Fall is my favorite season of the year – it brings beautiful colors, harvesting festivities, and yummy apple cider doughnuts – and is also a great time to contemplate.

As I reflect on this past year and my role in learning design, I had a lot of “wait, what?” moments, especially whenever I got psyched about a new technology. On one hand I am grateful to have the luxury of experimenting with a variety of technologies, small (e.g., GooseChase) and big (e.g., a 65” touch screen). On the other hand, I am struggling with choosing the right one for the appropriate instruction! But do I have to choose any in the first place? What evidence should I glean from existing technologies used in teaching and learning? How do I measure their impact, if any? The list is going on and on...

If you are singing to the same chorus and plan to go to the ALA Midwinter conference in Denver, you do not want to miss LIRT’s Discussion Forum, App-etizing Instruction: Practical Tips For Teaching Emerging Technologies, on Saturday February 10 from 1 to 2:30 p.m.! A panel of librarians from various types and sizes of libraries will converse with the audience on issues pertaining to emerging technologies, their integration into instructional design, assessment, and more.

I am looking forward to seeing you in Denver and continuing the conversation on the joys and woes of emerging technologies.
Those of you who do not like winter weather or the hustle and bustle of the holiday season may not agree with me, but I do believe that early winter is a wonderful time of the year. In academia, the number of library classes slowly dwindles, and the students (and staff!) get excited about the upcoming winter break. Everyone seems a little nicer, and we all appreciate the warmth of the library on a cold day (we saw our first snowflakes of the season here in Lawrence, KS yesterday – Halloween!).

As you begin to make your New Year’s resolutions (if you do), consider trying to find time to read some of the great literature on information literacy and instruction that your colleagues have written. This month, Paula Johnson, co-chair of the LIRT Top 20 Committee, gives us a sneak peak into the process that the committee undertakes in choosing what they consider to be the best of the best list that is published every year in the June LIRT News.

You might also consider nominating one of your peers or your library’s instruction program for one of LIRT’s annual Awards – nominations are due by January 15th but are also welcomed early!

I want to take a moment to say a big THANK YOU to Susan Gangl, our LIRT News production editor who has been working with LIRT and LIRT News for many years. This is her last issue, as she will be retiring at the end of December. We will miss her expertise and her wonderful eye for taking great photographs, but we wish her many years of joyful retirement in the future.

This is a good time of year to take stock of all of the good in our lives. I hope that you can see the value that you contribute in the instruction that you provide. I wish you a wonderful holiday season, and I look forward to seeing some of you at ALA Midwinter in Denver!
LIRT MIDWINTER DISCUSSION SESSION
Saturday, February 10th from 1-2:30 p.m.,
at The Curtis Denver, Peek-a-Boo Ballroom

App-etizing Instruction:
Practical Tips For Teaching Emerging Technologies
Sponsored by: The LIRT Teaching, Learning, and Technology (TLT) Committee

Please join the committee and our panelists for this invigorating discussion

Emerging technologies pose new pedagogical challenges as libraries grapple with assessing their role and impact on learning and scholarship. This session will feature a panel of librarians from various types and sizes of libraries, followed by group activities and interaction where we will examine topics such as developing lesson plans and assessment methods, collaborating with faculty and other partners, and analyzing the issues these technologies present for millennials’ learning practices and habits.

• Let’s Do This: The 3D Printing Lesson Plan
  o Rachael Elrod, Head, Education Library, University of Florida
  o Neelam Bharti, Science Librarian, University of Florida
  o Sara Gonzalez, Science Librarian, University of Florida

• From Mediation to Motivation:
The Use of Emerging Technologies to Facilitate Millennial Learning in Academic Libraries
  o Liya Deng, Social Sciences, Eastern Washington University
  o Stan Trembach, Education Librarian/Assistant Professor, University of Northern Colorado

LIRT Award Nominations Open Through Mid-January

As you are writing your holiday to-do list, make sure you add “send in LIRT Awards submission” to it!

LIRT welcomes your submissions for two awards created to recognize excellence in information literacy and instruction. Submissions from all types of libraries (public, school, special, academic) are encouraged. Winners will receive a $1,000 award, a plaque, and a $500 travel stipend to be used to attend the 2018 ALA Annual Conference in New Orleans, where the awards will be presented.

The LIRT Librarian Recognition Award honors a librarian for her/his contributions to information literacy and instruction. The LIRT Innovation in Instruction Award honors a library for their innovative approach to information literacy and instruction.

