TRIBAL COLLEGE LIBRARY WEB SITES: PROVISION OF HEALTH INFORMATION SOURCES

by
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A Master's paper submitted to the faculty
of the School of Information and Library Science
of the University of North Carolina at Chapel Hill
in partial fulfillment of the requirements
for the degree of Master of Science in
Library Science.

Chapel Hill, North Carolina

November, 2003

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Advisor

Annelise Ynez Sklar. Tribal College Library Web Sites: Provision of Health Information Sources. A Master's paper for the M.S. in L.S. degree. November, 2003. 47 pages
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Tribal colleges and universities (TCU) are institutions managed by Native American tribes and typically housed on reservations. This study evaluates the health information and general content of TCU library web sites. The web sites of the fifteen TCU offering programs in the health sciences were examined for representation of library services and information, research and reference tools, instruction tools, functionality and design, and health sciences information tools. The results were compared with previously published data for other kinds of academic libraries. Most TCU library web sites have a strong collection of library information and links to free research tools but lack instructional tools, but many need to update their sites more frequently and improve their organizational schemes.

Headings:

College and university libraries -- Services to North American Indians.

Junior and community college libraries -- Services to North American Indians.

Web sites -- Evaluation.

Internet -- College and university libraries.

Medicine -- Internet resources.

Health -- Internet resources.

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Introduction

Tribal colleges and universities (TCU)—colleges governed by one or more Native American tribe—are unique institutions that provide coursework of special relevance to their sponsoring tribes. Like traditional community colleges, they typically offer associates degrees and certificates in arts, science, and applied sciences. Additionally, several also offer a full bachelors degree. Most TCU also offer courses in Native American languages and cultural studies. Typically, the vocational training offered by TCU is such that it benefits not only the student, but also the tribe; common areas of study are human services, early childhood education, and environmental science, and, as gaming has become a major source of income for many tribes, several colleges now offer classes in casino management. Many colleges also offer health sciences courses.

Native American reservations, which are typically rural or semi-urban, are especially hard hit by the shortage of health care professionals in U.S. While many programs have been introduced at the federal, state, and non-profit level to address Native American health care needs, in some cases the tribes themselves are better equipped to train and educate community members, future health sciences students, and current health care practitioners. In this spirit, many TCU offer programs in nursing, home health care, emergency medical services, biomedical sciences, community health, dental assistance, and other allied health services and premedical sciences.

Tribal libraries, both those associated with TCU and those that stand alone, are the obvious liaison between the community and outside health information resources.

However, tribal libraries—due to location, governance, limited funding, and even cultural issues—face unique situations and challenges, especially in providing access to online resources. This paper strives to fill two needs: 1) analyze the content and design of TCU library web sites and then compare the findings with those already published about sites representing other kinds of academic libraries and 2) evaluate the online health information already available through TCU web sites.

Literature Review

Several issues must be addressed when considering the health information resources available on the web sites of TCU libraries. First, the nature of TCU and their libraries must be established. Next, general web site design, construction, and usability as pertaining to libraries serving academic, health, and Native American communities must be examined. Finally, the availability and accessibility of online health information for health sciences professionals, students, and Native American populations must be addressed.

TCU and Their Libraries

TCU are reservation-based community colleges managed by the governing council of a tribe. Though many of these colleges had earlier incarnations as federally run institutions, it was not until Navajo Community College, now called Dine Community College, was chartered in 1968 and funded under the Navajo Community College Assistance Act of 1971 that tribes began to control their own institutions of higher education. Since then, the number of colleges that receive funding under and the Tribally Controlled Community College Assistance Act of 1978 has grown to 34. In 1994, TCU were also granted land grant status through the Equity in Educational Land Grant Status

Act, and, in 2002, President George W. Bush issued an executive order establishing the President's Board of Advisors on Tribal Colleges and Universities and the White House Initiative on Tribal Colleges and Universities (President 2002).

Duran (1991) lists three primary goals for TCU: "(1) preserving and communicating tribal culture; (2) enhancing economic opportunity within the reservation community; and (3) improving health care at the community level through support or participation in alcohol and drug abuse programs" (396). As an information center, the TCU library plays a major role in all three of these missions. In 1993, Patterson and Taylor (1996) conducted a survey to examine the operations of TCU libraries. They examined budget, personnel, service population, collections, facilities, services, networking, and computer usage in TCU libraries. They found, as did Dilevko and Gottlieb (2002) later, that these libraries tend to be small spaces with small collections, little or no technology, few staff members, and tiny budgets. TCU libraries are often housed in buildings originally built for other purposes, and, though many of the libraries serve as both academic and community libraries for tribe members of all ages, the average budget in 1993 was only $66,000 while individual institutional holdings averaged 14,500 volumes and 153 serial titles. Tribal libraries tend to have especially strong collections of Indian or tribal materials, and all of the libraries in Patterson and Taylor's (1996) survey supplement their own resources with interlibrary loan.

Library directors often lack a Masters in Library Science or equivalent degree, and additional support staff is limited. Dilevko and Gottlieb's (2002) survey of 33 library directors and staff at 26 TCU found that both directors and non-directorial staff of all levels are responsible for a variety of library tasks, including patron services, technical

services, administrative duties, and community outreach. Like other librarians, those in TCU libraries typically enjoy working and interacting with their patrons, and often tribal librarians are equipped to provide unique services, such as computer skills education in the tribe's native language. Nonetheless, many library staffers also found themselves frustrated by lack of funding, problem patrons, conflicts with faculty or the college administration, and tribal politics.

Though many of the directors and staff members surveyed were often frustrated with the administration at their colleges, an earlier survey (Metoyer-Duran 1992) of TCU presidents' attitudes towards the libraries at their institutions found that, though libraries were required for accreditation of the colleges, the administrators also had a progressive view of the TCU library as an information center for the entire tribe that helps preserve tribal culture by building collections of historical materials relating to the tribes, engaging tribal elders, and establishing oral history programs; enhance economic opportunity with instruction in computer use, business and career collections, and grant-writing activities; and meet the educational needs of the community by supporting the curriculum of not only the college but the reservation's K-12 schools as well. Most importantly, the presidents recognized the need for online resources, such as MEDLINE for health sciences programs, which would prevent the tribe from being isolated from the rest of the information economy, and they consider the installation of information technology a priority.

Several initiatives have been made to improve access to information for tribal members. The Bill and Melinda Gates Foundation, well-known for its contributions of computers to public libraries, has, as part of its Native American Access to Technology

Program (NAATP), donated to tribal public libraries in New Mexico, Arizona, Colorado, and Utah the equipment (between two and four computers, a black and white laser printer, and Internet connectivity equipment), training, and technical support necessary to make Internet access a reality (Dorr and Akeroyd 2001).

