only place I have access	9
The computers here are faster and/or better than the	6

computers I could use	
It is the most convenient location	5
Access is free	3
Other	4*
I am already at the library for other reasons	1

\* “Other” specified as:

- 1) “I do like the relative [sic] smallness of the environment [sic] and the staff are always curious [sic] and helpful”
- 2) “I have a wonderful setup at home – I have no Internet [sic] access where in area where I live [sic]”
- 3) “To search their [the library’s] catalog”
- 4) “The closest place that I have access to the [sic] Internet when I’m down here [sic]” were specified as other

Only one of the respondents indicated that he or she is not skilled with computers.

All other respondents said they were moderately to very skilled with computers. This response may be expected as it was noted in the literature review that many who perceive themselves as unskilled or unable to become skilled do not use the computers. However, many who are unskilled with computers are digitally divided and it should be the interest of OCPLS to appeal to these individuals.

This does not necessarily indicate that respondents are not digitally divided.

Many reported that they use OCPLS computers frequently; therefore, perhaps these respondents have increased their skills with regular use of OCPLS computers. Another problem with the assumption that these respondents are not members of the digitally divided is that this is a self-report of computer skills: five respondents reported they have access to a computer at no other place (see Table 13), but only one of these five also reported that he or she is an unskilled user. Considering this lack of access, it may actually be that these respondents, at least, are less skilled than they believe themselves to be.

**Table 12. Computer Skill Level of Respondents**

Question 8: “How skilled are you at using	Number of
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<b>a computer?"</b>	<b>Respondents (n=21)</b>
Very unskilled	1
Unskilled	0
Moderately skilled	6
Skilled	11
Very skilled	3

The demographic information collected by the survey revealed that the majority of respondents were between 40-54 years of age, male, white, and held bachelor's degrees. The majority of other respondents were either aged 18-29 or 55 and older, female, African American, and either had a higher degree or had attended some college. Therefore, the majority of respondents do appear to be in a different group than those typically defined as digitally divided.

Despite this, it is notable that a fair number of African Americans and persons aged 55 and older access OCPLS computers. African Americans are included in the digitally divided group so it is possible that OCPLS computer services may be bridging some of the technological gaps for this ethnic group in their communities. Also, some of the respondents were aged 55 and older, an age group that is also digitally divided, so it is possible OCPLS is filling their access needs as well.

Only one respondent identified him- or herself as Hispanic and one other identified him- or herself as "Hispanic/White," despite the findings of the North Carolina Institute of Medicine that North Carolina has been identified as having the fastest growing Hispanic/Latino population in the nation (North Carolina Institute of Medicine, 2003, p. 7). As described earlier, Latinos are a significant part of the population of the digitally divided. It might have been expected that the OCPLS libraries located in

Hillsborough would have fewer Latino respondents as Latinos comprised only 2.8% of the town's population as of 2000 (U.S. Census Bureau, 2005c); however, it was essentially an even split with the one respondent reporting "Hispanic/White" as his or her ethnicity having completed the survey at Cedar Grove Branch Library, and the other self-identified Hispanic having completed the survey at the Cybrary. Carrboro had a 12.3% Latino population as of 2000 (2005a), so it is particularly disappointing that so few Latinos completed a survey at CBL and the Cybrary.

**Table 13. Demographic Characteristics of Respondents**

Demographic characteristic	Number of respondents (n=17)
<b>Question 16: "What is your age?"</b>	
18-29	4
26-39	2
40-54	7
55 or older	5
<b>Question 17: "What is your gender?"</b>	
	(n=20)
Male	11
Female	9
<b>Question 18: "What is your ethnicity?"</b>	
	(n=20)
Black/African American	5
Hispanic	1
White	13
Other	1*
<b>Question 19: "What is the highest level of education you have completed?"</b>	
	(n=17)
Lower than 12 <sup>th</sup> grade	2
High school or GED	2
Some college	4
Bachelor's degree	6
Higher degree	3

\* "Hispanic/White" specified as "other"

Four of the respondents who answered that they only had access to a computer at the library then went on to answer that they did, in fact, have access elsewhere in another question. However, none of the four answered that they had home access; rather, these

respondents reported they had access from school, work, or a friend or relative's house. It seems that the first fixed response to question three should be reworded to read "This is one of the places I have access to a computer," as this seems to be how these respondents interpreted it.

Many of the respondents reported that they have home access to a computer. A significant number answered that they have access at a friend or relative's house, and still others answered they have access nowhere else or at school. The fewest number either answered other or work. Those who responded other listed:

- 1) "Other libraries"
- 2) "Chapel Hill Public Library"
- 3) "UNC Davis Library, Undergrade [*sic*] (science library), Chapel Hill Public Library".

