Are We Throwing Out the Books with the Bathwater? Dilemmas Over New Directions in Library Design

Charlie Smith, Liverpool John Moores University, United Kingdom

Abstract: The growing popularity of digital media has led to a fundamental reevaluation of the role of libraries as they strive to maintain their relevance to their
patrons' changing needs. This is having a significant impact on their design and
space use requirements, including a reduction in the areas dedicated to book
stacks. However, recent research suggests that the trend toward digital may be
changing with a resurgence of physical media. Is there risk of losing the
essential qualities that make libraries such distinct and appealing places as
stacks are replaced by more informal spaces and increasingly diverse activities?
This paper discusses trends in library design, investigates the long-term effects
of adopting new activities, and considers the extent to which these should
replace books. Referring to recent research on reading habits and to examples
of contemporary library architecture, it cautions against the wholesale relegation
or removal of physical books for a number of reasons – not least because
buildings evolve much more slowly than digital technologies and once
adaptations are made they are likely to be long-lived.

Keywords: Library Design, Space Use, Physical Books, Digital Media

#### Introduction

The rise of digital media has had a significant impact on library design and space use requirements. Some libraries are reducing their stacks, others are moving books to one side and some contain no physical books at all. In their stead are informal places and increasingly diverse activities; but in the rush to replace stacks with lounge areas, large cafés and maker-spaces do we risk losing those essential qualities that make libraries such distinct and appealing places?

Recent research suggests that trends toward digital formats may be changing, including a rise in physical book sales and preference for physical books amongst the young. If the resurgence of physical books continues, libraries looking to reduce or remove their physical collections risk losing a fundamental part of their essence. This concern is compounded by the fact that buildings evolve much more slowly than digital technologies and so once adaptations are made they are likely to be long-lived.

This paper explores trends in library design, the potential long term impact of adopting new activities on their design, and the extent to which books should be replaced by them. Taking a critical narrative approach and referring to recent

examples in contemporary library architecture, it advances the debate about the role of the library, their purpose and how patrons perceive them. It also helps inform discussion about what form they might take in the future. It focuses in on the extent to which physical books should continue to be a part of the internal landscape of libraries and how best to accommodate them.

The call to reconsider the relegation or removal of books from libraries is not merely a philosophical discussion about what a library with few or no books might be, or whether such a building should even be called "a library". Nor is it a nostalgic lament about the loss of books as physical objects. Rather, it is a call to examine whether something is being lost that may in fact be a fundamental part of what patrons want in their libraries and which once gone may be difficult to replace.

# Throwing Out the Books?

Predictions that the Internet and access to digital information would render libraries obsolete have thus far been unfounded (Gisolfi 2015; Dudley 2013; Latimer 2011; Worpole 2004). Nevertheless, the sands are shifting and embracing digital media is seen as crucial to maintaining the relevance and legitimacy of the library (Michnik 2014); reconceptualising services in line with the needs of the 21st century patron demands that libraries challenge convention (Carroll and Reynolds 2014). New library programmes include a broad spectrum of uses such as community facilities, creative and recreational spaces, health and well-being services, council helpdesks, gallery and museum spaces, cafés, cultural entertainment spaces, entrepreneurial start-up facilities and meeting rooms. As a result libraries are becoming much more informal places (Worpole 2004) and cater for an increasingly diverse population.

Not only are libraries changing the physical spaces and activities contained within, they are also challenging long held views about what types of places they should be. It is argued that the digital revolution has facilitated a reduction in the space occupied by book stacks (Gisolfi 2015), making way for new technologies and services (Outerbridge and Assefa 2011). Berndtson (2013) suggests that libraries of the future will predominantly be meeting places for people and ideas, not for the storage of books; a view supported by Aspenson, Poling and Scherer (2011). Soules (2014) anticipates that within five to ten years it is possible that almost all acquisitions will become digital and that in some libraries physical collections will dwindle to little or nothing.

The rise of digital content and the rethinking of the role of the library are having a significant impact on their design and space use requirements, resulting in substantial changes to their interior landscape. Against a backdrop of finite floor space and funding cuts, it seems logical for libraries to respond to pressure to

expand their brief and reduce, relegate or perhaps completely remove their physical collections of books.

