

Developing a State-of-the-Art Curriculum, Anticipating the Needs of 21st Century Educators

Amigos Fellowship Final Report, 2005

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Introduction

With the increased reliance on electronic materials in libraries, this Amigos-sponsored research was designed to evaluate the feasibility of creating a curriculum materials collection (textbooks, fiction and non-fiction juvenile literature, realia, and media materials) in an online environment. The study was to review the research on new library types created to meet the information needs of a specific set of users. Secondly, the research was to determine the extent that a library could provide an electronic curriculum material collection to support programs in education.

Finally, the research was to review the literature on the organization and structure of curriculum materials centers or libraries and to visit with practitioners in a variety of locations within the Amigos region and to assess how the facilities are used by students and faculty members. In addition, the objective of the research was to examine the level of cooperation between existing educational libraries within the same institution and the same region

Research Design

Unlike many professions, the impact of social, political, and economic changes dramatically effects teachers and school administrators. Many states, including Texas, are placing a premium on educating, recruiting, and retaining teachers to meet present and future educational needs. As with all scholastic endeavors, libraries provide resources for educators whether through traditional or electronic means. New teaching tools and equipment create an opportunity to advance the support and training of teachers. A state-of-the-art model for the 21st curriculum library would be built on electronic delivery of information.

The grant objective was to research the delivery of information needed by a specific group of users; persons begin trained to educate elementary and high school students. As part of that investigation, it was important to explore present curriculum libraries and learning facilities, talk to librarians and educators, and contact publishers developing electronic resources. As such, this final report is divided into sections concerning the organizational structure and guidelines for their operation, a short analysis of the site visits, comments about children's literature and textbook collections, and our model for a state-of-the-art electronic curriculum library.

CURRICULUM CENTERS AND THEIR GUIDELINES. The Curriculum materials are often separated into separate facilities because of the types of materials collected. Their collections can include large sets of textbooks provided in a variety of formats and sizes and only used during the adoption period of the items, kits and realia containing hundreds of pieces which are difficult to house and maintain, and types of items that are difficult to file and maintain such as large oversized picture books/pictures/graphics items for demonstration purposes. As with the presence of departmental libraries, curriculum materials centers are often organized to benefit their customers. However, many centers are segregated because of reporting structures, the lack of integration into the operation of an entire library system, or because of space concerns. Many centers report to a library director or dean while others report to the education dean.

During the grant period, the Association for College and Research Libraries (2003) approved new guidelines for curriculum materials centers which described elements essential for the "administration, services, and collections for curriculum materials centers in all university and college settings". Within the guidelines, the number of references to technology and electronic delivery of materials is limited. Within the Facilities section, it is stated that classrooms "should be equipped with technology appropriate for demonstration (and if possible, hands-on practice) of electronic and media resources." Within the Publicity section, "a web site should be used to publicize the CMS and should be linked to and from the library site and the education site. The web site should include, but not be limited to,

the resources and services of the CMC and links to appropriate curriculum materials sites, such as teaching activities, standards, children's literature, publisher, etc." In the Instruction section, webpages are mentioned and in the Outreach section, video conferencing and online means of delivering for distance learners are included. The Collection section suggests that resources should include print, non-print, and electronic materials, but no specific mention is made of electronic textbooks.

A literature search was not particularly helpful. While there were a few news reports of various kinds of experimentation with electronic textbooks and laptops, they were not as inspired as the information provided on the Texas eLearning Initiative (2004).

Texas must move aggressively to develop an educational finance and educational model to support electronic and online resources that provide depth and breadth of quality learning resources for the computer instructional process to all students...Pivotal to the initiative's success will be education, training and professional development for all educators...We believe that Texas must embrace a plan that provides a wireless, mobile computing device for every student in school districts and state charter schools by 2012.

Building on current statute and rule, we will establish a time line for all state-approved textbooks and course materials to be available in approved digital formats with full establishment by 2008.

No articles were identified that provide new models of delivery for curriculum materials although most schools of education author webpages with links to other useful webpages. Information on educational technology abounds with special attention to the delivery of course materials for the student. No specific work was identified concerning the creation of an electronic curriculum library.

