FEATURE: REPORTS FROM THE FIELD

Spectrum of Value: State University Libraries Supporting K–12 Teachers

Laura Cameron, Louise Montgomery, Alora Bauer, Kathy Anderson, and Carolyn Filippelli

abstract: Academic libraries are often called upon to support their institutions by demonstrating value to their community and their state. Outreach to K–12 schools is a common tactic of college and university libraries, but traditional methods can be expensive or time-consuming. This case study describes a joint outreach endeavor by six academic libraries in the state of Arkansas to support elementary, middle, and high school teachers with an online Web directory, which is low-cost and easy to implement and maintain. Data are presented from a survey of K–12 teachers that examined their use of online, state-specific curriculum materials.

Introduction

State-funded research institutions continually seek to demonstrate their commitment and value to their state. State universities serve as economic and intellectual hubs for their surrounding communities and their states, yet many struggle to communicate their value to their constituents. Universities work hard to serve their states, with extension service centers often acting as the primary conduit between researchers and the community. Academic libraries recognize the importance of this work and can serve as vital partners in state outreach efforts.

For land-grant institutions, community outreach is often coordinated through the Cooperative Extension System, a nationwide educational network that is a joint project of federal, state, and local governments. It focuses on informational programming related to agricultural practices and community development. When academic libraries become involved in statewide outreach, they typically concentrate on K–12 students, with emphasis on improving the students’ information literacy skills and easing their transition to college. School-aged children are also the target of outreach efforts by colleges and departments, many of which host summer programs or work directly with local schools. Little research, however, describes library outreach to K–12 teachers, apart from information literacy and college-readiness initiatives.

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In this article, the authors present a case study in which academic librarians support K–12 teachers with an online directory of state-specific curriculum resources. Born from a desire to serve the state, this project was designed and developed collaboratively by representatives from college and university libraries across the state of Arkansas. The authors present their experience building, maintaining, and evaluating a Web directory, and they share data collected on Arkansas K–12 teachers’ use of state-specific curriculum materials in their lesson planning and teaching. This information may be useful to other academic libraries and librarians working to design low-cost outreach projects to support their state or community.

Literature Review

Academic Library Support of K–12 Education

The literature is rife with examples of academic library outreach to K–12 schools. The majority of these efforts seek to address the information literacy needs of precollege students and facilitate the transition from high school to college. Other reasons for outreach to the K–12 community include easing library anxiety, promoting higher education, and providing students with access to needed resources. A common theme among academic libraries working with the elementary, middle, and high school community is the desire to serve those teachers and support the mission and values of their institutions.

Library tours and instruction sessions are the most common form of service to the K–12 community. These offerings are often geared toward local high school students enrolled in college preparatory coursework. As technology and education have evolved, so, too, has library outreach to K–12 students. Newer programs support dual enrollment courses, in which students register simultaneously in two institutions, a high school and a college, and earn credits for both. Academic libraries also now deliver information literacy instruction to students enrolled in online classes, with special focus on learners in dual enrollment programs.

The literature surrounding outreach to K–12 students and teachers reveals several challenges. Funding is often required to start and maintain large outreach programs. Many of the programs discussed in the literature are funded, partially or fully, by grants. Staffing is also a frequent challenge for libraries, with personnel needs often exceeding the initial expectations of the planners. Additionally, staff turnover can interrupt efforts and threaten the sustainability of programs. As with any program, time is a limiting resource. Several articles in the literature address this challenge, noting time concerns for both librarians and K–12 teachers.

Overall, the literature provides many examples of outreach programs designed to provide access to resources or support K–12 teachers’ ability to impart information lit-
The literature lacks reports, however, describing outreach initiatives that support elementary and secondary education in broader curricular ways. The literature also says little about low-cost programs that are accessible to academic libraries with limited time and staffing resources.