There has been a consistent reduction in the number of books both stocked and borrowed from public libraries. The CIPFA (2014) library survey revealed that that between 2009 and 2014 the total number of books lent by UK public libraries fell by 20 percent; between 2013 and 2014 the number lent fell 6 percent, and their book stock dropped by 4.5 percent. However, it is not clear whether these reductions are due to changing reading habits or to the substantial number of library closures that occurred over the same time frame. The same survey also revealed that between 2009 and 2014 there was a loss of 337 libraries in the UK, a reduction of 7.5 percent. We should be extremely careful, therefore, when using figures about reduced borrowing to justify the reduction or removal of books from libraries.

The place of books in the new library landscape is evident in recent "super library" developments in the UK. This phrase is used to describe iconic large-scale buildings (Dyckhoff 2013), and the projects demonstrate key paradigms in contemporary library design. The Central Library in Manchester re-opened in 2014 after extensive refurbishment so that today the patron walks through the café and past large touchscreens and interactive table-tops before glimpsing a book – most of which are to be found on a different floor and are out of immediate sight.

A similar experience is to be had at two other recent landmark UK library developments - the recently refurbished Central Library in Liverpool, which reopened in 2013 after substantial modernisation, and the new Library of Birmingham also completed in 2013. On entering the Liverpool library the patron has a dramatic, sweeping view up through the atrium which connects all floor levels. All around the edges of this void are busy computer desks. The café is located adjacent to the entrance and immediately attracts the patron's attention. In terms of books only the popular fiction section is visible, some way in the distance. The main stacks are out of immediate sight and accessible only after moving up to the next floors and the old reading room is yet further removed. Similarly at the Library of Birmingham, only after moving a considerable distance inside the building will patrons come across any books. Initially they are confronted with the café, reception desk and exhibitions. Only once past these does their route meander through a dramatic configuration of circular and radiating shelves. It is vital to consider the message this use of a library's entrance space and subsequent rooms communicates to patrons (Latimer 2011).

Some libraries are moving their physical collections to shared off-site storage (Latimer 2011), or creating networks of local shared collections (Soules 2014). At the Joe and Rika Mansueto Library, University of Chicago, all books are

housed in an underground storage vault (Outerbridge and Assefa 2011). The BiblioTech library in Bexar County, Texas has no physical books at all and is the first all-digital public library in the United States.

As the transformation of libraries into more informal and diverse places gathers pace, important questions are raised about both the role and placement of the books that previously dominated them. How many should be removed and if those that remain are kept out of sight, are they also out of mind? Are designers complicit in a self-fulfilling prophecy whereby books are relegated to peripheral areas and so are used less and the less they are used, the more persuasive the argument for reducing their numbers becomes? How well could libraries respond to a shift back toward physical media?

## The Signs of a Book Backlash

The increasing availability of e-readers over the last decade initially corresponded with a noticeable fall in physical book sales. During 2010 Amazon reported that e-books had outsold both hardbacks and paperbacks (Dudley 2013), and between 2012 and 2014 sales of printed books dropped by six percent (BBC 2014). A 2011 study of perceived threats to public libraries in Sweden cited a decreased interest in reading and increasing availability of digital media as major concerns (Michnik 2014).

However, more recent research suggests that the trend toward increasing digital consumption may be changing. For example, high street physical books sales rose three percent in the first half of 2015 – the first increase since 2012 (Ruddick 2015); significantly, this trend was observed across both fiction and non-fiction (Milliot 2016). It is possible that the novelty of digital formats is waning, and that – like the resurgence in vinyl music, once thought of as dying but where physical albums have recently outsold their digital counterparts – people are realising the sensorial value of real, physical books. Or perhaps as so many people look at screens for work, physical books provide a welcome alternative when reading for pleasure (ibid.). For example, Baron (2015) asserts that studies show the majority of people prefer reading in print for reasons including it being more pleasant, less taxing, and leading to better learning. Similarly, Soules (2014) refers to studies which show that when reading full-length books many people prefer print, finding digital formats more difficult to digest.

A study by Nielsen Book Research found that three-quarters of children favour physical books, with over a third refusing to read their digital alternatives (Ruddick 2015). This somewhat startling research is supported by another study (Scholastic 2014), which found that while the proportion of US children who have read an e-book has increased, over three-quarters who had read an e-book said

most of the books they read are in print; furthermore, almost two-thirds of children agreed that they would always want to read books in print despite the availability of e-books. The majority of parents prefer print for their children believing it helps them focus more effectively and they also favour the look and feel of print (Baron 2015).