SITE VISITS. The grant provided an opportunity to examine various types of curriculum centers within a number of states. Several sites within the Amigos region were selected based on location and the availability of a curriculum center. The facilities visited included Oklahoma State University (Stillwater, OK), Northwest Missouri State University (Maryville, MO), University of Texas (Austin, TX), University of Texas at Arlington (Arlington, TX), University of New Mexico (Albuquerque, NM), New Mexico State University (Las Cruces, NM), University of Missouri (Columbia, MO), Louisiana State University (Baton Rouge, LA),

and the University of Nevada at Las Vegas (Las Vegas, NV). Specifics concerning each site are being withheld.

The sites ranged from very traditional with no acknowledgement of technology to vital, technologically-rich centers encouraging future teachers to experiment with a variety of formats and materials. Some of the centers provided access to online curriculum materials. Yet, none were providing textbook collections online and in most of the facilities, no plans were being made to investigate this possibility. Electronic collections of other types of materials were limited. Most centers were managed by degreed librarians but this was not always the case.

State support for the distribution of curriculum materials varies greatly. Some states provide university libraries or centers with all approved curriculum materials while others do not. For example, the State of New Mexico supplies universities educating teachers with all materials. The State of Texas does not supply any materials to degree granting institutions but chooses instead to run a textbook program through the TEA Regional Offices.

If the university is responsible for the collections, they are usually not well funded and must rely on the center's director to seek materials from the textbook publishers willing to donate items. The collections varied greatly as to age, condition, accessibility, and use. Some of the collections are located in the school of education facilities and some are in the university library. Regardless of the location, most were crowded, uninviting, and did not have adequate space to accommodate students if they had wanted to view the materials. Most had limited hours of operation.

While each center provided unique arrangements for the textbook materials, it was obvious that most items were not fully integrated into library catalogs and full processing was often not provided. Materials might be arranged by publisher, by subject, or by grade level making them confusing to locate.

Most centers systematically disposed of the textbooks after the adoption period expired although this was not always the case. A variety of disposal methods were used, but most librarians agreed that the time and effort expended is extremely high given their

rate of use. All of the staffs expressed the need for more space as the publishers continue to expand their curriculum offerings. The space saved by providing an online collection potentially could alleviate this expanding workload.

Coordination between curriculum centers and university libraries was often minimal as they often reported to two different deans/directors. Communication in many institutions seemed non-existent as to what was collected or how the materials were used. The development and future planning for the collections seemed limited. The best arrangements provided for a librarian selecting all materials in education whether they were housed in the university library or a special curriculum center.

CHILDREN'S LITERATURE AND JUVENILE MATERIALS, REFERENCE COLLECTIONS, ETC. The curriculum centers provided a variety of collections such as items of children's fiction and non-fiction, reference materials for teachers, mixed media products, lateral and vertical files, and realia (games/ puppets/storytelling props). Most materials were arranged and easily accessible, but most had not considered providing any of these items electronically. The realia collections would not be possible to collect electronically although other types of materials are available on the Internet which might complement or substitute for these items.

Several librarians indicated that the physical item was imperative for the teaching/learning experience. The teachers needed to use the physical item with the children and the children needed to see the item or be exposed to the reading of a book. Yet, access to the materials electronically could have delivered the content in an environment currently popular with most children. An electronic juvenile book on dinosaurs could provide the learner with a different environment and bring various types of media into the process. While the multimedia experience is not new, the inclusion of these resources within curriculum centers seems to be largely ignored.

A few of the sites had learning laboratories and training facilities attached to the center. When other parts of the facilities appeared vacant, these areas were busy with student activity.

TEXTBOOKS AND TEXAS. In the State of Texas, curriculum materials are made available to school districts through regional centers. A site visit to the Region 10 office was disappointing as technology played no role in the collection nor was there coordination between the region, the schools, the universities educating future teachers, or the textbook publishers.

The Region 10 Office sponsored a textbook fair for teachers in the spring of 2005. Discussions were held with a number of textbook publishers of foreign language, health, and art materials as those textbooks were reviewed in 2005. A number of foreign language publishers were prepared or were preparing to offer electronic textbooks. Foreign language and mathematics materials are particularly well-suited for conversion and allow for supplementary audio portions and web page practice exercises. On the other hand, art textbooks publishers face many copyright concerns and permissions that will need to be addressed. In speaking to salespeople, it was evident that there is much work to be done before any school district could achieve the goals set forth in the Texas eLearning Initiative. Several of the publishers, notably Pearson Education, have college texts available electronically and have begun providing this format for younger students (Major, 2001).

