

Assessing an EAD Interface

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Archives and special collections perform important roles within an academic library. Their work to collect, catalog, store, and preserve enables researchers and patrons of the library continued access to rare, valuable, or culturally significant items that are needed for scholarly research. To assist researchers and ensure the long-term preservation of archives and special collection items archivists create detailed descriptions of items in their archives. These descriptions, referred to as finding aids, are multidimensional serving both the library and archivists' needs of preservation and storage as well as the research needs of patrons accessing archival materials (Duff & Stoyanova, 1998, p. 44). Finding aids are the "workhorse of archival practice" (Gilliland-Swetland, 2001, p. 200). These archival descriptions have been encoded in many forms throughout time from clay tablets to printed paper to advanced electronic displays. The adoption of computer and internet technologies in the late twentieth century enabled the creation of new electronic encoding formats for finding aids.

The Encoded Archival Description (EAD) is a digital encoding format for finding aids in an online environment (The Library of Congress, 2012). EAD is a relatively new archival description format. Based on computer markup languages (SGML and XML) EAD allows variability in display style (The Library of Congress, 2012) while being well structured and easily parsed by machines and humans. EAD and the World Wide Web extends the availability of the finding aid potentially reaching more patrons outside an archive's local community (Coats, 2004, p. 32). The use and display of EAD finding aids is an emerging field of study that has high interest in the academic community as academic institutions are beginning to encode their finding aids to the adopted EAD format (Hostetter, 2004, p. 123). Since the creation of EAD, academic archives and special collections have seen rapid changes in computer and networking

technologies including the increased use of mobile technologies. These changes provide an opportunity for academic archives and special collections to reassess and reevaluate their use of technology in meeting the needs of the mission of academic and research libraries (Zemsky and Wegner, 2007). To help patrons and staff discover and retrieve archival holding metadata the L. Tom Perry Special Collections encodes their finding aids using EAD and presents them using a web-based finding aid interface (HBLL, 2015). In 2008 archivists at the Perry Special Collections performed a competitive set analysis and usability study as part of a larger finding aids redesign process (Nimer & Daines, 2008). This research shaped the version of EAD presentation currently in use. In today's technology environment is the current EAD display meeting the needs of staff and patrons of the L. Tom Perry Special Collections? To further explore the above study question this paper investigates significant literature related to the effective display of EAD finding aids.

The literature covered in this review spans the last 20 years of research and includes twelve research studies exploring the usability of EAD by archives and special collections (Allison-Bunnell, Yakel, & Hauck, 2011; Chapman, 2010; Daniels & Yakel, 2010; Duff & Stoyanova, 1998; Hostetter, 2004; Kim, 2004; Nimer & Daines, 2008; Prom, 2004; Redding, 2002; Schier, 2006; Yakel, 2004; Zhou, 2007). Three research studies included content analysis of various academic institutions' use of EAD (Kim, 2004; Nimer & Daines, 2008; Zhou, 2007). Some studies exclusively used one or more surveys to gather research data (Allison-Bunnell et al 2011; Hostetter, 2004; Redding, 2002) while others combined a survey, usability test, and post-test interview (Chapman, 2010; Daniels & Yakel, 2010; Prom, 2004; Yakel, 2004). Nimer & Daines (2008) performed content analysis with a two-phase usability study while redesigning the

Perry Special Collection's EAD interface. One study gathered research data using focus groups to identify user needs related to the presentation of EAD (Duff & Stoyanova, 1998) and another asked remote participants to perform specific tasks with an EAD followed by a series of questions about their performance (Schier, 2006). Chapman's (2010) usability study is one study that gathered and analyzed quantitative data related to the speed a user took in completing tasks using an EAD. This stands in contrast to the studies focused on gathering and analyzing qualitative data about EAD display and use. These studies are primarily preliminary studies of a descriptive nature that limits their ability to extrapolate results for a wider audience of academic archives and special collections and their patrons (Redding, 2002; Schier, 2006, p. 76). The inability to apply these study results to a broader audience stands in opposition to the original intent of EAD. The intent is to extend the availability of finding aids outside of an academic archive or special collection's local community to patrons throughout the world using the World Wide Web (Coats, 2004, p. 32). Future studies should take this issue into consideration as the audience for EAD continues to expand.