Yet more research reveals that, despite being so-called digital natives, higher education students often favour physical books over digital alternatives. A recent study in the US shows a significant – and unexpected – preference among students for physical books over digital media for long-term reading, both while studying and for leisure (Gregory and Cox 2016). In a different survey conducted by Hewlett Packard at San Jose State University, 57 percent of respondents preferred print textbooks; only 21 percent favoured the digital version, with the remaining stating they prefer to use both formats (Tan 2014). Interestingly the preference for print was much higher in the 18 to 35 year-old bracket – which accounted for three-quarters of respondents – at over 60 percent. This is supported by another study (Baron 2015), which found that 92 percent of students said they concentrated best when using physical books for studying.

Given these preferences for physical books among both children and young adults, are moves to demote or remove stacks from libraries premature? Interestingly, the Pew Internet study (Zickuhr, Rainie and Purcell 2013) on attitudes and expectations of public libraries found that 36 percent of the public surveyed said libraries should definitely not move printed material and stacks to provide space for services such as tech centres, meeting rooms and cultural events, whereas only 20 percent said that they definitely should do so; it also found that nearly three-quarters of patrons visit to browse the shelves for books or media and the same proportion to borrow print books.

#### **Dilemmas Over New Directions**

While those who sounded the digital death-knell for libraries have so far been proven wrong, debate still rages around what libraries are for. McPherson (2010) argues that they are not about housing books but are vehicles to deliver community cohesion, social inclusion, community engagement, equality and diversity. There is an increasing acceptance of the library as a community centre – a place for a variety of intellectual, cultural and social activities that foster the types of interaction that were previously frowned upon (Gisolfi 2015; Berndtson 2013). Sternheim (2016) proposes that libraries are increasingly becoming places of media production and creation, as opposed to consumption. Studies of public library use in Denmark and Norway revealed the majority of users did not visit to borrow or return books, but used libraries for other activities (Aabø and Audunson 2012; Niegaard 2011).

Eco (1996) suggests it would be culturally beneficial if digital books reduced the quantity of published volumes; a view echoed at the other side of the digital revolution by Pack (2016). Aspenson, Poling and Scherer (2011) argue that the diminishing use of printed material and cuts to funding will lead to the reallocation of space from book stacks to community learning and that libraries should condense collections to put their valuable space to greater interactive and creative use. Fewer books may indeed be better if it improves the quality of printed media but where should we draw the line?

It has been questioned whether virtual information sources invite a reader to explore as effectively as books do (Turner 2013). Baron (2015) argues that whilst it is easier to search digital information, reading physical formats is conducive to better concentration with fewer potential distractions, and she maintains that digital formats are shifting habits from continuous reading to skimming and scanning; a student described reading on paper as an active process and reading on screen as passive. On another level, the sight of book stacks signals the opportunity to browse the shelves and peruse their contents, an activity which engages more of our senses and provides a richer experience than searching and reading at a screen. As an analogy, consider the difference between studying a Warhol painting on a computer monitor compared to viewing it in an art gallery – engaging with a real artefact in a physical space. Even just the presence of physical books acts as a reminder of other worlds and times than our own (Turner 2013).

Research also suggests that the way users interact with digital content in libraries is changing. In England, the hours of use on library computers fell by 70 percent between 2012 and 2014 (BBC 2016). It is thought that this is due to patrons being increasingly able to access their own devices such as laptops, tablets and smartphones. Although libraries play an important role in providing access to technology for those who need it, which they should continue to do, there is a decreasing requirement for spaces with Information and Communication Technology (ICT) facilities. Just as the space dedicated to physical books has diminished, so too in the future will the space needed for library computers which will be largely replaced by superfast broadband with wireless access.

Edwards (2009) contends that a library fails if it does not evoke the character of its typology, and questions how architects can continue to signify its presence if digitisation has eroded the physical collections that were previously at its heart? He considers the book-based library to be an informed space, and the digital library a neutral space. Can the image and perception of "a library" survive in the public consciousness without the inclusion of such informed space or where it has been moved out of view?

Where stacks have been supplanted with more informal activities – such as hacker-labs, business start-up spaces, lounge areas and gyms – does this detract from the identity of a library? Or are those arguing to retain books as a principal element too blinded by the late nineteenth and early twentieth century notion that a library should facilitate generous access to books? Before this libraries often had restricted access to closed stacks creating a disconnection between physical collections and patrons in the reading rooms (Latimer 2011).