It is interesting that those responding "other" listed other libraries as their points of computer access. This suggests that these respondents are heavy library users and rely on area libraries to provide them with computer access.

Those respondents who have home access are clearly not part of the digitally divided; however, this question did not ask about Internet access at home and it is possible that some may only have this access in places like the library. It does seem that OCPLS libraries may be filling some technological gaps as a few did indicate they have computer access nowhere else. Further, the four who were inconsistent in their answer to questions three and twenty only have access from school, work, or a friend or relative's house, suggesting that they rely on OCPLS libraries for another point of access.

**Table 14. Other Places Respondents Have Access to a Computer**

Question 20: "Where do you have access to a computer besides the library?"	Number of respondents (n=21)
Home	10
Work	3
Friend or relative's house	7

School	5
Other	3*
Nowhere else	5

\* “Other libraries”, “Chapel Hill Public Library”, and “UNC Davis Library, Undergrade [*sic*] (science library), Chapel Hill Public Library” specified as other

### ***Open-ended Question Responses Regarding Services***

Respondents were given the opportunity in question seven (see Appendix A) to indicate other services and programs they would like the library’s computers to have.

Responses included:

- 1) “Email from programs (such as job site) – Outlook”
- 2) “True access to townofcarrboro.org....[and] better headsets (currently of low quality)”
- 3) “Games”.

The Outlook and townofcarrboro.org (comments one and two above) requests are perhaps a little difficult to make sense of, as it is impossible to see the way in which these patrons were trying to utilize this program and site to determine if access to these is a real issue.

Newer headsets (comment two above), however, could definitely be purchased by OCPLS, and, though the patron that made this request was using a computer at CGBL, I know that the headsets at the Cybrary are also in poor condition.

Games (comment three above) are available via the Internet on the OCPLS computers so it is difficult to understand this request. The problem for this respondent may be that games are not installed on the computer hard drives, or, perhaps, he or she may not understand how to access them.

Other responses to this question included:

- 1) “There are often problems and the librarians always say, ‘We know we’ve asked the technical people to correct it’ for ex [*sic*], slow computer”
- 2) “I would just like more computers available”
- 3) “Coffee shop”

- 4) "Later hours"
- 5) "No time."

In regard to the first comment, it would be of interest to understand whether or not the respondent is referring to the Internet connection or to the computers generally. This way, the librarians at the Cybrary (the respondent was using a computer at this branch) could determine if it is an issue of Internet connection speed or an issue with the computers themselves.

The second comment listed above may indicate that, though wait times are short, OCPLS libraries are still in need of additional computers. As described above, all of the branch libraries have a relatively small number of computers. However, space limitations and costs may present a challenge to this request.

Incorporating a coffee shop (third comment above) into any of the OCPLS libraries would be a significant budgetary challenge for OCPLS and this request probably cannot be accommodated in the near future.

"Later hours" (fourth comment above) was a request made by a CGBL patron. Extended hours would likely be of great benefit to the community CGBL serves; however, budgetary and staffing constraints may currently prevent this from happening.

Finally, "no time" (fifth comment above) probably refers to the PC Reservation system that was installed at OCPL in July 2007 and at the other OCPLS libraries in November 2007, in which a 30-minute time limit is placed on computer users. Computer users are not limited in the number of minutes they may use per day; the only time the 30-minute limit is in force is when other patrons are waiting for a computer. The earlier indication that few are waiting long for a computer may imply that this 30-minute limit is working well; however, the request for more computers may prove this otherwise.

The second open-ended question 14, Appendix A) in the survey asked respondents about other programs and/or services they would like the library to offer.

Responses included:

- 1) “More computers”
- 2) “Ability to color print [*sic*] for a reasonable price”
- 3) “More computers....(less wait)....more book [*sic*] may be nice”
- 4) “More books and video”
- 5) “Irish-American literature featured around St. Patrick’s Day.”

The suggestions for more computers and more books and videos (comments one and three above) were both made by Cybrary respondents. Space constraints and budgetary issues at the Cybrary are a serious issue and may prevent the incorporation of more computers and library materials; however, they do plan to add a small DVD collection within the next few months. Comment one stands out as this is the second comment directed at the Cybrary regarding more computers, which indicates that, though wait times were not a major issue for respondents the day they completed the survey, they do feel computer services are not adequately meeting their demands.