Submissions will be accepted until January 15, 2018. For full details on how to apply for these awards or to nominate someone to receive them, please see pages 20-21 or visit the LIRT Awards site (http://www.ala.org/rt/lirt/awards).
Note: Steering I and Executive I will be held virtually in early December and mid-January respectively.

<table>
<thead>
<tr>
<th>Event / location</th>
<th>Date</th>
<th>Start</th>
<th>End</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steering II Meeting</td>
<td>2/10/2018</td>
<td>8:30 a.m.</td>
<td>10:00 a.m.</td>
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<tr>
<td>CCC Rm 110</td>
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<tr>
<td>All Committee Meeting</td>
<td>2/10/2018</td>
<td>10:30 a.m.</td>
<td>11:30 a.m.</td>
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<tr>
<td>CCC Rm 110</td>
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<tr>
<td>Discussion Forum: App-etizing Instruction (see p. 3)</td>
<td>2/10/2018</td>
<td>1:00 p.m.</td>
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<td>CURTIS Peek-a-Boo BR</td>
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<td>Executive II Meeting</td>
<td>2/10/2018</td>
<td>3:00 p.m.</td>
<td>4:00 p.m.</td>
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<td>CCC Rm 602</td>
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**CCC – Colorado Convention Center
**CURTIS – The Curtis Hotel

Bites with LIRT

Join LIRT for lunch in Denver!

LIRT (Library Instruction Round Table) is organizing a “Bites with LIRT” group for lunch at a moderately priced restaurant during the ALA Midwinter Conference in Denver. This is your opportunity to meet other librarians interested in library instruction while enjoying lunch in a local restaurant.

LIRT welcomes anyone who has an interest in instruction from all types of libraries. You need not be a member of LIRT to participate.

We hope you will join us in this opportunity to exchange ideas and experiences about library instruction in a relaxed setting. Enjoy a stimulating and fun lunch with LIRT – good food, good company, and interesting conversation. We will make the arrangements; all you have to do is reserve your spot and show up! Details to come - watch your email*!

Check the LIRT Bites page for more information coming soon [http://www.ala.org/rt/lirt/bites-midwinter](http://www.ala.org/rt/lirt/bites-midwinter)

*If you aren’t already on our listserv, sign up at [http://www.ala.org/rt/lirt/discussion-lists#lirt](http://www.ala.org/rt/lirt/discussion-lists#lirt)
“Best” is, of course, somewhat subjective. However, LIRT’s Top 20 Committee utilizes a process for evaluating the hundreds of library instruction and information literacy articles that get published each year. This feature will provide a brief look at the workflow and rubric that are used.

The Top Twenty List is printed annually in the June issue of the LIRT News, and includes selections from the previous calendar year. The committee does its work online, using Slack to communicate, Zotero to collect the library of articles, and Google Sheets to tabulate and summarize evaluators’ scores.

Using a comprehensive list of library instruction and IL publishing venues – supplemented with Google Scholar and other broader searches – committee members collect PDF copies of articles they deem review-worthy to put in Zotero. What makes an article worth evaluating? A quote from the committee rubric:

The Top 20 Article Committee considers journal articles that deal in a substantive manner with some aspect of library instruction. The Committee considers articles from a variety of contexts, e.g., academic, school, or special libraries. Articles may be international, the only requirement that they be in English. The article’s focus may be broad, e.g., information literacy instruction in general -- or very specific, e.g., relating to a particular discipline or type of material. The Committee also considers various types of articles, e.g., research articles; practice-based articles; conceptual or theoretical articles; and opinion pieces.

The full rubric features the following criteria, rated on a 0 (does not adequately address criteria) to 4 (exceeds expectations) point scale:

**Writing:** ideas/thoughts/argument expressed effectively; clear, logical structure; maintains reader’s interest and attention.

**Evidence:** uses relevant theory, practice, and/or literature to establish context and support/substantiate the argument or inquiry and any conclusions.

**Application to practice:** highly relevant to current issues in librarianship; offers practical information, strategies or solutions that are adaptable to different contexts; alternatively, for more theoretical/conceptual articles, offers insights that may inform practice; for research articles, informs practice and/or methods.

**Contribution to the field:** presents fresh perspectives, innovative ideas or research projects that expand or enhance current understanding; has the potential to advance practice or scholarship.