Massis (2015) argues that libraries must strike a balance between traditional and cutting-edge services to ensure their viability. However, in discussing the broadening social responsibilities libraries are adopting, Mattern (2014) questions whether the challenge to accommodate an ever-diversifying programme should be welcomed or if it has been stretched to its limit and whether a library's physical infrastructure can ever support such a diverse collection of agendas. Furthermore, if libraries do become increasingly informal places, orientated around wireless-enabled lounge areas and cafés, then arguably they lose those characteristics which make them distinct from other types of third places (Oldenburg 1989).

Worpole (2004) believes that the need to emphasise the civic quality of the library space remains a design priority but that the inclusion of an ever-increasing range of services will erode the library's identity. This is a view supported by Edwards (2009), who cautions that for the library to survive as a cherished social institution it must not become a crossbreed, and that designers have a responsibility to ensure their buildings convey a sense of "libraryness". However, as the services they offer have diversified, some libraries have rebranded as idea stores, learning cafés, discovery centres and media spaces (Black and Dahlkild 2011).

Getting the balance right is particularly important given that – unlike digital technology – buildings evolve slowly. Once adaptations to an existing library are made it is likely that they will remain for a long time. In addition, book stacks have particular structural implications, therefore new libraries designed to accommodate few or even no stacks may not be able to have them added at a later date. Furthermore, as the research above indicates, it is children and young adults – patrons for many years to come – who prefer these physical formats. We must be confident that any changes we make to the activities and spaces contained within libraries are justifiable and undertaken with the long term in mind.

### Books in the Library Landscape

It is clear that physical books must continue to be part of the interior landscape of libraries so we must next consider how shelves and stacks should be located and

arranged within them. In order to be both accessible and provide a strong visual cue to the library's identity, it seems logical that book collections be edited and condensed to reflect Eco's observations and interwoven within new programmes and spaces. This is unlikely if books are moved to peripheral spaces or relegated to back rooms where, hidden from view, they are less likely to be browsed.

Mattern (2014) suggests that the way a physical collection is stored and accessed shapes the library's intellectual infrastructure. She highlights that contemporary projects such as the Seattle Public Library and the Book Mountain in Spijkenisse, Holland still bring the books and stack to the fore, in contrast to the examples previously cited from the UK. Gisolfi (2015) sees changes in the relationship between books and patrons where, instead of dense stacks, library users sit in between the shelves of a more dispersed collection thus creating a calmer, more relaxed environment that is conducive to the serendipitous discoveries that happen when browsing the shelves. This kind of configuration facilitates a rich, sensorial experience where patrons engage with their physical surroundings.

Contrasting completely with this approach is the recently opened Chocolate Factory library in Gouda, The Netherlands. Here the adult collection has been shelved very densely in an area exclusively for book stacks, not interspaced with chairs or workspaces (Sternheim 2016). By reducing the floor space needed for book stacks, it enables a greater variety of activities within the building. Niegaard (2011) also imagines libraries of the future to require a tighter, denser layout for physical collections.

If, as suggested above, many people still prefer physical over digital media then the presence and accessibility of physical collections is crucial if these users are not to be alienated; a fundamental essence of the library is that it is a democratic and civic space provided for all. As well as their role as a point of reference and inspiration, books and stacks act as a visual cue signalling the meaning of library spaces. If books are moved to the side or out of initial sight, then opportunities to engage with them are diminished. Niegaard (2011) argues that while changes to libraries' resources are often described as moving from collections to connections, the focus should actually be on patrons having access to both physical and digital media. At the Seattle Central Library, for example, there was a deliberate intention to give equal priority to new and old media (Latimer 2011).

In addition to their physical placement, another consideration is to look at how books are curated. Large proportions of physical collections are not used and Soules (2014) maintains that the reason for this has never been answered satisfactorily. Meanwhile Sternheim (2016) suggests that presenting collection items in unusual and surprising ways will stimulate engagement and inspiration;

rather than traditional arrangements based around subject she advocates more disruptive juxtapositions through which the collection is actively made more accessible to provoke interaction and discussion. This requires rethinking the presentation of the collection rather like an art gallery exhibition, which might be curated around one of a range of themes such as chronology, movements and nationality as well as subject matter or creator.

Keogh (quoted in Goedeken and Lawson 2015) argues that it is the appropriateness and quality of the books in a library that matters. Eco also espouses quality but appropriateness is more challenging to address. The fact that people express a preference for printed books for particular types of reading could help shape physical collections. Another way to maintain the appeal and relevance of library stock is to develop it in response to patrons' requests, as opposed to those of library staff (Michnik 2014); this reflects a broader trend towards more bespoke library services that are tailored to their particular mix of patrons (Worpole 2004). Although writing about research libraries in particular, Anderson (2011) predicts that acquisitions will become patron-driven, even for printed media, and that most print stock will be created at point of need rather than being acquired on the basis of predicted use. By allowing patrons to define the physical collection, just as the books on our own shelves are reflections of each of us, the library's shelves become a reflection of its patrons and its community.