These twelve research studies identify four major areas of interest related to assessing an EAD display: user groups, display elements, navigation and search, and content standards. Researchers point out that archivists have potentially missed the expanded audience of EAD and tend to prepare finding aids within an archivist-centric context that disregards the needs of other patrons (Cox, 2008, p. 8; Daniels & Yakel, 2010). Another viewpoint is that archivists preparing an EAD presuppose that the audience is already familiar with archives and special collections (Schier, 2006). The literature leans heavily towards assessing and evaluating the needs of all users, not just archivists and expert academic researchers. The assumption made in the literature

is that an EAD interface should allow for anyone to use it successfully with minimal to no help and strongly advocates for user-centered usability research (Yakel, 2004, p. 75).

A study interviewing patrons from institutions within the Northwest Digital Archives (NWDA) about their use of finding aids revealed a lack of academic institutions' understanding their patron's information needs (Allison-Bunnell, Yakel, & Hauck, 2011, p. 97). Prom (2004) observes that since the primary focus for archivists in previous years has been on standards and processes for material and tool creation "we therefore know relatively little about how users actually interact with the descriptive records that archivists prepare" (p. 237). Results of most studies show that archivists and experienced library patrons have the greatest levels of success with an EAD. Novice users struggle, and in some cases give up, when not able to quickly satisfy their information need (Chapman, 2010; Daniels & Yakel, 2010; Prom, 2004). In contrast to these results Schier (2006) found that novice users are quick to learn an interface and adapt through iterative use of the EAD. They also observed that users with the same level of experience and background had strikingly different experiences finding information with the EAD (p. 76). While the display of EAD has improved from earlier years there is a clear tension between trying to meet the needs of disparate user groups particularly when users of one academic library may not necessarily be the users for another library (Duff & Stoyanova, 1998). This gap in the literature provides opportunities for further assessment and research into concretely identifying EAD user groups and their needs (Allison-Bunnell et al., 2011, p. 97-98; Hostetter, 2004, p. 136). The existing research demonstrates that to effectively assess the display of EAD requires understanding EAD users and their needs.

Display elements used in an EAD are another theme central to the usability of a finding aid. Duff and Stoyanova (1998) performed a pioneering study using focus groups to identify a user's preferred online finding aid visual display. EAD displays following design guidelines that establish a clear visual hierarchy of all data elements was preferred over displays that mimicked paper finding aid display styles which typically ignore these design rules (Duff and Stoyanova, 1998, p. 65). Users are shown to struggle using an EAD when headings, folders, and items are formatted in ways inconsistent with their hierarchical order (Yakel, 2004, p. 73). Chapman's study (2010) helps identify display features (e.g. subject headings and quick links) that would benefit novice users as well as archivists and expert researchers in helping them ease into the finding aid (p. 26). "Usability of finding aids is enhanced by the presence of navigational features such as fixed and hyperlinked menus, a variety of help features, and series titles conveying the 'aboutness' of materials" (Chapman, 2010, p. 10).

An area of disagreement within the literature about EAD display elements is found when discussing the importance of "Web 2.0" features. "Web 2.0" is a broad term potentially meaning many things to many people. Nimer and Daines (2008) use the term in reference to commenting, social networking features, and RSS publishing feeds. They claim that these are essential features users need in EAD interfaces. Their research appears to include a confirmation bias towards including Web 2.0 features as they initially formed a list of desired features and conducted a study to confirm their bias. "The first objective defined in the [work breakdown structure] was user analysis, which we hoped would validate the feature list developed in the project [statement of requirements]" (p. 223). The results of their study led them to conclude that Web 2.0 features were important aspects of an effective EAD display. This contradicts the results found in a more

recent needs assessment study that Web 2.0 features were not significant features users want or need in an EAD interface (Allison-Bunnell et al., 2011). Traditional functions (e.g. archivist contact information, publication permission, getting copies of finding aids, downloading related content) were given far more importance for EAD users than Web 2.0 features. Participants saw Web 2.0 features as introducing user involvement with the EAD display that lacked expertise and credibility (Allison-Bunnell et al., 2011, p. 94).

A second area of disagreement over EAD display elements is whether the entire finding aid should be displayed on a single screen or divided up by hierarchical element over multiple screens. In a second phase of their usability study Nimer and Daines (2008) found that users preferred EAD content organized using multiple screens as opposed to providing the contents of the entire EAD on one single screen (p. 227-228). This approach is found to be less effective for users in another study that shows the benefit of presenting the entire EAD on one single web page (Prom, 2004). “The page’s simple design provided subtle but powerful visual clues” that enabled users to easily scan and find information within the EAD (Prom, 2004, p. 264). This is one area that will need additional research and study to accurately assess user’s wants and needs related to the visual display of elements in an EAD.