Other projects were developed to provide ready access to online information. One, sponsored by the American Indian Higher Education Consortium (AIHEC), IBM, the W.K. Kellogg Foundation, and the University of Michigan, is a virtual library for TCU. Begun with a prototype for Bay Mills Community College on the Upper Peninsula of Michigan, the initiative, which was modeled after the Internet Public Library and the Kids Click library, provides access to general resource material for two-year and four-year education programs, a repository for web-based curriculum material, and a place for preserving and sharing cultural information such as oral histories and songs (Ambler 2000). Individual colleges can modify the library to suit their own needs.

Another, the Oksale Virtual Library at Northwest Indian College (NWIC) on the Lummi Reservation north of Bellingham, Washington, was created by students in Loriene Roy's (2002) classes at the Graduate School of Library and Information Science at the University of Texas at Austin with the input of students in the Oksale Teacher Preparation Program at Northwest Indian College, information specialists and librarians at NWIC, Lummi tribal members, researchers in information seeking behavior and Native American education, and those involved with the AIHEC Virtual Library.

Library Web Site Design, Construction, and Usability

Library science publications abound with guidelines on the creation and evaluation of library web sites for both general and specific populations. Garlock and

Piontek (1999) outline the initial issues that web designers should address when creating an interface: statement of the problem, target audience, information organization, and user interface. They also lay out other crucial parts of the process: developing content, display, layout, accessible design, incorporating user feedback, and looking ahead. Norlin (2001) provides similar advice. She explains that web designers must "keep the end user in mind, achieve superiority through simplicity, improve performance through design, [and] refine and iterate" (10).

Several empirical studies examine the elements—and the problems—common to library web sites. King (1998) examined the home pages of 120 member libraries of the Association of Research Libraries (ARL) to compare and contrast design elements. Cohen and Still (1999) analyzed the content of library web sites at fifty PhD-granting institutions and fifty two-year colleges to identify common content across library web sites and the content that reflects the larger institution. Tolppanen, Miller, and Wooden (2000) studied the web sites of medium-sized universities, and Agingu (2000) studied those of historically black colleges and universities.

In order to make generalizations about elements common to academic library web sites, King's (1998) study addressed content as it was designed: in backgrounds, document headers, document footers, the document body, page length, number of steps to the library home page from the parent institution web site, and the domain name server. Cohen and Still (1999) examined site content, functionality, and structure, finding aspects of the web sites that reflect the larger academic institution as well as those common to academic library web sites. They also determined that library web sites may serve as a

tool for four possible purposes: information, reference, research, and instruction, though not all web sites served all of these purposes.

Tolppanen, Miller, and Wooden (2000) divided the characteristics they found into categories: “Navigation Tools,” “Library Information,” “Information Access Services,” “Information Retrieval—Forms,” “Policies,” “Individual Library Department/Faculty Pages,” “Internet/World Wide Web Information and Links,” and “Reference, Guides, Instructions and Tutorials.” Though often packed with information, the authors found that “many library home pages are poorly designed and, as such, difficult to use and confusing to navigate” (12). They suggest that web pages should be arranged so that their users, in this case students, can easily and quickly find high priority items. They also suggest that libraries include more self-guided tutorials.

The sites at large research libraries were more likely to serve more of the functions Cohen and Still (1999) outlined (information, reference, research, and instruction) and were especially more likely to offer their own instructional materials for library use and more Internet reference resources. Two-year colleges that did offer substantial resources were usually linked to other, larger library sites. Like two-year colleges, historically black colleges and universities (HBCU) lag behind other academic libraries in online resources and services. Agingu (2000) found that many HBCU libraries simply did not have the funding to offer resources like web-based online catalogs, electronic books and journals, or online databases. However, she suggested that HBCU, and, logically, other poorly-funded institutions, could make better use of the resources that were available: the telnet catalog, free databases such as ERIC and

PubMed, links to local libraries, and lists of paper or CD-ROM holdings so that users might verify their existence before trekking to the library in search of them.

Hospital and health sciences libraries often face issues separate from public and academic libraries, but Estabrook (2001) notes similar concerns in the design of hospital library web sites. She also suggests that selection of links is much like traditional collection development, and that the audience for the material must always be kept in mind. Manninen (2002) offers the same collection development advice about the selection of fee-based databases; in choosing online resources, one must consider the intended audience of the materials and the library's users; whether the content would be purchased by the library in another material format and issues specific to that particular electronic format (e.g. HTML, PDF, ASCII, etc.); whether material already in the collection would be duplicated; the coverage, completeness, and currency of the online version; and ease of use.

Health Information for Professionals, Students, and Native American Populations

As the most recent editions of most handbooks on health sciences collection development were published in the early days of the World Wide Web, they are somewhat dated when it comes to electronic resources. However, many of the general standards still apply. As Darling and Eakin (1997) suggest, librarians should, as they do with print materials, consider scope, depth, intended audience, quality, currency, usefulness of the materials, and cost. In addition, they should also consider the relationship between electronic material and its print counterparts, the ease of use, software requirements, printing and downloading capability, compatibility, availability of documentation and guides, preservation/archival issues, and legal issues. Health sciences

libraries should expect to provide electronic resources such as bibliographic databases (such as MEDLINE), electronic journals and books, numeric or factual databases, clinical assist software for diagnosis/treatment decisions, educational software, and productivity software.

Kovacs (2000) lists similar items that should be included on libraries' health sciences web sites: directories, such as of hospitals or clinicians; medical dictionaries; abstracts, indexes, and table of contents services, such as PubMed or other versions of MEDLINE and the UnCover table of contents database; medical or health encyclopedias; medical ejournals or full-text databases; health bibliographies and webliographies; medical news; and key primary documents. One site that links quality resources of these types is MEDLINEPlus (http://www.medlineplus.gov), which is produced by the National Library of Medicine (NLM). MEDLINEPlus also includes sections aimed at specific segments of the population, such as Native Americans.

Another project that brings health sciences information to Native Americans is the Tribal Connections Project, an initiative of NLM and the Pacific Northwest Regional Medical Library. The project, which began in the Pacific Northwest and has now spread to the Southwest, sought to provide a needs assessment and then the technical infrastructure (such as computers, software, wiring, and Internet connections) and community training (of tribal health, social services, education, outreach, and administrative staff) necessary to make web-based health information more accessible to those living on the reservation. The first phases have been mostly successful, expanding tribal awareness of the Internet and online health information. However, due to the

locations of some of the reservations and high turnover of tribal staff, the training has been insufficient. Phases II and III are currently underway (Wood et al. 2003).

Linking Native Americans to Health Information is a similar project, also funded by NLM, which partners the Harley E. French Library of the Health Sciences at the University of North Dakota with TCU libraries in North Dakota to provide tribal members with access to electronic health information. The project aims to train Native American health professionals and consumers to find reliable online health information, provide TCU with access to a full-text health information database, and place Internet accessible computer workstations in the five North Dakota TCU libraries. Already the project has created a web site providing links to PubMed, MEDLINEplus, Clinical Trials.gov, and other consumer health links (http://harley.med.und.nodak.edu/tcl).