The articles chosen for evaluation are divided into groups to evenly share the whole set across pairs of committee members for a first round of review. Following this review -- but before the final appraisal -- members share review-worthy articles published from late November through December 31, which are then scored by two members. From the aggregate of all articles, a point cut-off is established that provides a pool for final review. All committee members score this last set of articles, and when there is diversity of opinions on a particular piece, discussion ensues. The top

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LIRT Top 20 Committee, continued on page 5
twenty point-earners are then determined, committee members write annotations for this set of articles, and the list appears in the June LIRT newsletter.

The committee hopes your response to the list is something like that of 2007 LIRT News editor:

“It’s that LIRT Top 20 time of year . . . that magical time of year when librarians leave copies of their articles under their pillows in hopes that the LIRT Fairy will select them as part of this year’s LIRT Top 20. I don’t know what it is about this time of year—maybe it’s in the air . . . or just a side effect of my medications—that makes me feel all tingly inside.

“Okay, okay . . . I might be going just a little over the top, but I do love reading the LIRT Top 20 (and I get to read it before all of you!). Why? Well, there are many reasons, but the main reason for me is just being able to browse some important articles in areas of library instruction that I’m not necessarily involved in…. I always find a couple of articles in the Top 20 that give me a new perspective on an idea—a new perspective that I probably wouldn’t ever find myself searching for in a database.”


Have you created an instruction program or developed a unique classroom strategy? Please share your experiences with LIRT! Send your articles to Sherri Brown (sherri.brown@ku.edu)
Library Instruction-Related Professional Development Reports

Session Title: How to Use Critical Thinking and the ACRL Framework to Identify Fake News

CRL Presenter(s) + Contact Info: Jeffrey Phillips, Instruction and Learning Services Librarian; Florida State University, jphillips@fsu.edu October 20, 2017 Audience: 2-year academic and 4-year academic
Report by: Alyssa N. Koclanes, Eckerd College, Peter H. Armacost Library koclanan@eckerd.edu

The Florida Association of College and Research Libraries (FACRL) 2017 conference theme focused on Fake News and Digital Literacy: The Academic Library’s Role in Shaping Digital Citizenship. There were five presentations and four posters related to the theme and a summary of one of the presentations is included below. The presentation titled “How to Use Critical Thinking and the ACRL Framework to Identify Fake News” focused on teaching students how to examine and evaluate news during a one-shot library instruction session. The presenter, Jeffrey Phillips, Instruction and Learning Services Librarian at Florida State University, included an interactive activity in the presentation that he uses with students in class on examining a fake news article. This evaluative activity combines the ACRL Framework for Information Literacy for Higher Education with Paul and Elder’s research on critical thinking standards.

Students evaluate a news article in seven key areas based on Paul and Elder’s critical thinking standards, which include relevance, significance, accuracy, depth, logic, precision, and clarity. The three frames of the ACRL Framework for Information Literacy for Higher Education included in the lesson are Authority is Constructed and Contextual, Research as Inquiry, and Searching as Strategic Exploration. The interactive fake news evaluation activity has students working in small groups to identify two characteristics of fake news, with all groups of students reading and evaluating the same article. The students answer questions on a handout related to the fake news characteristics they are identifying and then report back to the class as part of a whole class discussion to go over the evaluation criteria. Presenter Jeffrey Phillips noted that it is helpful to define fake news at the start of the class and the constructivist approach requires scaffolding. The presentation also noted that students are starting to be skeptical of all news now, even news from reputable sources. One suggestion was perhaps modifying the activity to have students evaluate a credible article instead of a fake news article. This was an interesting and engaging presentation with specific examples of how to replicate a lesson on teaching students how to evaluate fake news.

- Biggest takeaway: That most undergraduate students do not already know how to evaluate fake news and are starting to be skeptical of all news now, including articles from credible news sources.

- How you might use this information: The information from this presentation can be used by librarians to help design a lesson or class for undergraduate students on evaluating fake news.

- Links to all available materials including slides, video, notes, organization website; ask for permission/consent on sharing presentation materials: https://facrl.wildapricot.org/Presentations

Session Title: UNESCO Conference in Jamaica

Highlights of the Global Media and Information Literacy Week 2017 Feature Conference
The Seventh Media and Information Literacy Intercultural Dialogue (MILID) Conference, Kingston, Jamaica (24th - 27th October, 2017)
Report by Maria Cherrie, Librarian IV, National Library and Information System Authority, Trinidad & Tobago

During the period Tuesday, October 24 to Friday, October 27, 2017, I attended the Youth Agenda Forum and the Seventh Media and Information Literacy Intercultural Dialogue (MILID) Conference in Kingston, Jamaica. The conference was part of UNESCO’s Global Media and Information Literacy Week 2017 activities (for further information see: https://en.unesco.org/global-mil-week-2017).