“Ability to color print [*sic*] for a reasonable price” and the request for more Irish-American literature, at least during St. Patrick’s Day, may not be comments that should reasonably be addressed by the Cybrary or CGBL (the OCPLS branches, respectively, where these respondents made these suggestions) due to their specificity, as accommodating these suggestions would likely only satisfy a small subset of patrons.

### ***Study Limitations***

The response rate was the most significant limitation to this study, limiting the generalizability of the data collected. Of four libraries, there were only 21 respondents, so conclusions cannot be drawn with confidence. To improve the response rate the

survey could have been run for a longer time period, or an incentive could have been used to encourage participation. Unfortunately, a serious time constraint was placed on the study and an extension of the survey period was not a possibility. Incentives have been shown to increase survey response rates (Ryu, Cooper, & Marans, p. 89) and could have easily been incorporated into this study. For example, candy or a raffle prize could have been used to entice potential participants. For the purposes of this study, the incentive would have had to be low in cost, as this study was unfunded by any external source.

In order to increase the response rate of Latino OCPLS computer users, it may have been wise to make surveys available in Spanish. Some Latino computer users may be more comfortable answering questions in Spanish. Obviously, the lack of availability of Spanish surveys completely prevented Spanish-only speakers from filling out the survey, and bilingual speakers may not have felt they have the proper facility with English to attempt the survey.

Another issue that may have inhibited the response rate was the availability of the survey in paper format only. Because computer users were being targeted, it may have been more appropriate to have the survey available on the computers in web-based format or downloaded on the desktop. Additionally, if available on the computers, some of the steps respondents had to take to fill out the survey would have been eliminated (i.e. walk to the desk to pick up a survey, find a spot to fill out the survey, and return the survey to the desk).

The exclusion of minors in this study leaves a significant computer user population out of the data collected. Because CBL shares its space with two schools, it

has a significant population of student patrons. Isabel Jackson, Branch Manager at CGBL, reported a substantial young adult patron base that utilize the computers (I. Jackson, personal communication, June 15, 2007). Rhonda Griffin noted a similar group of users at OCPLS (R. Griffin, personal communication, June 25, 2007). The Cybrary is quite different, in this regard, to the other three OCPLS libraries as its user base is largely adult; however, a greater number of minors use the Cybrary's computers in the summer. In fact, the summer months (due to summer vacation for most school-aged children and young adults) draw in far more minors than are typically in the OCPLS libraries at any given time during operating hours, and it is unfortunate that this group was not assessed.

The literature review suggests that the inclusion of a question regarding income may have been appropriate. As discussed above, income can be a significant determinant of computer and Internet access, with those making \$30,000 or less being significantly digitally divided. It can be inferred that those with lower educational levels also have lower levels of income; however, this is certainly not always true and cannot be said with any level of confidence.

Finally, it may have been more revealing to further divide the age bracket of 55 and older. The literature review reveals that there are differences among seniors in terms of their computer and Internet use and access, and it has been reported that those 70 and older are more significantly digitally divided than other senior age groups. It would be revealing to know whether any of the five respondents selecting this age bracket are 70 years of age or older.

## **Conclusions**

This study was interested in determining the adequacy with which OCPLS is bridging the digital divide, as well as the adequacy with which OCPLS is satisfying patron service needs. The digital divide still exists despite narrowing gaps in the number of Americans who access computers and the Internet. Not only does it still exist, it still exists for the same demographically similar Americans: largely, uneducated, less wealthy, older, rural, ethnic minorities. This may not be surprising as Americans with these characteristics are often divided from other Americans in many other social ways. Computer and Internet access can open up a wealth of informational and educational opportunities for these individuals. This technology, however, is still expensive and limits the number of people who can truly afford to incur the costs. The American public, community leaders, and librarians all feel it is the responsibility of the public library to provide technological access to this group of digitally divided individuals.

However, the continued funding of these institutions is in jeopardy.

Demonstrating that public libraries help bridge the digital divide by providing technological access to a group that would not otherwise have access, as well as proving that public libraries are providing services to the satisfaction of their patrons, are steps toward making the case for library funding. Of course, this is only part of the picture and a large number of advocates for public libraries are always needed; but having the data about the gaps in access public libraries fill and the satisfaction level patrons have with

the services they provide are essential to gaining advocates as well as arming advocates with proof of the library's community worth. Even if a library finds they are not adequately bridging the digital divide nor satisfying patrons, they then become aware of this and can revise their marketing and service provision efforts. The low cost and relatively small workload a study like this places on staff members, makes it an easy one to undergo.