Methodology

This study uses textual content analysis methodology to survey and evaluate the general research and health sciences information resources available on TCU library web sites. The texts analyzed are the library web sites of those TCU that offer health sciences programs. The 34 TCU recognized by the United States Federal Government, as well as one Canadian school, are listed, with links to their web sites, on the AIHEC web site (http://www.aihec.org/college.htm). Two- and four-year colleges and universities that offer health sciences and related degrees can be found using the Department of Education's College Opportunities Online, offered through its Integrated Postsecondary Education Data System (http://nces.ed.gov/ipeds/cool/Search.asp), using the Instructional Program limit "Health Professions and Related Sciences." For the purpose of this study, TCU that offer degrees in the health sciences are defined as institutions that appear on

both of these lists. Web sites for these institutions' libraries were found by running a search in the Google search engine that combined the term "library" with the college name. TCU web sites were also navigated in search of library sites to ensure that the most recent version was examined. Fifteen institutions appear on both lists and have library web sites; thus a full census of these sites was collected. The final list of libraries and their web sites can be found in Appendix A.

The author completed web site evaluations in July and August 2003. Web site content categories and units of analysis were devised based on criteria developed in previously published studies of library web sites, e.g. Garlock and Piontek (1999), Cohen and Still (1999), and Tolppanen, Miller, and Wooden (2000). Health information is evaluated using lists of resource types published by Kovacs (2000) and Richards and Eakin (1997). A total of 62 criteria were compiled and divided into five categories:

- Library Information and Services
- Reference and Research Resources
- Instruction critera
- Function and Design
- Health Sciences Information

Detailed descriptions of each of the criteria used can be found in Appendix B.

Results and Analysis

Criteria results for each TCU library web site were compiled, and totals and simple percentage analysis were then computed. The complete results can be found in Appendix C. Additionally, percentages of library web sites where criteria was evident were compared to the previously published percentages of PhD-granting universities,

two-year colleges (Cohen and Still 1999), medium-sized universities (Tolpannen, Miller, and Wooden 2000), and historically Black colleges and universities (Agingu 2000) that also express this criteria. These percentages can be found in the tables in Appendix D.

Library Information and Services

Most of the TCU library web sites incorporated some sort of general information about the library and the services it provides. Most libraries provided hours of operation (n=11, 73.3%) and some sort of contact information (email, n=10, 66.7%; mailing address, n=9, 60%; telephone, n=10, 66.7%; individual staff, n=4, 26.7%). In comparison, almost all (97%) of medium-sized university web pages in Tolppanen, Miller, and Wooden's (2000) study listed the library's hours of operation. TCU libraries were on par with medium-sized university libraries (66.2%) when it came to supplying an email address, but they lagged behind both the PhD-granting (100%) and two-year (78%) schools studied by Cohen and Still (1999). Significantly fewer TCU had staff contact information than did PhD-granting universities (72%), medium-sized universities (82%), and two-year colleges (52%), but, as many TCU are single-librarian establishments, they may not have a staff large enough to warrant listing separate contact information for each employee.

While most PhD-granting universities (70%) and medium-sized universities (76.7%) supplied forms by which to make specific requests, such as for interlibrary loans, on their web sites, only a handful (20%) of TCU libraries provided automated requests for interlibrary loan (n=3, 20%), purchase of materials (n=2, 13.3%), and placing materials on reserve (n=1, 6.7%). However, TCU only barely lagged behind HBCU (31%) and two-year colleges (30%) in the inclusion of request forms, and additional

interlibrary loan, materials purchase, and reserve request forms may merely be buried within the TCU's OPAC.

Five TCU libraries (33.3%) provided a description of their services, four (26.7%) included mission statements, and many included policies or statements on or explanations of library use (n=3, 20.0%), circulation (n=5, 33.3%), collection development (n=4, 26.7%), accepting donations (n=1, 6.7%), or other library issues (n=2, 13.3%), which is less than found in their two-year college peers (policies: 72%) and medium-sized universities (mission statement: 45.9%; circulation policy: 80.5%; collection development policy: 31.6%; donations policy: 26.3%), but more than Cohen and Still (1999) found at PhD-granting universities (policies: 30%). Four TCU library web sites furnished directions to the library's location, but only one provided instructions for accessing online materials remotely. This data for other kinds of libraries was not available.

Three (20.0%) TCU libraries provide details of library news or events, which is comparable to the other two-year colleges library sites (18%) that include news or events. Significantly more (88%) PhD-granting institutions' libraries list library news or upcoming events, but, as larger institutions are more likely to have the funding and staff to sponsor events, this is not surprising. None of the TCU libraries provide their own publications or list job openings in the library. Few other libraries include this information, though; 30.8% of medium-sized universities listed job openings, and 13.5% and 12.8% respectively included the library's annual report and strategic plan. It is also quite possible that the TCU libraries examined create no official publications and have no open staff positions.

Reference and Research Resources

Most TCU libraries included access some sort of reference or research tools on their web sites. Only two-thirds of the libraries (n=9) provided access to their online public catalog, which is a greater percentage than that of the HBCU (54%) that link to their own OPAC, but considerably less than the two-year colleges (84%), PhD-granting (100%), and medium-sized universities (100%) that do so. However, almost all of the TCU provided links to internet search engines (n=14, 93.3%), while fewer of the other academic libraries included this standard resource (PhD-granting universities: 76%; two-year collges: 64%; medium-sized universities: 70.4%).

A good number provided links to free resources such as dictionaries (n=10, 66.7%), encyclopedias or other factual databases (n=9, 60%), periodicals databases (n=5, 33.3%), ejournals (n=6, 40%), ebooks (n=6, 40%), and news sources (n=8, 53.3%). Many libraries also provided licensed research tools (full-text databases: n=12, 80.0%; ebooks: n=6, 40%; newspaper databases: n=4, 26.7%). Though TCU provided fewer resources than large PhD-granting universities, almost all of which (98%) provided some kind of subscription service, and medium-sized universities, of which the majority provided periodical databases (90.2%) and full-text databases (91.7%), they provided more resources than the HBCU, of which only slightly more than half (54%) included web databases. Of note is that licensed products on TCU library sites appeared to primarily be furnished through consortial purchases rather than selected by the libraries themselves. One of the most common resources, Ethnic News Watch (n=9, 60.0%), is supplied to tribal libraries through AIHEC. The others are typically provided through a state library purchase or statewide consortium.

Many of the TCU libraries also relied heavily on links to their state library or a statewide library resources page (n=10; 66.7%) to provide the bulk of their research resources. In addition, almost all (n=13; 86.7%) of the libraries link to the AIHEC virtual library, which includes free dictionaries, encyclopedias, periodicals databases, full-text databases, ejournals, ebooks, and news sources arranged by subject and divided into general resources and those specifically intended for Native Americans and Native American studies. Utilizing links to these resources allows TCU libraries to provide their patrons with easy access to quality research resources while removing from the TCU library staff the burden of maintaining a large collection of ever-changing web resources.