Day 1 - Youth Agenda Forum, Caribbean School of Media and Communication (CARIMAC), The University of the West Indies (UWI), Mona, Jamaica
Local and international youth leaders and youth representatives from over 10 countries shared the ways in which Media and Information Literacy (MIL) influenced their lives, their advocacy work, and their communities. The day’s agenda included panel discussions, performances, a sofa sit-down session, and an interactive group activity as part of the “Building the MIL CLICKS Cloud” presentation. MIL CLICKS (an acronym for Media and Information Literacy, Critical Thinking and Creativity, Literacy, Intercultural, Citizenship, Knowledge and Sustainability) is a UNESCO initiative to foster critical thinking and a responsible approach when engaging with content on the internet and on social media environments (for further information see: https://en.unesco.org/MILCLICKS). An MIL CLICKS pact was distributed to the attendees, which encouraged them to commit to being MIL Clickers, namely, that they would pledge to review before they clicked, posted and shared information. The winners of the MIL CLICKS Video Competition were announced at the end of the day’s sessions.

Library Instruction-Related Professional Development Reports, continued on page 8
Session Title: UNESCO Conference in Jamaica, continued

Days 2 and 3 - Seventh MILID Conference, Jamaica Conference Centre, Kingston, Jamaica

200 individuals from 40 countries attended the feature conference. Media and information professionals, filmmakers, journalists, professors, university faculty, librarians, university students, social media entrepreneurs, and senior representatives from the Government of Jamaica and the sponsoring organizations (e.g. UNESCO, IFLA, UWI, Broadcasting Commission of Jamaica) were in attendance. This year’s theme was Media and Information Literacy in Critical Times: Reimagining Ways of Learning and Information Environments. The publication, entitled Survey on Privacy in Media and Information Literacy with Youth Perspectives: UNESCO Series on Internet Freedom, was launched at the feature conference (for further information see: http://unesdoc.unesco.org/images/0025/002589/258993e.pdf). Four recipients of the 2017 Global MIL Awards from the Global Alliance for Partnership in Media and Information Literacy (GAPMIL) were announced on the opening day of the feature conference (for further information see: https://en.unesco.org/news/2017-global-media-and-information-literacy-award-organizations-four-countries-recognized).

The importance of MIL as a tool to teach youth to critically evaluate information, especially in today’s world where misinformation and fake news are pervasive in traditional and social media was emphasized. Individual and collaborative MIL initiatives at the school, university, and national levels were presented. A common thread in the presentations was that supportive leadership contributed to successful outcomes. Moreover, MIL needs to be contextual and grounded in cultural reality. One of the presenters made an interesting point that persons who influence us and persons who we influence are part of the literacy education process.

Day 4 - Visit to the UCC Blue Mountain Coffee Craighton Estate and the Blue and John Crow Mountains National Park: A UNESCO World Heritage Site

The visits to the UCC Blue Mountain Coffee Craighton Estate and the Blue and John Crow Mountains National Park were thoroughly enjoyable. My four days were filled with critical thinking, global intellectual discourse, camaraderie, warm hospitality from the Jamaican and international organizers, and delicious Jamaican food and drink. I would encourage media and information professionals to attend an MILID conference in the future.

Photo 1, left: Ms. Zahra Burton, Founder, Global Reporters for the Caribbean, Executive Producer, 18° North (with microphone) facilitated a session with youth leaders who shared their MIL experiences at the Youth Agenda Forum.

Photo 2, lower left: UNESCO representatives, youth attendees, and presenters posed in front of the MIL CLICKS cloud banner during the Youth Agenda Forum.

Photo 3, below: Breath-taking view taken from the Blue and John Crow Mountains National Park, a UNESCO World Heritage Site.


Dear Tech Talk:

I’m not even sure I want to go down this road, but I feel like I have to. I know very little about the blockchain, beyond recognition of the word and a connection to Bitcoin. I have no idea whether the blockchain will ever apply to libraries, and yet I think it’s something I should know more about.

– Befuddled by Blockchain

Dear BBB – Blockchain is an interesting technology that some feel is the next transformative technology to revolutionize the internet and others – not so much.