The obvious advantage to publishers, educators, and students is the ease of updating and revising textbooks. School districts adopt textbooks for a period of time. The high cost of replacing books is enormous. Since an electronic textbook can be updated much more economically, more frequent editions and updates would be possible and should be cost effective. The electronic textbooks in use are delivered on compact disk and are loaded onto student desk or laptop computers. The resulting savings of warehousing and the expenses of textbook distribution would benefit both the publisher and the school districts. The second advantage would be for the students who are required to carry the materials often using backpacks on wheels. The weight of the textbooks carried by 4-12 grade school students can be limiting.

During the grant period, it became apparent that several initiatives were being conducted nationally involving electronic textbooks. Ishizuka (2004) describes a national

pilot program involving partnership between Vital Source and IBM. Vital Source (2004) provided the Personal Portable Library which contains 2,000 works (novels, historical documents, and major speeches) with an IBM ThinkPad computer. One of the schools was located in Forney ISD, Forney Texas. In the fall of 2004, the Forney ISD equipped fifth and sixth grade students in the Johnson Elementary School with laptops loaded with electronic textbooks for some subjects. The District's decision was made, at least in part because the textbook procurement process in Texas takes a special toll on fast-growing districts like Forney. School districts can only place orders for 103% of last year's enrollment. Additional textbooks cannot be ordered until the fifth day of school, thus setting up a chronic shortage of textbooks in areas experiencing rapid population growth. Even after the additional order is placed, it takes six weeks for the books to arrive at the school, leaving some student without materials for an entire reporting period.

Forney ISD Superintendent Mike Smith stated that the project "started as a simple solution to a problem. (Ezarik, 2004) " In a curriculum update titled 'Piloting a Paperless Curriculum', he stated, "We really start opening the doors for a child to be a discovery learner. It's really a whole new way to do school". A site visit to the school in February 2005 provided additional insight into the program. Mr. Bobby Milliorn was the principal of Johnson Elementary School at that time and he was enthusiastic about the program and felt that the experiment had merit.

Each fifth and sixth grader was issued a password-protected IBM ThinkPad laptop computer loaded with textbooks, resource materials and the capability to search, highlight, copy and paste. Mr. Milliorn reported the transition to using laptop computers was met with student enthusiasm and relatively few problems. He shared that the fourth graders were eagerly looking forward to the next school year so that they could participate. During the visit to a sixth grade mathematics class on a Friday afternoon, the students were finished with their session conducted from an electronic textbook and were quietly involved in searching the Internet for a math game in support of their lesson. The teacher was engaged and enthusiastic about the program.

LEGISLATION AND CURRICULUM MATERIALS IN TEXAS. Axelson and Hardy (1999) wrote that Jack Christie, a previous chairman of the Texas State Board of Education, suggested replacing textbooks with laptops. "...Texas does not have to wait years for the world-class system of public education that its people want and need..." Beginning in 1995, legislation permitted online materials to be used in place of textbooks but the adoption process never considered the updating to the textbook which fell outside the statutes and the science curriculum materials were frozen in time to comply with the law.

A bill (HB173) was introduced into the Texas Legislature by Rep. Grigg in 2003 related to the use of electronic textbooks in public schools was left in committee (State of Texas, 2003). By 2005, another House bill (HB4) introduced in the 79th Texas Legislature proposed a shift toward electronic materials and away from traditional textbooks, but the bill was not passed (State of Texas, 2005). The legislation would have expanded support for technology in public schools and would have increased support for laptops, electronic learning software, and library and research tools. But according to Garrett and Stutz (2005), students in Texas will not start the school year with the approved materials and the money for the books is being held. Since 2003, the State has delayed the purchase of textbooks creating problems in subsequent years. By increasing the time intervals between purchases, teachers are left trying to locate titles that are out-of-print and seriously out-of-date and replace volumes that are falling apart. Teachers prepared their lesson plans to match the new textbooks which were not delivered. While the technology is available to deliver much of the course content, Texas seems to be stuck in the mud and sinking fast. Stutz (2005) reported that the leading textbook producers would begin to ship the \$295 million textbooks once orders have been received from the Texas Education Agency, but the books will not be received before classes start.