Instruction

Most TCU libraries incorporated little or no online instruction in the use of their resources into their web sites. None of the libraries provided their own internet use guides/tutorials, pathfinders to local resources, or schedules for classes or workshops taught in or about the library. Only one library offered a virtual tour of the physical library, and only one included floor maps. One delivers instruction in research strategies through a link to TILT, the Texas Information Literacy Tutorial. Several of the libraries' web sites are based on the Bay Mills Virtual Library prototype (n=4, 26.7%), which includes a tour of their virtual library. These libraries also included links to internet tutorials; however, two of the three suggested links are no longer active.

Though ensuring that library users can competently use the research tools provided is as important as providing the resources themselves, Cohen and Still (1999), Tolppanen, Miller, and Wooden (2000), and Agingu (2000) all found that most academic library web sites lack adequate instructional resources. Two-year colleges were more

likely (52%) to include tutorials in internet searching than were medium-sized universities (41.4%) or PhD-granting institutions, while the PhD-granting universities (42%) were more likely to include tutorials in information literacy or use of the library than were two-year colleges (28%) or medium-sized universities (21.8%). The larger academic institutions were also much more likely to create subject-specific pathfinders to using local resources (60%) than the two-year colleges (10%).

Functionality and Design

TCU library web sites varied in their complexity and graphic design. The majority of sites (n=9, 60.0%) had either white or predominantly white backgrounds. The others had either a colored background (n=3, 20.0%) or a graphical/textured one (n=3, 20.0%). Several created uniformity among their pages or their college's pages through use of standard headers or footers (n=9, 60.0%). Only one of the sites had moving graphics; most of the other sites (n=12, 80.0%) had graphics, but they tended to be simple, consisting of library, college, or information tool logos. None of the sites employed audio or video.

Like the two-year college library web sites studied by Still and Cohen (1999), most TCU library sites had only two (n=6, 40.0%) or three (n=7, 46.7%) layers, consisting of a front page and categorical internal and/or external links. Only two sites (13.3%) employed frames. Medium-sized universities (54.9%) and PhD-granting institutions (58%) were likely to employ site search engines, but almost no two-year colleges (6%) included one. Few TCU library sites had internal search engines (n=2, 13.3%) or site maps (n=4, 26.7%), but, as none of the sites had more than three layers, in most cases neither would be considered necessary navigational tools. About two-thirds of

TCU libraries (n=9, 60%) were directly linked from their college's top page, which is comparable to what Tolpannen, Miller, and Wooden (2000) found at medium-sized universities (68.4%) but less than Agningu found in HBCU (85%) or other universities (100%). Considerably more TCU libraries linked back to their college's top page (n=14, 93.3%) than did medium-sized university libraries (63.9%).

Almost all TCU library web sites (n=11, 73.3%) included either a last update date or a copyright date, which is similar to the results in other libraries (two-year colleges: 70%; PhD-granting universities: 88%; medium-sized universities: 56.4%; HBCU: 46%). However, though the TCU library sites included a last update date, this date often reflected neglect of over a year. A few of the sites included "current" library news or library hours for a time period already passed, and at least ten of the sites included hyperlinks that no longer work. Others appeared to be works in progress, containing internal links that led nowhere or to a "coming soon" page. While library web site maintenance can be a daunting task, out of date information is less useful—and more frustrating to the site's user—than no information at all, and libraries should strive to include only the information that they can update as needed.

Though all the sites were simple, none were fully accessible when tested with using Bobby (http://bobby.cast.org). Bobby, a free online tool that tests a web page's compliance with W3C and Federal statutory accessibility guidelines and standards, found Priority 1 (n=10, 66.7%), Priority 2 (n=13, 86.7%), and Priority 3 (n=15, 100.0%) accessibility issues with most of the libraries' sites. The most common Priority 1 problem was a lack of alternative text (n=9, 60.0%) for images that cannot be read by user-assistive technology. While the TCU library is under no legal obligation to make its web

sites accessible, making resources available to all patrons only facilitates its mission as an academic and public library.

Health Information Tools

Though all of the libraries surveyed are attached to colleges and universities that offer some sort of health sciences program, less than a third of the libraries (n=4, 26.7%) include specific sections of health resources. Others have included some health tools with their general resources, but several do not include them at all. The most common health sciences research tool found on TCU libraries web sites was a free medical dictionary (n=7, 46.7%), which is included in the Bay Mills virtual library prototype. Two colleges (13.3%) linked to free health sciences periodicals databases, and five (33.3%) appear to provide access to a licensed health-related database. Two colleges (13.3%) provided links to free health sciences ebooks, such as the Merck Manual of Diagnosis and Therapy. Four (26.7%) provided links to health webliographies or directories.

While only two (13.3%) of TCU libraries provided direct links to PubMed, the free version of MEDLINE, and four (26.7%) provided links to MEDLINEPlus, the National Library of Medicine's consumer health information site, four (26.7%) more libraries provided links to the National Library of Medicine's main page, which provides links to both PubMed and MEDLINEPlus. Additionally, one library (6.7%) linked to the Tribal Health Connections (http://www.tribehealth.org/) site aimed at tribes in the Four Corners region, one (6.7%) provided a link to Tribal Connections in the Northwest (http://www.tribalconnections.org/), and two (13.3%) linked to the Linking Native Americans to Health Resources site, which aims to link North Dakota's tribal libraries to

health sciences information. All three of these sites include links to PubMed and MEDLINEPlus.

As noted in the Reference and Research Resources section, almost all (n=13, 86.7%) of the libraries augment their online resources with a link to the AIHEC virtual library, which provides a number of free health and health sciences resources, such as directories, medical dictionaries, bibliographic databases, factual databases, health encyclopedias, ejournals, ebooks, bibliographies/webliographies of health information resources, and medical news. Additionally, it provides links to PubMed, MEDLINEPlus, and the Tribal Connections (Northwest), Tribal Health Connections (Four Corners), and Linking Native Americans to Health Information sites. It also provides a link to the Native Health Research and History Databases, a bibliographic database of Native American health-related materials sponsored by NLM and Indian Health Service and maintained by the University of New Mexico.

Discussion and Recommendations

TCU libraries are typically small departments attached to small, young institutions with limited and fluctuating funding. Providing licensed online resources can be a financially costly endeavor, and finding and maintaining links to free web sites can be overly time consuming for the TCU librarian who already wears many hats within his or her community. In addition, the web sites for TCU libraries simply have smaller audiences than do library web sites for larger institutions, and the audiences are made smaller depending on the quality of internet access, which varies greatly between urban areas, semi-urban reservations, and rural reservations. Thus said, TCU libraries appear to be good at making due with the limited resources available to them: TCU library web

sites provide their users with free resources, more comprehensive sites that link to free resources, and resources licensed through joint endeavors.

Library Information and Services

The majority of TCU libraries provide on their web sites some sort of contact information and information about the services and resources available in the library. While all of this information is the sort that is generally available to onsite library users who ask for it, as internet service on the reservation improves, more TCU library users will access the library web site from remote locations in search of information about the services available to them and guidance in accessing material from home. TCU libraries need to prepare to address these needs by providing instructions for remote access of licensed resources and by making material that currently exists in hard copy available online.