Starting with Wikipedia: “The first distributed blockchain was conceptualized by an anonymous person or group known as Satoshi Nakamoto in 2008” and implemented the following year as a core component of the digital currency, Bitcoin, “where it serves as the public ledger for all transactions” (https://en.wikipedia.org/wiki/Blockchain). The abstract of the Nakamoto (2008) paper stated:

We propose a solution to the double-spending problem [spending the same money a second time] using a peer-to-peer network [distributed network]. The network timestamps transactions by hashing them into an ongoing chain of hash-based proof-of-work [PoW], forming a record that cannot be changed without redoing the proof-of-work. The longest chain not only serves as proof of the sequence of events witnessed, but proof that it came from the largest pool of CPU power. As long as a majority of CPU power is controlled by nodes that are not cooperating to attack the network, they’ll generate the longest chain and outpace attackers. (p. 1)

This information is helpful but may not provide much enlightenment about the blockchain for a layperson. At its simplest, the blockchain is a distributed digital ledger. An example of a ledger with which many of us are familiar is the checkbook. With a check, you record the date and details of a specific financial transaction – you write and sign a check (with an ID number) to the grocery store on November 1, 2017 for $249.38. But, more likely, you use a debit or credit card to pay for your groceries and record the transaction in a software program – moving from an analog to a digital representation. This software program becomes a digital ledger, but it is not distributed or public. It is your personal digital ledger, located on your personal device (or perhaps your personal space in the provider’s cloud), where you record your financial transactions, and most likely the only other entity to interact with it is your bank in order to verify/synchronize your transactions.

A blockchain is a digital list (database) of timestamped (ordered) transactions that is publicly available. By using metadata in headers, each set of transactions (a block), is cryptographically linked (with hash technology) to the previous block, thus creating a chain of blocks, all linked to each other, all the way back to the very first set of transactions. By using hashes...
based on metadata from the previous block (including its hash), blockchains become virtually immutable – giving true meaning to “digitally set in stone” – if one tiny element is changed in an earlier transaction, all of the hashes in subsequent blocks would have to be changed, which is computationally monumental, and becomes more monumental as the blockchain lengthens.

Along with hash cryptography, the blockchain also uses public and private key encryption (https://blog.vrypan.net/2013/08/28/public-key-cryptography-for-non-geeks/) to verify that the entities involved in the transactions are who they say they are. Alice uses her private key, which only she has, to make a transaction. The successful use of Alice’s public key (a key that Alice makes publicly available for anyone to use) verifies that it is indeed Alice making the transaction.

An essential feature of the blockchain is its use of peer-to-peer, distributed networks (as opposed to centralization), meaning that an identical copy of the blockchain exists on many, many, nodes (computers) throughout the internet. This distributed network eliminates issues such as a single point of failure, hackers attacking the system, or one entity having too much control. However, the distributed network gives entrée to the issue of ensuring the identicalness of all of the blockchain copies throughout the network.

With the Bitcoin blockchain, each node is considered a “miner” and computationally determines if a proposed block can be verified and should be added to the blockchain. Once the initial determination is made, additional nodes verify the solution (a much simpler task). After consensus is reached among the majority of the nodes, the block is added and all copies of the blockchain are reconciled/synchronized. The node making the first determination is rewarded through a Bitcoin payment. When more than one node makes the determination simultaneously, the block is added to the longest blockchain.

One other key component of the blockchain is that it is – for the most part – completely open and transparent. Anyone in the network can see all of the transactions. The exact identity of the parties involved in the transaction may not be visible because the public/private key technology both verifies and protects identities. By virtue of having been added to the blockchain through the consensus process, everyone in the blockchain trusts the validity of the transaction and those involved. Consequently, the blockchain has been called the trust machine (Anonymous, 2015c), the trust layer (Mougayar, 2016), and a trust protocol (Tapscott and Tapscott, 2016a, p. 6).

At this time, there is quite a bit of hype surrounding blockchain technology, with many suggesting that blockchain technology represents a new technological era:

- Michael Versace, global research director for digital strategies at IDC (International Data Corporation), referenced the third platform of technology (computing available anywhere immediately and allowing organizations to deploy and consume computing resources in shared communities), with the first platform being mainframe computers and their networks and the second being the Internet, personal computers, and local area networks (Underwood, 2016, p. 15);
- Howley (2016) suggested that the blockchain is the fifth wave of disruption, following mainframe computing, the personal computer, the internet, and mobile and social networking (p. 14);
- Mougayar (2016) proposed that the blockchain is the second significant overlay on top of the Internet, with the Web being the first layer back in 1990;
- Marvin (2017) advised that with the blockchain, “we finally have the technology to power Web 3.0”; where Web 1.0 was an internet of static web pages and Web 2.0 added dynamic user-generated content and the rise of social media (pp.108-9); and
- Iansiti and Lakhani (2017), as well as Aste, Tasca, and Di Matteo (2017), described the blockchain as a foundational technology – having the “potential to create new foundations for our economic and social systems” (p. 120 and p. 113).
Whether blockchain technology represents a technological paradigm shift or not, it is clear that interest in the blockchain is growing. The chart below demonstrates the growth of the Bitcoin blockchain that started slowly in January 2009, but increased significantly in 2012, and currently sits at nearly 140 GB.

Additionally, players including ASCAP, IBM, Microsoft, MIT, Samsung, and Sony are actively investigating the blockchain. But why? What uses beyond Bitcoin could be generating this interest? According to Derek White, Barclays’ chief design officer, “Anything that requires proof of ownership through paper today can be replaced by the blockchain” (Aron, 2017, p. 18). Marvin (2017) stated, “When it comes to digital assets and transactions, you can put absolutely anything on a blockchain” (p. 92). Tapscott and Tapscott (2017) touted that, “The blockchain can be programmed to record virtually everything of value and importance to humankind, starting with birth certificates and moving on to educational transcripts, social security cards, student loans, and anything else that can be expressed in code” (p. 14). These statements cover a wide range, but they all reference value that can be represented digitally. In fact, Tapscott and Tapscott (2016a) suggested that with the blockchain, we’re moving from the Internet of Information to the Internet of Value (p. 6).

More insight into potential uses for the blockchain comes from a 2016 Deloitte survey of blockchain-knowledgeable senior executives from organizations with $500+ million annual revenue. The table below implies that consumer product/manufacturing companies have taken the initial lead, but life sciences/health care is right behind them, with a significant uptick planned for 2017.

<table>
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<tr>
<th>Type of Company</th>
<th>Currently Deployed</th>
<th>Planned for 2017</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>Consumer Products/manufacturing</td>
<td>30%</td>
<td>28%</td>
<td>58%</td>
</tr>
<tr>
<td>Life Sciences and Health Care</td>
<td>17%</td>
<td>35%</td>
<td>52%</td>
</tr>
<tr>
<td>Tech, Media, and Telecommunications</td>
<td>31%</td>
<td>17%</td>
<td>48%</td>
</tr>
<tr>
<td>Financial Services</td>
<td>12%</td>
<td>24%</td>
<td>26%</td>
</tr>
</tbody>
</table>

The strong interest from the health care sector is not entirely surprising. The Affordable Care Act emphasized the implementation of electronic medical records, and those in the health care profession have struggled with a number of issues – not the least of which is siloed data, lack of standardization/interoperability, maintaining secure data for HIPPA compliance, etc. However, in announcing their Blockchain Challenge in summer 2016...
TECH TALK, CONTINUED FROM PAGE 11

(https://www.healthit.gov/newsroom/blockchain-challenge), the Department of Health and Human Services demonstrated the potential they see for blockchain technology to provide some solutions and announced 15 winners in September 2016 (https://www.cccinnovationcenter.com/challenges/block-chain-challenge/view-winners/). As an example, one of the winners, MedRec, is an “MIT initiative creating a blockchain to serve as a digital family history of medical records [. . .] with MedRec blockchain, families and medical providers can create a shared medical history that can be passed from generation to generation.” MedRec also facilitates the sharing of medical data, regardless of the provider – interoperable while protecting the data from fraud (Marvin, 2017, pp. 110-11).

Another discipline – one closer to home – is education. Imagine an environment in which all of an individual’s educational credentials are securely verified and stored and easily accessed by the individual, the educational institutions vetting the person’s qualifications, or potential employers looking for individuals that have particular expertise and skill sets. Also imagine that education, in particular higher education, no longer uses the traditional model. In this new, lifelong learning model, individuals pursue learning by interacting with the most appropriate entity to obtain the desired outcome. Learning becomes disaggregated, but it is a timestamped, verified, secure transaction recorded on the individual’s blockchain record, which extends all the way back to childhood education. This model places the “ownership” of the individual’s credentials more directly in the hands of the individual, not solely with the institution(s) from which she received credentials.