## Concluding Remarks

Mattern (2014) cautions that libraries must stay focused on their long term cultural goals. There are examples of libraries relegating books in favour of new activities, or even existing without them. It is easy to dismiss suggestions that physical books should be retained as nostalgia. This paper makes no suggestion that libraries should not change; their evolution to include more diverse activities and environments is vital and welcomed. It also recognises that digitisation has democratised access to information across a much broader population.

What it does argue, for two reasons, is that careful consideration be given to the role of physical collections over the long term. Firstly, research suggests that many people favour physical books over digital versions and that critically this includes children and young adults. Replacing physical books in favour of other kinds of spaces could potentially alienate these patrons of the future. Designers and librarians should consider carefully the presence and disposition of the physical collection: how patrons engage with books, both visually – as part of the interior landscape of the library – and physically – as they move through a library's spaces. Secondly, at a conceptual level books are a signifier of part of what a library is understood to be; a tangible, visible sign of learning, wisdom and

escapism. Without the physical presence of books we risk losing some of the library's identity. Are we throwing out the books with the bathwater?

The American essayist Robert Cortes Holiday (1919, 196–7) commented that, "Books are simply the material from which the library is fashioned ... Now a library is a structure, like a work of architecture, a composition, like a drama or a piece of music; like them it is the intelligible, conscious, and disciplined expression, in a concrete substance, of an idea." What is the idea of a library in our contemporary understanding and future vision, and what should the library be composed of? Physical books must continue to be a key material from which libraries are constructed; if we reduce their numbers too much, we won't have enough stones left to complete the building.

#### References

Aabø, Svanhild and Ragnar Audunson. 2012. "Use of Library Space and the Library as Place." Library and Information Science Research 34: 138–149. doi:10.1016/j.lisr.2011.06.002.

Anderson, Rick. 2011. "Collections 2021: The Future of the Library Collection is not a Collection." Serials, 24 (3): 211–215. doi:10.1629/24211.

Aspenson, Amanda, Jack Poling and Jeffrey A. Scherer. 2011. "The 21st Century Library Building – Adjust or Wither." Paper presented at The Effect of New Technologies on Library Design: Building the 21st Century Library conference, Atlanta, Georgia, August 10-11.

Baron, Naomi S. 2015. Words Onscreen: The Fate of Reading in a Digital World. Oxford: Oxford University Press.

Berndtson, Maija. 2013. "A 'People's Palace': Public Libraries and Placemaking." In Public Libraries and Resilient Cities, edited by Michael Dudley, 119–126. Chicago: American Library Association.

Black, Alistair and Nan Dahlkild. 2011. "Introduction." Library Trends 60 (1): 1–10. doi:10.1353/lib.2011.0025.

British Broadcasting Corporation (BBC). 2016. "Book Borrowing Figures Show Library Habits are Changing." Last modified March 29. http://www.bbc.co.uk/news/uk-england-35788332.

British Broadcasting Corporation (BBC). 2014. "Printed Book Sales Fall £98m in 2013." Last modified January 6. http://www.bbc.co.uk/news/entertainment-arts-25624856.

Carroll, Mary and Sue Reynolds. 2014. "There and Back Again': Reimagining the Public Library for the Twenty-First Century." Library Trends 62 (3): 581–595.

Chartered Institute of Public Finance and Accountancy. 2014. "CIPFA Library Survey Shows Continuing Decline in Buildings, Books and Borrowers as Cuts Continue to Bite." Accessed May 26, 2016. www.cipfa.org/about-cipfa/press-office/archived-press-releases/2014-press-releases/cipfa-library-survey.

Dudley, Michael. 2013. "The Library and the City." In Public Libraries and Resilient Cities, edited by Michael Dudley, 1–35. Chicago: American Library Association.

Dyckhoff, Tom. 2013. "Rise of the Super Library: From Birmingham to the World." BBC Arts, September 6. Accessed May 17, 2016. www.bbc.co.uk/arts/0/23976745.

Eco, Umberto. 1996. "Afterword." In The Future of the Book, edited by Geoffrey Nunberg, 295–306. Berkeley: University of California Press.