Reference and Research Resources

TCU libraries vary in the level of reference and research resources they provide on their sites. All libraries need to make their holdings accessible in some way, and it would benefit off-site users for automated libraries to incorporate their online catalogs into their web sites. As Agingu (2000, 35) suggests for funding-strapped HBCU, libraries without web-enabled OPACs can, if they have one, instead link to the telnet version. Another option is Koha (http://www.koha.org), a free open source library system that includes OPAC, library intranet, circulation, and acquisition modules. Agingu (2000, 35) also notes that libraries can also alert users of their other holdings by listing print and CD-ROM indexes and periodicals and emphasizing unique collections. She also suggests

that HBCU extend their collections by linking to other libraries; most TCU libraries already do this.

The majority of TCU libraries make excellent use of free online resources such as the AIHEC virtual library, which allows the TCU to provide access to an abundance of quality resources while freeing TCU librarians from the time-consuming task of link maintenance. It must be noted that, while the AIHEC virtual library has a wealth of resources, it has a text-heavy interface with an organizational scheme that is at times difficult to use. It is arranged by broad and then more specific subjects, which is useful for someone unfamiliar with the resources available in that discipline, but it is not then subdivided by resource type, which can be annoying for a user who knows the kinds of material that they want to access, for example, citations to articles on literary scholarship, but has no database title for which to hunt. It may also confuse and frustrate the new scholar, as scholarly resources are jumbled in with the online equivalent of the popular magazine with no explanation as to when one kind of resource is preferable over the other.

Most TCU libraries also heavily utilize products licensed through consortial or statewide purchases. Unfortunately, the available resources are not always the most appropriate to TCU library users because many of the databases provided through statewide agreements are aimed primarily at public libraries. While these resources are certainly useful to college students and academic researchers, they are not the only tools that competitive scholars need. The AIHEC provision of Ethnic News Watch, which indexes the *Tribal College Journal of American Indian Higher Education*, sets a strong

precedent for TCU libraries jointly purchasing other databases that would benefit their specific patron groups.

Instruction

Though teaching patrons how to use resources is as important as providing them, TCU library web sites have few instructional tools. Most licensed resources include help screens within the utility, but most patrons need a basic overview of search techniques like Boolean logic and a primer in information literacy and resource evaluation. In the years since Cohen and Still (1999), Tolppannen, Miller, and Wooden (2000), and Agingu (2000) published their studies, many large academic libraries have made a conscious effort to launch online tutorials aimed at first-year undergraduates. TCU libraries who do not have the resources to develop their own interactive tutorials can link to these new resources, though, as evidenced by the outdated instructional links provided by all the colleges using the Bay Mills virtual library prototype, other institutions change or delete their sites without warning, leaving those who link to them scrambling to keep up to date or else face providing broken links. These links can also be enhanced with the addition of online factsheets specific to using the individual TCU library. Libraries that already create their own print handouts using word processing software should find the conversion of these resources to HTML for addition to the library's web site fairly quick and painless.

Functionality and Design

TCU libraries vary in the web design skill they showcase. In general, library web sites need not be overly complicated, but they should provide the information that the library's users will need. Evident on TCU library sites are multiple situations that will

frustrate users: news and events information a semester or more old, broken external and internal links, and non-intuitive organizational schemes. One library had two web pages that turned up with Google—one with a virtual tour of the physical library and one that provided online research links—but the two sites were not connected in any way, shape, or form. Some pages are simply aesthetically unpleasing.

TCU libraries have limited resources, and most TCU librarians and staff do not have the time to take intensive web design courses or even to maintain a site. However, TCU librarians who network can tap into student groups who have the time, interest, and skill to update the library's virtual look. In TCU that offer courses in web design, library web site overhaul can become a computer science course project. Masters of Library and Information Science students seeking practica can both design a site and develop content, as Roy's (2002) University of Texas class did for the Oksale virtual library.

Health Information Tools

TCU libraries are not medical libraries, but they do have the dual mission of serving future healthcare professionals and providing consumer health information to their communities. PubMed is a readily available free resource that TCU libraries can promote to their health sciences students, especially those who will continue their education in academic health sciences settings where use of MEDLINE will be expected. MEDLINEPlus includes a medical dictionary, a medical encyclopedia, prescription drug information, and resources specific to Native Health needs and makes a fine one-stop quick healthcare reference tool. TCU libraries can also highlight other free resources, such as Ingenta, Medscape, and the UNM Native Health Research and History Databases, which also include free document delivery for indexed articles.

Many TCU libraries also have access to health resources provided by state libraries, most commonly health databases provided through EBSCOhost and Gale Group, but, though they often provide full text of some articles that otherwise must be obtained through interlibrary loan, they are not always aimed at healthcare students or professionals. None of the libraries provide access to CINAHL, which, though it does not contain full text, is still considered by health sciences librarians to be the quintessential nursing and allied health database. TCU libraries may want to consider partnering with either the health sciences libraries in their region or with each other to provide some of the more expensive resources for their health sciences students. TCU libraries may also want to investigate participating in low-cost scholarly publishing alternatives, such as SPARC (the Scholarly Publishing and Academic Research Coalition), Biomed Central, and the Public Library of Science.

Conclusion

As other previous authors found with other library web sites, most TCU library web sites have a strong collection of library information and links to free research tools but lack instructional tools and need to update their sites more frequently and improve organizational schemes. TCU make excellent use of jointly licensed resources and free resources available on the web, but these tools are often presented in long alphabetical lists or divided into only the broadest of categories without explanation of the research for which these sources are appropriate. Other links, to both external and internal sources, are often broken. The most commonly linked tool is the AIHEC virtual library, which allows TCU libraries to provide their patrons with useful resources without the TCU librarian having to find time to maintain a multiplicity of links to resources.

Few TCU libraries provide extensive health sciences information, though the standard free resources are all available through the AIHEC virtual library. Funds are available, however, through government agencies such as NLM and IHS, to bring health sciences information to tribes, and several projects—Tribal Connections in the Northwest and in the Four Corners, Linking Native Americans to Health Information—are already underway. TCU libraries can improve these projects by working with project organizers to determine the health information needs of their tribes. TCU libraries can also work with each other and their local medical libraries to purchase more specialized health sciences information tools, such as CINAHL, for their patrons.

Suggestions for Further Research

This study focused exclusively on TCU library web sites. The actual users of these sites warrant further exploration. This study assumes that TCU patrons access their library web sites from non-campus, non-library remote locations without prior introduction to or familiarity with the web site as a research tool. Future study should focus on who uses these tools and who the sites' designers imagine and intend their audience to be; why these users use these tools (e.g. to find physical materials or to remotely obtain electronic holdings; to access known materials or to discover unknown resources); how they use these tools and whether and how this use could be more efficient; and from where (the library, somewhere else on campus, home, somewhere else completely) users access the site.