To this end, Tapscott and Tapscott (2017) stated that blockchain technology will be the most important technology to change higher education and then identified and expanded on four categories of opportunities for blockchain innovators in higher education:

- **Identity and Student Records**: How we identify students; protect their privacy; measure, record, and credential their accomplishments; and keep these records secure;
- **New Pedagogy**: How we customize teaching to each student and create new models of learning;
- **Costs (Student Debt)**: How we value and fund education and reward students for the quality of their work; and
- **The Meta-University**: How we design entirely new models of higher education; enabling institutions of “higher education to disaggregate into a network and an ecosystem – not a tower”. (pp. 11-12; 18)

Tapscott and Tapscott (2017) also stated, “Colleges and universities have not yet lost their monopoly on academic credentialing and educational brands,” but they suggested that they will lose this monopoly once blockchain-based innovations deliver more value to students and potential employers: “students will demand more for their money than what they are receiving from traditional institutions of higher education” (p. 24).

Other indicators of interest in the blockchain from the education sector: in 2016, Sony Global Education announced that it was going to use the blockchain to develop a resource that would enable the open sharing of academic proficiency and progress records. (https://www.sony.net/SonyInfo/News/Press/201602/16-0222E/). Additional developments include:

- **BadgeChain** (http://badgechain.com/), open badges developed with blockchain;
- **Blockcerts** (https://www.blockcerts.org/), certification developed by the MIT Media Lab;
- **Blockchain Education Network** (https://blockchainedu.org/), the development of blockchain clubs on campuses throughout the world;
- **ConsenSys** (https://consensys.net/), a model for classroom collaboration, using Ethereum blockchain software;
- **Open University** (http://blockchain.open.ac.uk), development in the UK using the Open Blockchain initiative;
- **TEx at the University of Texas** (https://utx.edu/initiatives/tex/), a system that delivers unbundled, stackable professional and academic offerings and credentials in a single system.
However, Watters (2016) puts on the brakes, suggesting that “There are many underlying assumptions that are made about [educational] institutions and their practices when we talk about using the blockchain, and I think scrutinizing these assumptions, not simply checking off a list written by a blockchain company, is fundamental as we consider the applicability of the blockchain to education” (Watters, 2016a).

Further, she expresses concern through a series of questions, such as: Is learning transactional? What makes up a ‘transaction’ in learning? Who is trusted and mistrusted in education? Which students, which institutions are and are not trusted; what is the actual source of “trust” in the current credentialing system; how would the trustworthiness of blockchain credentialing be measured? Is education (teachers, students, schools) prepared to handle the complexity of the blockchain? What is the incentive to “mine” in an education-related blockchain project? What happens to privacy in a ‘world ledger’ of education transactions? What happens if the data is wrong or the student wants a fresh start? What problems can blockchain solve in education? What problems – technological, ideological – might the blockchain’s adoption in education create? (Watters, 2016a). And in part two, she identifies three additional questions: “Whose interests are served by the blockchain? What values does the blockchain legitimate? What values does it undermine?” (Watters, 2016b). A plethora of unanswered questions to pursue before the alternative education model outlined above becomes viable.

Don Tapscott has written voluminously on technological issues for years. However, his son, Alex, is the Founder and CEO of NextBlock Global (http://nextblock.co/), a venture capital company that invests in blockchain companies, protocols and technologies – presumably making him knowledgeable about blockchain technologies, but also with a vested interest in seeing them adopted and successful.

Moving beyond health care and education, Kerrebrouck (2017) provided a list of broad uses for blockchain technology, including:

- Smart contracts – more on this in a moment;
- Sharing economy – direct interaction between parties (Uber or Lyft direct, without the intermediary);
- Crowd funding – crowd-sourced venture capital funds;
- Governance – full transparency to elections or any other kind of poll;
- Supply chain auditing – certification that items purchased are genuine;
- Protection of intellectual property – smart contracts protect copyright and automate the sale of creative works online, eliminating the risk of file copying and redistribution;
- Internet of Things – more secure machine to machine communication;
- Identity management – Distributed ledgers with enhanced methods for proving who you are, along with the possibility to digitize personal documents;
- Data management – giving users the ability to manage and sell the data their online activity generates;
- Land title registration – blockchain systems for property titles using the publicly-accessible blockchain ledgers;