### Teachers’ Use of Online Resources

Researchers have studied teachers’ use of online resources and their employment of information and communications technology for over three decades. It has been well established that teachers use the Internet to develop classroom instruction. A 2010 report from the National Center for Education Statistics titled “Teachers’ Use of Educational Technology in U.S. Public Schools” showed that 94 percent of teachers consulted the Internet sometimes or often for “instructional or administrative purposes.” A survey published that same year by the Public Broadcasting Service (PBS) and Carinwald Associates, a private research firm that studies educational issues, examined teachers’ use of media and technology. Key findings indicated that the “vast majority of K–12 teachers (97 percent) use digital media for classroom instruction,” which included the use of online lesson plans, activities, games, and simulations. Although the use of information and communications technology by K–12 teachers is well established in technology and education journals, the library literature has yet to address who should best provide access to online resources to these teachers.

### The Education Resources Portal

It is helpful to examine academic library support for K–12 teachers through the lens of a specific situation. During the 2017–2018 school year, the state of Arkansas served 479,258 students across 1,053 public elementary and secondary schools. In support of these schools and students, faculty and staff at higher education institutions across the state produce and disseminate resources and tools for use in the classroom. The Council of University of Arkansas College and Research Libraries (CUACRL) founded a task force in 2006 to make these materials accessible to teachers in the state. It launched the Education Portal Task Force, charged with “the mission of developing a shared Web site dedicated to providing information and tools to teachers K through 12 drawing from materials provided by various colleges, departments, and programs of the UA research universities.” The task force is also directed to “determine how the portal should be established and monitored” and to develop a plan for marketing and promoting it.

The task force created a Web directory, the CUACRL Education Resources Portal, which was designed and created by librarians from across the UA System. It was built as a stand-alone site in 2008 and migrated to Springshare’s LibGuides content management software in 2016. The Education Resources Portal provides visitors with annotated links to Web resources organized into broad subject areas. At the start of this research, the site consisted of a home page and 15 subpages with hyperlinked logos to UA System affili-
ates. Each subpage represented a subject and consisted of annotated links. The portal provided access to a total of 144 online resources, including university materials, state Web pages, and popular large-scale websites.

The Education Resources Portal received an average of 104 visitors per month in 2017. Although this usage has remained relatively steady, little has been done to increase site visits or ensure that the content and organization of the Web directory meet the needs of its primary audience. To remedy this, task force members designed a research study to investigate how online curriculum materials, such as videos, images, lesson plans, and statistical data, were used in Arkansas classrooms. Special attention was paid to the use of state-specific resources since the portal is primarily designed to provide access to such information. This study sought to discover what factors influence Arkansas K–12 teachers’ selection of curriculum materials and resources; how the state’s teachers currently use or desire to use materials and resources unique to Arkansas; and how the portal could support the identified selection and use behaviors.

Method

Research Questions

The primary questions guiding this research were:

- What factors, including material type, influence Arkansas K–12 teachers’ selection of curriculum materials and resources?
- Do Arkansas K–12 teachers currently use or desire to use curriculum materials and resources that are unique to Arkansas?
- Is a Web directory of state-specific educational resources needed by K–12 teachers?

Participants

Participants included teachers, administrators, and other staff employed at K–12 public schools across the state of Arkansas in the fall of 2017. To recruit as large a sample as possible, the research team collaborated with the Education Renewal Zone of the University of Arkansas at Monticello, which provides technical support and professional development to schools, to distribute the research survey to all but three school districts in the state. An estimated 25,000 teachers and administrators received an invitation to participate in this study.

Five hundred eleven individuals took part in the research survey. The majority of respondents were classroom teachers. Two hundred seventy were subject-specific classroom teachers (for example, teachers of geometry or physics). Forty-one were self-contained classroom instructors (for example, kindergarten teachers). Thirty participants were special education teachers. Administrators also responded to the survey; 45 participants identified as principals and 11 as assistant principals. See Table 1 for a breakdown of the study participants.