This study also made assumptions about the health sciences information needs of TCU library patrons. Additional scholarship could examine in depth the need or lack thereof for health sciences resources in the TCU library as perceived by students, faculty,

administration, tribal health care practitioners, health information consumers, TCU librarians, and the librarians at larger health sciences libraries who serve TCU patrons. Other possibilities for study include an examination of TCU economics and its effect on collection development, patrons' attitudes toward their TCU libraries, and means, methods, and potential for collaboration among TCU libraries and other institutions.

Appendix A: List of TCU Libraries Used in Study

	College Name	State	Reservation/ Tribe	Offered Programs	Library URL
1	Cankdeska Cikana Community College	ND	Spirit Lake Sioux Nation	Not listed	http://www.littlehoop.cc/info/library
2	College of Menominee Nation	WI	Menominee Indian Reservation	Ass. Arts & Sci. – Nursing	http://www.menominee.edu/library/home.html
3	Fond du Lac Tribal and Community College	MN	Anishinaabeg (Ojibwe)	Registered Nursing Assistant/Home Health Aide Ass. App. Sci - Registered Nursing Transfer Program	http://www.fdltcc.edu/web/Library/home.html
4	Fort Belknap College	MT	Fort Belknap Indian Reservation: Gros Ventre and Assiniboine	Ass. Sci. – Allied Health	http://www.fbcc.edu/library/
5	Fort Berthold Community College	ND	Fort Berthold Reservation: Mandan, Hidatsa, and Arikara	Ass. App. Sci. – Medical Secretary Cert. – Home Health Care Technician Cert. – Emergency Medical Services	http://lib.fbcc.bia.edu/FortBerthold/default.asp
6	Fort Peck Community College	MT	Fort Peck Indian Reservation: Assiniboine and Sioux	Ass. Sci – Science-Biomedical Cert. – Pre-Nursing	http://www.fpcc.edu/libr.htm
7	Lac Courte Oreilles Ojibwa Community College	WI	Ojibwa	Ass. Arts – Medical Office Mid-Management Ass. App. Sci. – Medical Assistant Ass. Sci. – Community Health Education Ass. Sci. – Pre-Nursing	http://www.lco-college.edu/library/

				Cert. – Medical Transcriptionist	
8	Little Big Horn College	MT	Crow	Not listed	http://lib.lbhc.cc.mt.us
9	Northwest Indian College	WA	Lummi Nation	Ass. Arts & Sci. – Allied Health	http://www.nwic.edu/lummilibr/
10	Oglala Lakota College	SD	Pine Ridge Reservation: Oglala Lakota	Ass. Arts – Nursing Ass. Arts – Life Sciences	http://www.olc.edu/library/libdex.htm
11	Salish Kootenai College	MT	Flathead Indian Reservation: Salish and Kootenai	Bach. Arts – Nursing Ass. Sci. – Nursing Ass. App. Sci. – Dental Assisting Technology Cert. – Dental Assisting Technology Cert. – Medical Office Clerk	http://www.skc.edu/cgi-bin/WebObjects/skcweb.woa/wa/main?iFrameURLv=192.206.171.5%2Flibweb%2Flib_main.html
12	Sinte Gleska University	SD	Rosebud Reservation: Lakota	Ass. Sci. – Biological Sciences	http://www.geocities.com/sguvl
13	Sisseton Wahpeton Community College	SD	Lake Traverse Reservation: Sisseton and Wahpeton Bands of Sioux	Cert. – Nursing	http://swcc.cc.sd.us/vlibrary
14	Southwestern Indian Polytechnic Institute	NM	Urban/any	Cert. – Optical Laboratory Technology Ass. App. Sci. – Ophthalmic Dispensing	http://www.sipi.bia.edu/Virtual%20Tour/Library/library.htm
15	United Tribes Technical College	ND	Urban/any	Ass. App. Sci. – Health Information Technology Ass. App. Sci. – Injury Prevention Ass. App. Sci. – Practical Nursing	http://www.unitedtribestech.com/library/index.asp

Appendix B: Criteria for Web Site Evaluation

Content

Library Information and Services

Library hours

Does the site include the hours of operation for the physical library?

Contact information

- Email
  Is an email address or a hyperlink with an email address for the library or the librarian available on the site?

- Mailing
  Does the site include a mailing address for the library?

- Telephone
  Does the site include telephone number by which the library or the librarian can be reached?

- Staff
  Is an email address, telephone number, or other contact information provided for individual staff members?

Directions to library

Does the site include written directions or a map with details for getting to the physical library?

Description of services or resources

Does the site include an explanation of what the library provides and how to access it?

Library news/events

Are library-related events listed, or is there news about changes in library services or resources?

Request forms

Are there forms online that patrons can fill out to request services or materials (such as interlibrary loan or the purchase of materials) on the site? (These options may be included in the OPAC or listed in a "patron information" section.)

Instructions for remote access

Are instructions provided for accessing licensed resources outside of the physical library?

Mission statement

Is the library's mission statement included on the site?

Policies/statements

Does the site include some sort of explanation, either formal or informal, of which services (library use, circulation, collection development, donations/gifts, other) the library provides and to whom?

Library publications

Are publications produced by the library, such as a newsletter or annual report, included on the site?

Job opportunities

Are open employment positions within the library listed?

Reference and Research Resources

Link to OPAC

Does the site provide a link to the library's online public access catalog or to a consortial OPAC that includes the library's holdings?

Link to search engine(s)

Does the site link to at least one search engine, such as Google, Altavista, or Hotbot?

Links to Internet subject resources/directories

Does the site link to internet subject resources or subject directories such as the Internet Public Library or the Librarian's Index to the Internet?

Dictionaries

Does the site provide a link to an online dictionary? Is it free or does it charge a fee?

Encyclopedias/factual databases

Does the site provide a link to an online encyclopedia or other factual database? Is it free or does it charge a fee?

Periodical databases

Does the site provide a link to an online periodicals database such as Ingenta? Is it free or does it charge a fee?

Full-text databases

Does the site provide a link to an online full-text database? Is it free or does it charge a fee?

Ejournals

Does the site provide a link to ejournals, such as those provided by the Highwire Press? Are they free or do they charge a fee?

Ebooks

Does the site provide a link to ebooks, including the online versions of government documents and classics available through Project Bartleby? Are they free or do they charge a fee?

News sources

Does the site provide a link to an online news source? Is it free or does it charge a fee?

AIHEC Virtual Library

Does the site provide additional resources by linking to the AIHEC virtual library?

Link to State Library

Does the site provide additional resources by linking to the TCU library's state library?

Link to State Consortium page

Does the site provide additional resources by linking to a page of library resources created for the TCU library's state?

Ethnic News Watch

Does the site provide access to Ethnic News Watch?

Instruction

Internet tutorials

Does the site provide a tutorial in searching the internet? Is it written specifically for the TCU library or is it a link to another institution's tutorial?

Library use/info literacy tutorials

Does the site provide a tutorial in searching library resources? Is it written specifically for the TCU library or is it a link to another institution's tutorial?

Virtual tour

Does the site include a description and picture of various parts of the physical library space?

Map of library

Does the site include a map or floor plan of the physical library?

Pathfinders to local resources

Does the site include a list of subject specific resources available in the library?