Edwards, Brian. 2009. Libraries and Learning Resource Centres (2nd edition). Oxford: Architectural Press.

Gisolfi, Peter. 2015. "New Trends that Define the 21st-Century Library." Advances in Library Administration and Organisation 33: 173–195.

Goedeken, Edward A. and Karen Lawson. 2015. "The Past, Present, and Future of Demand-Driven Acquisitions in Academic Libraries." College & Research Libraries 76 (2): 205–221. doi:10.5860/crl.76.2.205.

Gregory, Vicki L. and Kiersty Cox. 2016. "Must Printed Books Become a Thing of the Past in Academic Libraries?" The International Journal of the Book 14 4: 11–19. doi:10.18848/1447-9516/CGP.

Holliday, Robert Cortes. 1919. Broome Street Straws. New York: George H. Doran Company.

Latimer, Karen. 2011. "'Collections to Connections: Changing Spaces and New Challenges in Academic Library Buildings." Library Trends 60 (1): 112–133.

Massis, Bruce. 2015. "A New Golden Age for Libraries." New Library World 116 (9/10): 641–644. doi:10.1108/NLW-03-2015-0020.

Mattern, Shannon. 2014. "Library as Infrastructure." Places Journal June. Accessed May 17, 2016. https://placesjournal.org/article/library-as-infrastructure/.

McPherson, Blair. 2010. "Libraries are Vital Community Hubs." The Guardian March 19. Accessed August 16, 2016.

https://www.theguardian.com/books/2010/mar/19/libraries-are-vital-community-hubs.

Michnik, Katarina. 2014. "What Threatens Public Libraries? The Viewpoints of Library Directors in Sweden." New Library World, 115 (9/10): 426–437. doi:10.1108/NLW-04-2014-0033.

Milliot, Jim. 2016. "Print Book Sales Up Again in 2015." Publishers Weekly January 1. Accessed May 10. http://www.publishersweekly.com/pw/by-topic/industry-news/bookselling/article/69051-print-sales-up-again.html.

Niegaard, Hellen. 2011. "Library Space and Digital Challenges." Library Trends 60 (1): 174–189. doi:10.1353/lib.2011.0028.

Oldenburg, Ray. 1989. The Great Good Place: Cafés, Coffee Shops, Bookstores, Bars, Hair Salons, and Other Hangouts at the Heart of the Community. New York: Marlowe.

Outerbridge, Grant and Shimelis Assefa. 2011. "Space and place in the 21st Century Library." Accessed April 25, 2015. https://portfolio.du.edu/downloadItem/225464.

Pack, Justin. 2016. "Too Many Books on the Dance Floor: Borges, Arendt, and Ortega y Gasset on the Onslaught of Information." The International Journal of the Book 14 (1): 21–28.

Ruddick, Graham. (2015). "Waterstones to Stop Selling Kindle in Most Stores." The Guardian, October 7. Accessed May 10, 2016. www.theguardian.com/books/2015/oct/07/waterstones-kindle-stop-selling-most-

stores-books-ebooks.

Scholastic. 2014. Kids and Family Reading Report. Accessed May 26, 2016. www.scholastic.com/readingreport/key-findings.htm.

Soules, Aline. 2014. "Collections, Selection, Access – Where Next?" New Library World 115 (5/6): 263–271. doi:10.1108/NWL-04-2014-0040.

Sternheim, Joyce. 2016. "I have to Change to Stay the Same." New Library World 117 (1/2): 22–34. doi:10.1108/NLW-09-2015-0061.

Tan, Teri. 2014. "College Students Still Prefer Print Textbooks." Publishers Weekly July 8. Accessed September 16, 2016.

http://www.publishersweekly.com/pw/by-topic/digital/content-and-e-

books/article/63225-college-students-prefer-a-mix-of-print-and-digital-textbooks.html.

Turner, Ralph Lamar. 2013. "Collaborations Beyond the Cave: A Consideration of the Sacred in the Creation of Collaborative Library Spaces." Journal of Learning Spaces 2 (1).

Worpole, Ken. 2004. 21st Century Libraries – Changing Forms, Changing Futures. London: Building Futures and MLA. Accessed June 4, 2015. http://www.buildingfutures.org.uk/projects/building-futures/learning-environments-of-the-future-libraries.

Zickuhr, Kathryn, Lee Rainie and Kristen Purcell. 2013. "Library Services in the Digital Age." Pew Research Center's Internet and American Life Project. Accessed September 30, 2016. http://libraries.pewinternet.org/2013/01/22/Library-services/.