Respondents were asked to report their years of classroom experience. The majority of participants were mid- to late-career teachers, with only 8 percent of respondents having two years or fewer of experience. Twenty-eight percent of participants had 21 or more years on the job, and 34 percent had between 11 and 20 years of experience.
Participants represented all 10 subjects identified by the Arkansas Department of Education Curriculum Frameworks (excluding library and media services), as well as special education and life skills. The subjects with the greatest representation were English language arts (22 percent), mathematics (20 percent), and social studies (17 percent).

Table 1.
Educational positions of survey respondents

<table>
<thead>
<tr>
<th>Position</th>
<th>Percentage of respondents (n = 472)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-contained classroom teacher</td>
<td>9%</td>
</tr>
<tr>
<td>Subject-specific classroom teacher</td>
<td>57%</td>
</tr>
<tr>
<td>Student teacher</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Substitute teacher</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Teacher aide</td>
<td>2%</td>
</tr>
<tr>
<td>Cooperating classroom teacher</td>
<td>3%</td>
</tr>
<tr>
<td>Special education teacher</td>
<td>6%</td>
</tr>
<tr>
<td>Librarian or media specialist</td>
<td>2%</td>
</tr>
<tr>
<td>Instructional design or resource specialist</td>
<td>4%</td>
</tr>
<tr>
<td>Counselor</td>
<td>4%</td>
</tr>
<tr>
<td>Assistant principal</td>
<td>2%</td>
</tr>
<tr>
<td>Principal</td>
<td>10%</td>
</tr>
</tbody>
</table>

Participants represented all 10 subjects identified by the Arkansas Department of Education Curriculum Frameworks (excluding library and media services), as well as special education and life skills. The subjects with the greatest representation were English language arts (22 percent), mathematics (20 percent), and social studies (17 percent).

Design
Task force members designed a 13-question survey based on the primary research questions and past experience with the Education Resources Portal. The questionnaire included four demographic items, such as “What subjects do you teach this year?” and “Approximately how many years of classroom experience do you have?” Additional queries investigated how teachers searched for and used curriculum materials in the classroom. Respondents were asked to select from a list the types of materials they looked for and used, to identify resources they have employed in the past, and to rank resource attributes (for example, findability, cost, and reputation) by order of importance.

The survey also included two questions directly pertaining to the Education Resources Portal. Respondents were asked if they had ever used the portal. They were also requested to read a short description of the portal and, using a Likert scale, rate the likelihood that they would examine or use a tool fitting that description. Finally, the survey had an open-ended text question that asked, “In what ways do you currently use Arkansas based or related resources in your classroom?”
Results

Survey respondents were asked to identify, from a list, the types of materials they searched for when designing lesson plans, curriculum, or syllabi. Top responses included projects or activities (77 percent), assessments (71 percent), and videos (68 percent). Respondents could select “other” and write in their answers. Write-in responses included simulations, sheet music, and maps. Table 2 shows the chief types of materials participants sought.

When asked to select from a list of resources they have used when creating or delivering classroom instruction, respondents reported using YouTube most frequently. Eighty-eight percent of participants selected the video-sharing website. Forty-eight percent mentioned using Scholastic.com, and 47 percent told of consulting PBS.org. Less than 5 percent reported that they used the UA System resources included on the list.

Respondents were asked to rank resource attributes, including cost, familiarity, findability, modifiability, grade or reading level, reputation, recency, and user-friendliness. Thirty-three percent of participants ranked cost as most important. Forty-nine percent of respondents ranked user-friendliness or accessibility in the top three. Recency of resources, on the other hand, was ranked last or next to last by 67 percent.

When considering the origin of resources, 43 percent of respondents reported preferring to create their own curriculum materials. Fifty percent agreed that “curriculum resources created by local professionals” were appealing. Forty percent of respondents wanted to use resources developed by Arkansas state agencies. Thirty percent sought materials created by colleges or universities, and 16 percent looked for resources designed by public libraries.

One quarter of respondents reported having assignments in their curriculum that required students to use resources unique to their city, county, or state. Thirty-six percent reported teaching Arkansas history, and over half (52 percent) agreed with the statement “My students study Arkansas related topics.”