Workshop/class schedule

Does the site include a schedule of classes or workshops taught by the library staff on use of the library and library resources?

Functionality

Currency

Last update date or copyright date

Does the site include a date when the site was last updated or a copyright date?

Broken links

Are any of the links included on the site broken?

Organization

Search engine

Does the site include an internal search engine?

Site map

Does the site include a site map for ease of navigation?

Page levels (number)

How many layers of pages are included in the site?

Direct link from college top page

Does the college main page link to the library's page?

Direct link to college top page

Does the library link to the college's main page?

Design

Standard header/footer

Does the site include a standard header or footer on all of its pages?

Frames

Does the site employ frames for navigation?

Graphics

Does the site include graphics? Are they static or are some animated? Is the only graphic the college or library's logo?

Background

What kind of page background is used on the site? Is it white or white with a colored border, another color, or some sort of graphic design?

Audio

Does the site include audio?

Video

Does the site include video?

Alt Tags

Is alternative text provided for any graphics used?

Bobby approved

Does the site return accessibility errors when run through the Bobby (http://bobby.cast.org) utility? Are they Priority 1, Priority 2, or Priority 3 accessibility issues? Is the Priority 1 issue a lack of alternative text for the graphic?

Health Information Tools

Health Subject Section

Does the site include a specific section of health or health sciences resources?

General Tools

Medical dictionaries

Does the site provide a link to an online medical dictionary? Is it free or does it charge a fee?

Indexes/table of contents services

Does the site provide a link to an index or table of contents service, such as PubMed or Ingenta? Is it free or does it charge a fee?

Health encyclopedias

Does the site provide a link to an online health encyclopedia? Is it free or does it charge a fee?

Ejournals

Does the site provide a link to health sciences ejournals, such as those provided through PubMed Central? Are they free or do they charge a fee?

Ebooks

Does the site provide a link to health sciences ebooks, such as the Merck Manual of Diagnosis and Therapy? Are they free or do they charge a fee?

Full-text databases

Does the site provide a link to an online full-text database of health information? Is it free or does it charge a fee?

Directories/webliographies of health information resources

Does the site link to directories or webliographies of health information, such as Healthfinder.gov or WebMD?

Specific (Free) Resources

PubMed

Does the site link to PubMed, the free version of MEDLINE, the premier medical periodicals index?

MEDLINEPlus

Does the site link to MEDLINEPlus, a consumer health resource provided by the National Library of Medicine that includes a medical dictionary, a medical encyclopedia, prescription drug information, and resources for Native American health?

National Library of Medicine Databases

Does the site link to the National Library of Medicine main page or databases page, which includes links to PubMed and MEDLINEPlus?

Indian Health Service

Does the site link to the Indian Health Service, the relevant agency for tribal health within the U.S. Department of Health and Human Services?

Linking Native Americans to Health Resources (http://harley.med.und.nodak.edu/tcl/index.php)

Does the site link to the health information site created by the University of North Dakota for tribal libraries under a grant from the National Library of Medicine?

Tribal Connections (Northwest) (http://www.tribalconnections.org)

Does the site link to the health information site for tribal libraries created by the Tribal Connections project (through the University of Washington) under a grant from the National Library of Medicine?

Tribal Health Connections (http://www.tribehealth.org)

Does the site link to the health information site for tribal libraries in the Four Corners created by Tribal Health Connections under a grant from the National Library of Medicine?

UNM Native Health Databases

Does the site link to these databases of published health information and articles relating specifically to Native American health?

Appendix C: Web Site Evaluation Criteria Results

	Libraries																
Content	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**Total**	**%**
Library Information and Services																	
Library hours	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y		Y			11	73.3
Contact information																	
• Email		Y	Y				Y	Y	Y	Y	Y	Y	Y		Y	10	66.7
• Mailing	Y	Y	Y	Y	Y	Y	Y	Y			Y					9	60.0
• Telephone		Y	Y	Y	Y		Y	Y	Y	Y	Y		Y			10	66.7
• Staff			Y		Y			Y			Y					4	26.7
Directions to library		Y			Y		Y				Y					4	26.7
Description of services or resources		Y	Y		Y	Y								Y	Y	5	33.3
Library news/events			Y				Y					Y				3	20.0
Request forms																	
• ILL			Y				Y	Y								3	20.0
• Materials Purchase			Y				Y	Y								2	13.3
• Other-Reserve																1	6.7
Instructions for remote access											Y					1	6.7
Mission statement		Y	Y		Y					Y						4	26.7
Policies/statements																	
• Library use		Y			Y				Y							3	20.0
• Circulation			Y		Y				Y		Y		Y			5	33.3
• Collection development		Y	Y					Y			Y					4	26.7
• Donations/gifts								Y								1	6.7
• Other					Y						Y					2	13.3
Library publications																0	0.0
Job opportunities																0	0.0

	Libraries																
Content	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**Total**	**%**
Reference and Research Resources																	
Link to OPAC		Y	Y		Y			Y	Y		Y	Y	Y		Y	9	60.0
Link to search engine(s)	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	14	93.3
Links to Internet subject resources/directories		Y	Y	Y	Y			Y		Y				Y		7	46.7
Dictionaries • Free • Fee		Y	Y		Y			Y	Y		Y	Y	Y	Y	Y	10 0	66.7 0.0
Encyclopedias/factual databases • Free • Fee		Y	Y	Y					Y		Y	Y	Y	Y	Y	9 0	60.0 0.0
Periodical databases • Free • Fee		 Y	Y	Y Y	Y Y		Y Y	 Y		Y Y						5 6	33.3 40.0
Full-text databases • Free • Fee		 Y	Y Y	Y Y	 Y		 Y	 Y	 Y	 Y	 Y	 Y	 Y		 Y	2 12	13.3 80.0
Ejournals • Free • Fee			Y	Y	Y		Y			Y				Y		6 0	40.0 0.0
Ebooks • Free • Fee			Y	Y	Y Y				Y	Y	 Y	Y	 Y		 Y	6 4	40.0 26.7
News sources • Free • Fee			Y Y	Y	Y Y		Y Y	Y	Y	Y				Y Y		8 4	53.3 26.7
AIHEC Virtual Library		Y	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	13	86.7
Link to State Library	Y			Y	Y								Y			4	26.7
Link to State Consortium page	Y	Y	Y		Y			Y		Y		Y	Y		Y	9	60.0
Ethnic News Watch	Y		Y	Y	Y		Y	Y	Y		Y	Y				9	60.0
Instruction																	
Internet tutorials • Local • Link							 Y		 Y			 Y	 Y		 Y	0 5	0.0 33.3
Library use/info literacy tutorials • Local • Link		 Y							Y			Y			Y	3 1	20.0 6.7
Virtual tour Map of library					 Y									Y		1 1	6.7 6.7
Pathfinders to local resources																0	0.0
Workshop/class schedule																0	0.0