While the extent to which OCPLS is filling technological gaps remains unknown, addressing the limitations outlined in the preceding section will contribute to a much higher response rate for other libraries that utilize the survey from this study. Wexter's (2006) study elicited a very high response rate and, subsequently, BCPL was capable of revising current and creating new policies and services. Additionally, BCPL discovered it was bridging the digital divide and providing critical access points for the communities BCPL serves.

This study then serves as a pilot study at OCPLS. It is recommended that it become the basis for a future study utilizing the same survey and implementing the suggestions outlined in the "Study Limitations" section of this paper. It is anticipated that if this study is undertaken by OCPLS, a higher response rate allowing for greater generalizability of the findings and in-depth analyses of the individual libraries will be possible.

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## Appendix A: Paper-based survey of Orange County Public Library Users

### 1. Which library did you use a computer at today? (check one)

- Carrboro Branch Library
- Carrboro Cybrary
- Cedar Grove Branch Library
- Orange County Public Library

### 2. For what purpose(s), did you use the library's computer today? (check all that apply)

- Search the library online catalog
- Reserve items in the library online catalog
- Get information about my library account
- Browse the Internet
- Search for or purchase goods or services
- Participate in online chat
- Read or write e-mail
- Play online games
- Use word processing (e.g. Microsoft Word) or spreadsheet (e.g. Microsoft Excel) programs
- Do homework assignments
- Search an online database
- Get information for my job
- Look for or apply for a job
- Learn more about personal interests
- Research my family's genealogy
- Read the latest news, sports, etc.
- Use the printer
- Other Please specify \_\_\_\_\_

### 3. What is the *primary* reason you use the library's computers? (check one)

- This is the only place I have access to a computer

- I am already at the library for other reasons
- The computers here are faster and/or better than the other computers I could use
- It is the most convenient location
- Access is free
- Other Please specify \_\_\_\_\_

**4. About how often do you use the computers at this library? (check one)**

- This is my first time
- Two or more times a week
- Once a week
- Once a month
- Less frequently than one time a month

**5. How long did you wait for a computer today? (check one)**

- I did not wait for a computer
- Less than 15 minutes
- Between 15 and 30 minutes
- Longer than 30 minutes

**6. How is your experience when you use this library's computers? (check one)**

- Poor
- Fair
- Good
- Very good
- Excellent
- This is the first time I have used this library's computers

**7. What other programs or services would you like this library's computers to have?**

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**8. How skilled are you at using a computer? (check one)**

- Very unskilled
- Unskilled
  
- Moderately skilled
- Skilled
- Very skilled

**9. Have you ever attended a computer class at the Carrboro Branch Library or Carrboro Cybrary?**

- Yes
- No

**10. Have you ever asked the library staff for help with the computers?**

- Yes
- No (if you answer "No", please skip to question 13)

**11. If you answered "Yes" to the above question, how helpful were the library staff in answering your question(s)?**

- Not helpful
- Somewhat helpful
- Helpful
- Very helpful

**12. When you come to the library, how often do you get the items or services you want? (check one)**

- Never
- Rarely
- Sometimes
- Usually
- Always

**13. When you come to the library, how is the customer service you receive? (check one)**

- Poor
- Fair
- Good

Very Good

Excellent

**14. What other programs or services would you like the library to offer?**

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**15. What else will you do/did you do while you are/were at the library today? (check all that apply)**

Borrow or reserve a book

Borrow or reserve a movie or music material

Attend a children's library event or class

Attend an adult's library event or class

Attend a non-library meeting or event

Do research with resources other than the computer

Read leisure materials (e.g. newspapers, magazines, etc.)

Ask a librarian for help in finding information

Sign up for a library card

Sign up for an event or class

Nothing else

Other Please specify \_\_\_\_\_

**16. What is your age?**

18-25

26-39

40-54

55 or older

**17. What is your gender?**

Female

Male

**18. What is your ethnicity? (check all that apply)**

American Indian

Alaska Native

- Asian
- Black/African American
- Hispanic
- Middle Eastern
- Native Hawaiian or Pacific Islander
- White
- Other Please specify \_\_\_\_\_
- No answer

**19. What is the highest level of education you have completed? (check one)**

- Lower than 12<sup>th</sup> grade
- High school or GED
- Some college
- Trade or professional school
- Associate's degree
- Bachelor's degree
- Higher degree

**20. Where do you have access to a computer besides the library? (check all that apply)**

- Home
- Work
- Friend's or relative's house
- School
- Mobile device
- Other Please specify \_\_\_\_\_
- Nowhere else

**This is the end of the survey. Please return it to a staff member at the circulation desk. Thank you for your time and responses!**

## **Appendix B: Text of signage located near the public use computers at each OCPLS location**

Did you use a computer today at the library? If you did and are 18 years of age or older, please tell us about it! A 7-15 minute survey, conducted by the University of North Carolina at Chapel Hill as part of a research study, of your experience at the library today is available at the Circulation Desk in a folder. Your response will be greatly valued!