Ninety-three percent of respondents agreed with the statement “I use materials I find on the Web in my classroom.” Sixty-six percent of participants felt very or completely confident in their ability to find curriculum support materials on the Internet. Twenty-nine percent described themselves as moderately confident. Six percent felt not at all or slightly confident. Fifty-two percent agreed that they “talk to [their] school librarian about curriculum materials and resources.”
Of 394 respondents, 12 (3 percent) had heard of the Education Resources Portal at the time of the survey. After reading a short description of the portal, 74 percent of participants reported that they would likely or very likely use it. Eighty-seven percent of respondents agreed with the statement “Websites that organize instructional support materials by subject are useful for me.”

Responses to the open-ended question “In what ways do you currently use Arkansas based or related resources in your classroom?” were coded individually by two researchers. Twenty-six unique codes were assigned. The researchers found six broad types of answers: course subject responses, resource topic responses, resource format/type responses, access method responses, search method responses, and reason for use responses.

Thirty-nine percent of respondents mentioned the subjects they taught in relation to their use of Arkansas-specific resources. These subjects included fine arts, language arts, history or social studies, math, physical education and health, and science. The most commonly referenced subject was history or social studies, discussed in 17 percent of responses. In addition to noting the subjects taught in relation to state-specific resources, 11 percent of respondents reported the topic or content of the resources they search for and use, mentioning information related to careers, state resources and products, and state identifiers, such as the state bird or rock.

Thirty-seven percent of respondents discussed format in relation to their use of state-specific resources. Formats mentioned included lessons or curriculum (20 percent), curriculum standards (9 percent), and primary sources, statistics, or data (7 percent). Other format types referred to were maps, images, videos, field trips, and speakers.

### Table 2. Materials and resources sought by teachers

<table>
<thead>
<tr>
<th>Material / Resource type</th>
<th>Percentage of respondents (n = 413)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music</td>
<td>20%</td>
</tr>
<tr>
<td>Research or statistics</td>
<td>23%</td>
</tr>
<tr>
<td>Fiction text (picture books, chapter books, poems, short stories, etc.)</td>
<td>40%</td>
</tr>
<tr>
<td>Nonfiction text (textbooks, articles, etc.)</td>
<td>48%</td>
</tr>
<tr>
<td>Images</td>
<td>49%</td>
</tr>
<tr>
<td>Games</td>
<td>52%</td>
</tr>
<tr>
<td>Worksheets</td>
<td>53%</td>
</tr>
<tr>
<td>Technology tools</td>
<td>56%</td>
</tr>
<tr>
<td>Lesson plans</td>
<td>60%</td>
</tr>
<tr>
<td>Videos</td>
<td>68%</td>
</tr>
<tr>
<td>Assessments</td>
<td>71%</td>
</tr>
<tr>
<td>Projects or activities</td>
<td>77%</td>
</tr>
</tbody>
</table>

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This mss. is peer reviewed, copy edited, and accepted for publication, portal 19.4.
Nearly 17 percent of respondents discussed their methods for accessing state-specific resources. Of those who talked about access techniques, 52 percent indicated that they receive materials from their district or peers. Only 2 percent of participants mentioned libraries. Museums fared slightly better, with 6 percent of all respondents identifying museums as a resource for curriculum materials. Only 1 percent discussed university resources. Additionally, reasons for using state-specific resources were spoken of by 18.6 percent of respondents. Of these, nearly one in five mentioned student research projects.

Forty respondents identified specific resources they use in the classroom. From those responses, 30 unique resources were identified, including school system websites, professional associations, state departments, and subject experts. Eighteen percent of respondents who identified a specific resource mentioned the Crystal Bridges Museum of American Art in Bentonville, Arkansas. Other popular sources included the Encyclopedia of Arkansas History & Culture, the secretary of state website, and the Arkansas Activity Book for children published by the secretary of state.