	Libraries																
Function	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**Total**	**%**
Currency																	
Last update date or copyright date		Y	Y		Y	Y		Y	Y	Y		Y	Y	Y	Y	11	73.3
Broken links				Y	Y	Y	Y	Y	Y		Y	Y	Y	Y		10	66.7
Organization																	
Search engine								Y							Y	2	13.3
Site map									Y			Y	Y		Y	4	26.7
Page levels (number):	1	3	3	2	3	1	2	3	3	2	2	2	2	3	3	mode: 3	n/a
Direct link from college top page		Y				Y	Y	Y	Y	Y	Y	Y			Y	9	60.0
Direct link to college top page	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	14	93.3
Design																	
Standard header/footer	Y		Y	Y	Y	Y		Y	Y		Y	Y	Y		Y	11	73.3
Frames				Y							Y					2	13.3
Graphics																	
• Static		Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y		Y	12	80.0
• Animated		Y														1	6.7
• Only logo							Y									1	6.7
Background																	
• White	Y		Y	Y	Y	Y		Y				Y		Y	Y	9	60.0
• Color							Y			Y	Y					3	20.0
• Graphic		Y							Y				Y			3	20.0
Audio																0	0.0
Video																0	0.0
Alt Tags		Y							Y			Y	Y			4	26.7
Bobby approved																	
Priority 1 Accessibility	Y		Y	Y	Y	Y	Y			Y	Y			Y	Y	10	66.7
Lacking Alt tags	Y		Y		Y	Y	Y			Y	Y			Y	Y	9	60.0
Priority 2 Accessibility	Y	Y	Y	Y	Y	Y		Y	Y	Y	Y		Y	Y	Y	13	86.7
Priority 3 Accessibility	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	15	100.0

	Libraries																
Health Information Tool	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**Total**	**%**
Health Subject Section		Y	Y		Y					Y						4	26.7
General Tools																	
Medical dictionaries																	
• Free		Y	Y						Y		Y	Y	Y		Y	7	46.7
• Fee																0	0.0
Indexes/table of contents services																	
• Free			Y							Y						2	13.3
• Fee																0	0.0
Health encyclopedias																	
• Free																0	0.0
• Fee																0	0.0
Ejournals																	
• Free																0	0.0
• Fee																0	0.0
Ebooks																	
• Free				Y						Y						2	13.3
• Fee																0	0.0
Full-text databases																	
• Free																0	0.0
• Fee			Y		Y		*		Y	Y	*				Y	5	33.3
Directories/webliographies of health information resources		Y			Y			Y		Y						4	26.7
Specific (Free) Resources																	
PubMed			Y							Y						2	13.3
MEDLINEPlus		Y	Y							Y	Y					4	26.7
National Library of Medicine Databases		Y			Y			Y		Y						4	26.7
Indian Health Service		Y	Y					Y		Y						4	26.7
Linking Native Americans to Health Resources	Y				Y											2	13.3
Tribal Connections (Northwest)		Y														1	6.7
Tribal Health Connections										Y						1	6.7
UNM Native Health Databases								Y								1	6.7

***** Libraries link to a collection of databases (e.g. Ebscohost, Gale Group) that most likely includes a health or health sciences selection, but the individual databases are not listed on the TCU web site or on the state/consortium web site.

Appendix D: TCU Web Sites and Other Library Web Sites

		Cohen and Still (1999)		Tolppanen, Miller, and Wooden (2000)	Angingu (2000)	
	TCU %	PhD-Granting %	Two-Year %	Medium-Sized %	HBCU %	Non-HBCU %
Content						
Library Information and Services						
Library hours	73.3			97		
Contact information						
• Email	66.7	100	78			
• Mailing	60.0	60	48	66.2		
• Telephone	66.7					
• Staff	26.7	72	52	82		
Directions to library	26.7					
Description of services or resources	33.3					
Library news/events	20.0	88	18	46.6		
Request forms	20.0	70	30			
• ILL	20.0			76.7	31	60
• Materials Purchase	13.3					
• Other-Reserve	6.7			21.1		
Instructions for remote access	6.7					
Mission statement	26.7			45.9		
Policies/statements	46.7	30	72			
• Library use	20.0					
• Circulation	33.3			80.5		
• Collection development	26.7			31.6		
• Donations/gifts	6.7			26.3		
• Other	13.3					
Library publications	0.0					
• Annual Report				13.5		
• Strategic Plan				12.8		
Job opportunities	0.0			30.8		

		Cohen and Still (1999)		Tolppanen, Miller, and Wooden (2000)	Angingu (2000)	
	TCU	**PhD-Granting**	**Two-Year**	**Medium-Sized**	**HBCU**	**Non-HBCU**
	%	**%**	**%**	**%**	**%**	**%**
Content						
Reference and Research Resources						
Link to OPAC	60.0	100	84	100	54	69
• Web	60.0			87.2		
• Telnet	0.0			58.6		
Link to search engine(s)	93.3	76	64	70.4		
Links to Internet subject resources/directories	46.7	44	46			
Dictionaries						
• Free	66.7					
• Fee	0.0					
Encyclopedias/factual databases						
• Free						
• Fee	60.0					
	0.0					
Periodical databases				90.2		
• Free	33.3					
• Fee	40.0					
Full-text databases				91.7		
• Free	13.3					
• Fee	80.0					
Ejournals				44.4		
• Free	40.0					
• Fee	0.0					
Ebooks				10.5		
• Free	40.0					
• Fee	26.7					
News sources				13.5		
• Free	53.3					
• Fee	26.7					
Subscriptions/Web databases (all)	86.7	98	72		54	90
AIHEC Virtual Library	86.7					
Link to State Library	26.7					
Link to State Consortium page	60.0					
Ethnic News Watch	60.0					
Instruction						
Internet tutorials		20	52	41.4		
• Local	0.0					
• Link	33.3					
Library use/info literacy tutorials		42	28	21.8		
• Local						
• Link	20.0					
	6.7					
Virtual tour	6.7			18		
Map of library	6.7			45.9		
Pathfinders to local resources	0.0	60	10			
Workshop/class schedule	0.0					

		Cohen and Still (1999)		Tolppanen, Miller, and Wooden (2000)	Angingu (2000)	
	TCU %	**PhD-Granting %**	**Two-Year %**	**Medium-Sized %**	**HBCU %**	**Non-HBCU %**
Function						
Currency						
Last update date or copyright date	73.3	88	70	56.4	46	79
Broken links	66.7					
Organization						
Search engine	13.3	58	6	54.9		
Site map	26.7			18.3		
Page levels (average number):	2-3		2-3			
Direct link from college top page	60.0			68.4	85	100
Direct link to college top page	93.3			63.9		
Design						
Standard header/footer	73.3					
Frames	13.3					
Graphics • Static • Animated • Only logo	 80.0 6.7 6.7			97		
Background • White • Color • Graphic	 60.0 20.0 20.0					
Audio	0.0			3.8		
Video	0.0			10.5		
Alt Tags	26.7					
Bobby approved Priority 1 Accessibility Lacking Alt tags Priority 2 Accessibility Priority 3 Accessibility	 66.7 60.0 86.7 100.0					

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