## **Appendix C: Text of signage located at each OCPLS location circulation desk**

Did you use a computer today at the library? If you did and are 18 years of age or older, please tell us about it! The survey, conducted by the University of North Carolina at Chapel Hill as part of a research study, will take about 7-15 minutes to complete. Take one from the folder below and return it to a staff member at the Circulation Desk. A fact sheet describing the study is attached to the top of the survey. Please read and keep the fact sheet for your own records. The responses you provide to the survey attached are completely anonymous. Thanks for your time!

## **Appendix D: Fact sheet including all IRB required elements of consent**

### **University of North Carolina-Chapel Hill Information about a Research Study**

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**IRB Study #** SILS 07-0989

**Consent Form Version Date:** 06-11-2007

**Title of Study:** A Survey of Orange County Public Library Computer Users

**Principal Investigator:** Bonnie Brzozowski

**Principal Investigator telephone number:** (919) 370-9842

**Principal Investigator email:** bonbrz@email.unc.edu

**UNC-Chapel Hill Department:** School of Information and Library Science

**Faculty Advisor:** Dr. Evelyn Daniel

**Study Contact telephone number:** (919) 962-8062

**Study Contact email:** daniel@ils.unc.edu

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#### **What are some general things you should know about research studies?**

You are being asked to take part in a research study. To join the study is voluntary. You may refuse to join, or you may withdraw your consent to be in the study, for any reason, without penalty.

Research studies are designed to obtain new knowledge. This new information may help people in the future. You may not receive any direct benefit from being in the research study. There also may be risks to being in research studies.

Details about this study are discussed below. It is important that you understand this information so that you can make an informed choice about being in this research study. You will be given a copy of this consent form. You should ask the researchers named above, or staff members who may assist them, any questions you have about this study at any time.

#### **What is the purpose of this study?**

The purpose of this research study is to learn about the characteristics, actions, intentions, and satisfaction levels of the computer user population of Orange County Public Library System (OCPLS) so that administrators and staff may make better informed policy and service decisions.

**How many people will take part in this study?**

If you decide to be in this study, you will be one of an indeterminate number of people. The number of participants in this study cannot be predicted.

**How long will your part in this study last?**

Your active involvement in this study should take between 7 and 15 minutes. You do not have to answer any questions that you do not wish to answer, for any reason. We will not contact you anytime before, during, or after the study. We will only converse with you if you initiate contact.

**What will happen if you take part in the study**

If you take part in this study, you will be asked to complete the attached paper survey. The survey should take between 7 and 15 minutes to complete. Most of the questions are multiple choice with a few questions asking you to provide a brief response. Please complete the survey at the library. After completing the survey, please return it to a staff member at the Circulation Desk. **By completing the survey and returning it to the Circulation Desk, you are indicating your consent to participate in this study.**

**What are the possible benefits from being in this study?**

Research is designed to benefit society by gaining new knowledge. You may not benefit personally from being in this research study; however, OCPLS service provisions may improve as a result of this study. Therefore, you may indirectly benefit from an improvement in OCPLS services.

**What are the possible risks or discomforts involved from being in this study?**

There are no risks or discomforts associated with your participation in this study. The survey questions are not sensitive in nature.

**How will your privacy be protected?**

All answers to this survey are completely anonymous and cannot be associated with you in any way. No information that can identify you as an individual will be collected. All completed surveys will be promptly placed in an envelope and staff members are not permitted to read the completed surveys.

**Will you receive anything for being in this study?**

You will not receive anything for taking part in this study. However, your responses are extremely valuable to us.

**Will it cost you anything to be in this study?**

There are no costs for being in the study.

**What if you have questions about this study?**

You have the right to ask, and have answered, any questions you may have about this research. If you have questions, or concerns, you should contact Bonnie Brzozowski at (919) 370-9842 or Dr. Evelyn Daniel at (919) 962-8062. You can also contact Ms. Brzozowski and Dr. Daniel via the email addresses listed at the top of this form.

**What if you have questions about your rights as a research participant?**

All research on human volunteers is reviewed by a committee that works to protect your rights and welfare. If you have questions or concerns about your rights as a research subject you may contact, anonymously if you wish, the Institutional Review Board at (919) 966-3113 or by email to [IRB\\_subjects@unc.edu](mailto:IRB_subjects@unc.edu).

**Thank you for helping me with this study.**