Navigation and search are a third theme that researchers found to play a significant role in an EAD interface. The EAD combined with the World Wide Web provides better searching particularly aligned with Bates' "berrypicking" search technique (1989). It also provides hyperlinks to related items or digital representations of archival materials (Gilliland-Swetland, 2001). Zhou (2007) performed a content analysis study focusing exclusively on search features within EAD. Results from this study showed that search capabilities varied widely across finding

aids. Varying implementations of search can lead to confusion where patrons aren't sure what to expect when using finding aids (p. 117). Current EAD search tools are effective for archivists and computer experts but became barriers to successfully completing search tasks for novice users (Prom, 2004; Yakel, 2004). Keyword searching is currently the best supported style of searching with an EAD but requires prior knowledge of specifically what to find using the EAD. In this way keyword search becomes a barrier to success using an EAD (Daniels and Yakel, 2010). The overall consensus points towards the need for more research related to the EAD search interface. Kim (2004) recommends from their study results that EAD should provide a broader set of access points (e.g. geographic names or names of people) to remove friction that users find when searching for information in an EAD. Hierarchical searching as well as comparing the effectiveness of keyword and subject searching are key areas identified by the literature as needing further study (Allison-Bunnell et al., 2011, p. 95; Chapman, 2010; Daniels and Yakel, 2010; Prom, 2004; Zhou, 2007). Improving the EAD search interfaces will lead to more effectively meeting the needs of EAD users.

A fourth area of focus in the literature relates to the content of the EAD metadata. EAD allows for a wide range of implementation within archives and special collections. This can lead to a lack of content and description standards which are shown to impede a patron from successfully using an EAD encoded finding aid (Cox, 2008; Gilliland-Swetland, 2001; Kim, 2004; Redding, 2002). Studies found that terminology used in the EAD had a significant impact on the effectiveness of the EAD meeting users' needs. Label and heading terms commonly used by archivists (i.e. fond, finding aid, scope, abstract) were vague and confusing for many EAD users not immersed in archival jargon (Chapman, 2010; Duff and Stoyanova, 1998; Kim, 2004;



Nimer and Daines, 2008; Redding, 2002; Schier, 2006; Yakel, 2004). Redding (2002) boldly states that "[f]or EAD to realize its goals of becoming a structure standard that enables true machine processing, implementers must stop focusing on its document-centric, presentational qualities" and instead "focus on the standardization of content within certain elements" allowing EAD to facilitate more effective knowledge exchange (p. 47). In his view creating quality content trumps quantity of content or else we will continue to "pollute the data pool" (Redding, 2002, p. 49). While the focus of EAD has been more on the implementation and presentation of archival descriptions rather than on the encoding (Zhou, 2007) it isn't clear what is truly important. Is high quality content released at a slower pace more important than higher quantity of content released at a faster pace. The literature leaves this area open for further study and exploration.

Hu (2012) noted that as technology continues to evolve and change at a rapid rate "we should expect that user behavior, preference, and expectation will likewise change over similarly brief intervals of time. Today's finding aid design or object display tool may not meet future needs (p. 190). In the last 10 years the world has seen rapid technology improvements with mobile technologies and the World Wide Web. The use of EAD interfaces on mobile devices is a glaring gap in the literature that would be beneficial to study. An interface that works on a laptop or computer screen may not always work for a smaller, touch-based screen. It may prove of interest to assess the use of archival materials on mobile devices and whether the current EAD interface meets mobile users' needs. The existing literature identifies other areas of disagreement or confusion related to EAD display that would also benefit with additional research. These include the use of Web 2.0 features, displaying the EAD on a single screen compared to using

multiple screens, hierarchical searching, keyword versus subject searching, and how to effectively balance the need for content standardization while not impeding users' access to archival information available through EAD. The use of recently developed standardized survey toolkits for assessing archives and special collections is another unexplored area in these studies that could provide a standard approach for conducting an assessment study of EAD finding aids (Duff et al., 2010; Yakel and Tibbo, 2010). Reviewing existing research related to EAD displays provides a firm foundation to study the most effective ways to present EAD metadata to staff and patrons of the Perry Special Collections holdings.

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