EXAMPLES OF WEB-BASED CURRICULUM LIBRARIES. While the project was not successful in visiting a center that was acquiring or developing a web-based library of materials, many sites had developed impressive lists of webpages in support of teacher education. Rather

than providing books or other supplemental materials, the webpages provided links to useful resources.

The International Children's Digital Library (ICDL) is an example of compiling a digital library of resources for the use of children, parents, and teachers. The University of Maryland, Human-Computer Interaction Laboratory created the resource for children who do not have access to a diverse collection of books. NetLibrary provides a growing collection of juvenile literature (fiction and non-fiction) available for purchase. While many juvenile books are unavailable electronically, these resources can provide a library with a quality selection of children's literature that could be used to provide teachers and students examples of types of materials. It would be possible to catalog the NetLibrary and the resources provided in the ICDL and make the materials searchable through a database.

Dr. Lorie Roy, a professor in the Graduate School of Library and Information Science (GSLIS), University of Texas at Austin provided insight into the creation of a virtual library. In connection with a U. S. Department of Education Preparing Tomorrow's Teachers to Use Technology (PT3) grant to the Portland (OR) State University' Graduate Teacher Education Program in 1999-2002 to collaborate with the Northwest Indian College (NWIC) on the Lummi Reservation, north of Bellingham, WA, Dr. Roy was invited to join the project. She incorporated into the two graduate courses she taught in the spring semester of 2001 the creation of a virtual library of education resources for NWIC (Roy, 2001). This project could serve as a possible small scale model. It is with research and experimentation such as this that hopefully libraries will lead the way.

Delivering electronic textbooks to students is feasible although the initial costs of supplying laptops are expensive for any school district. University libraries are experienced in purchasing electronic materials and including them into their online catalogs. However, licensing and maintaining access to the content for multiple users complicates the acquisition process. For electronic books such as children's literature, juvenile non-fiction books, and reference titles, the acquisition is fairly straight forward. The library would purchase the title and possibly include it in their catalog. Purchasing an electronic textbook

with password access to websites would be very complicated if several students needed the item at one time.

A MODEL. <<http://www.utdallas.edu/~safley>>

Currently, a library could purchase or connect to a growing collection of juvenile fiction and non-fiction through leading electronic book providers such as NetLibrary or through websites making the texts available. Reference e-books are also growing in popularity through a number of e-book providers such as Gale, Oxford, and ProQuest. The harder question is how to license and provide access to state-approved textbooks. At present, publishers are gearing up to provide full access to textbooks and online support sites for many subjects particularly mathematics, social studies, and foreign language study. Experiments are already being performed to provide students with laptops loaded with the textbooks. Activity sites and games, databases of curriculum guides, and other webpages are linked to or purchased by diligent education librarians. What is missing in the equation is the large-scale purchase of state-approved textbooks. The licensing of these resources would be labor intensive. Yet, it is expected that within the next 3-5 years the acceptance of textbooks by educators, students, and politicians will be widespread. The acceptance of electronic textbooks along with their cost effectiveness and easy delivery will make the creation of a digital curriculum library a viable concern. While realia is best delivered in physical format, many of the libraries we visited did not collect this type of resource.

Conclusion

The model curriculum materials centers for the 21st century would provide easy access to the Internet and special webpages with collections of specific websites. In addition, the center would provide electronic books, ejournals, and databases for use online and for quick identification. In addition, the center might provide areas to experiment with media. The model would allow students to use and learn about non-print materials and create modules for classroom presentations. Centers that combine all the educational resources of the university under one administrator and supply qualified staff to assist learners and

instructors on the resources seemed to be most energized with learners and appeared to be the best funded of curriculum materials centers.

It is most important that all the resources are described through the library's catalog and that the materials are organized and maintained to allow for easy and timely access. While it might not be possible to create a digital library that would duplicate the curriculum materials centers visited with this grant, the transition to electronic resources soon will make the selection, maintenance, and organization of these resources viable.

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