Discussion

This study shows that K–12 teachers in Arkansas rely on resources and activities found on the Internet when designing and delivering classroom instruction at a rate similar to that found in national studies. Arkansas teachers use the Internet to find a wide variety of resources, including projects and activities, assessments, videos, lesson plans, games, images, and music. When selecting materials, teachers are concerned about cost, grade or reading level, and user-friendliness. They pay less attention to the reputation of the resources they use or the recency of the materials. Many instructors prefer to create their own materials for classroom use, but these teachers likely still use online resources when designing and developing their materials.

While teachers feel confident in their ability to locate information online, they rely heavily on large-scale websites, such as YouTube, PBS.org, and Khan Academy, a nonprofit organization that produces short educational videos. Because of this reliance, they may overlook valuable resources created and disseminated locally. Additionally, although teachers incorporate state-specific assignments and topics into their curriculum, they fail to utilize a wide range of state-created resources. The Arkansas Department of Education website, which is highly used, does not provide the rich variety of resources and materials teachers report using in the classroom. Despite K–12 teachers’ unfamiliarity with state-specific resources and their lack of awareness of the Education Resources Portal, the data suggest that the portal could be useful for them.

The Future of the Education Resources Portal

A Web directory offers great potential for serving the instructional needs of teachers. On a practical level, such a directory can be a valuable tool in highlighting the types of
resources that teachers need and use often. In addition, an Internet directory can function as an easy-access means of highlighting state-specific resources. Although state-related topics are taught across the curriculum, survey results indicate that Arkansas K–12 teachers currently use few state-specific learning materials. The CUACRL Education Resources Portal provides access to many such resources and should be counted as a valuable means of curriculum development for teachers in Arkansas, along with more popular national websites.

Focusing on the long-term benefits of the Education Resources Portal as well as the vision of what it should be and accomplish is a continuous challenge. Although many large-scale Web directories have shut down over the past few years, webliographies, best website lists, and small-scale Web directories continue to emerge in professional literature and on the open Web. This research shows a continued need by Arkansas teachers for curation of local, high-quality Internet content. The portal provides access to sites that contain a wide variety of material types used by K–12 teachers and could be used to augment curriculum with unique resources created by local educators and other experts. How, then, do we create and market a Web directory that meets the needs of users in the current information-dense landscape?

Based on the research presented here, the Education Resources Portal underwent a significant redesign in the fall of 2018. Whereas the original portal was essentially an online webliography made up of annotated links loosely organized by content, the newly designed portal is a flexible Web directory that allows users to filter and discover resources based on subject, resource type, and geographic location. In keeping with survey results, the portal emphasizes cost-effective materials and those that are freely accessible or open resources. Links to subscription content were removed. Links to popular, large-scale websites were also culled, allowing the portal to focus on high-quality sources that have local significance or are difficult to find using popular search engines.

Future challenges include increasing recognition of the Education Resources Portal as a significant resource and ensuring the continued engagement of teachers with the directory. While usage statistics for the portal show steady Web traffic, survey results indicate that a majority of Arkansas teachers are not aware of it. Moving forward, the Education Portal Task Force will need to determine best practices for raising awareness of the directory and work with the Arkansas Department of Education to advertise the portal to K–12 teachers. School librarians could provide another avenue for marketing, as 52 percent of teachers indicated they consult librarians about how to search for curriculum resources.

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Conclusions and Implications

The CUACRL Education Resources Portal and the findings of the research presented in this case study illustrate one way state research institutions can support their communities. An online Web directory is a low-cost outreach option that is easy to maintain. Providing teachers with access to hard-to-find, state-specific resources adds value to state curriculum and situates the academic library as a partner to elementary, middle, and high schools. Although Web directories may seem unnecessary in the current information age, K–12 teachers still need and desire support in finding and accessing high-quality instructional materials. State college, university, and research libraries are uniquely qualified to serve this need and should consider creating and maintaining a directory of resources for their constituents.

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Notes


5. Smith, “Dual Credit Library Instruction”; Bruch and Frank, “Sustainable Collaborations.”