As alluded to above, smart contracts are worthy of separate attention. Aste, Tasca, and Di Matteo (2017) describe smart contracts as “the deployment of algorithms that can self-execute, self-enforce, self-verify, and self-constrain the performance of the contracts” (p. 19). Smart contracts work in conjunction with transactions on a blockchain. For example, Alpha Company records a transaction that reflects a shipment sent to Beta Company. When Beta Company receives and verifies the receipt of the shipment, these two transactions meet the protocols specified in the smart contract and payment is automatically released from Beta Company to Alpha Company, which is another transaction recorded on the blockchain. Another example – Tapscott and Tapscott (2017) suggest that “smart contracts [. . .] could constitute learning plans” (p. 17). Once a learner has met all of the requirements specified in the learning plan, a certification is automatically recorded in the learner’s blockchain record. Many consider the implementation of smart contracts to be a key component of blockchain development; it further enables the elimination of the intermediary within specified environments.
In spite of the hype, many have looked more pragmatically at the implications of blockchain technology. Some non-trivial issues for which there need to be solutions include:

- Interoperability – how do individual blockchains exchange data with each other?
- Scalability – how well will blockchains scale to larger and larger applications?
- Speed of interaction – how can blockchain transactions happen as quickly as, say, a credit card transaction?
- Sustainability – what about the amount of energy needed for computers to perform the proof-of-work?
- Regulations and/or laws – what regulations and laws have to be changed, and are they changed at the federal or state level; what about international regulations and laws?
- Proof of Work – what is the incentive (outside of the Bitcoin model) for this essential function to take place?
- Error correction – how do mistakes get corrected in an immutable system?
- Unwillingness of institutions to change – a time-honored issue that new/disruptive innovations always face.

As for the blockchain in libraries, in a presentation to the Metropolitan New York Library Council (2016) Jason Griffey explained the blockchain and ended with some thoughts of how it might be applied in libraries:

- Provenance – archives and museums, in particular, care a great deal about who owned an object, when did it get transferred to someone else and then someone else and ultimately to its current location;
- Bibliographic Metadata – envision a decentralized WorldCat in a blockchain; a chain of book metadata put into a display system;
- Digital First Sale – the blockchain securely verifies that Alice bought an e-book, but then she sold or gave it to Bob, with each transaction recorded in the blockchain for the e-book; Bob can now access the e-book, but Alice can no longer access it; only the current “owner”, as verified by the blockchain, has access.

Howley (2016) suggests how public libraries might get involved with blockchain; Hoy (2017) discusses blockchain in the context of medicine and medical libraries; and Lemieux (2016) explores the value of blockchain in creating digital records. Perhaps of most interest, though, is the 2017 $100,000 IMLS Leadership Grant awarded to the San Jose State University iSchool, Investigation of Possible Uses of Blockchain Technology by Libraries-Information Centers to Support City-Community Goals (https://www.imls.gov/grants/awarded-grants). The outcomes of this grant over the next couple of years bear watching. Interest in blockchain technology from the library perspective exists at a pre-nascent stage, but with no viable applications at this time.

Some believe that “All that is needed... is a ‘killer app’ to find a use for the [blockchain] breakthrough, in the same way that web browsers made the internet useful” (Anonymous, 2015b, p. 17). That is a possibility; however, perhaps Iansiti and Lakhani (2017) present the most reasonable expectation regarding the blockchain: “Our experience studying technological innovation tells us that if there’s to be a blockchain revolution, many barriers – technological, governance, organizational, and even societal – will have to fall” (p. 120). More significantly, they identified blockchain technology as a foundational technology – as opposed to the disruptive technology others have suggested – comparing it to TCP/IP. The blockchain “has the potential to create new foundations for our economic and social systems. But while the impact will be enormous, it will take decades [emphasis mine] for blockchain to seep into our economic and social infrastructure” (Iansiti & Lakhani, 2017, p. 120). It took 30+ years for TCP/IP to move through all phases of a foundational technology – single use, localized use, substitution, and transformation – ultimately reshaping the economy; Iansiti and Lakhani (2017) suggest a comparable timeframe for blockchain technology (p. 121).
What is a librarian to do? Follow blockchain development emanating from the major players; also, follow the development of nascent blockchain companies or incubators, such as those listed below; be aware of state initiatives such as those in Delaware (Marvin, 2017) or Illinois (Baraniuk, 2017); as you go about your work, consider the possibilities of a blockchain solution that could improve services or systems.

Nascent blockchain companies or incubators:

- Ascribe (https://www.ascribe.io/), enables artists to register artworks via blockchain technology
- Blockchain Futures Lab (http://www.iftf.org/blockchainfutureslab/), a research initiative and a community for identifying the opportunities and limits of blockchain technologies as well as their social, economic, and political impacts on individuals, organizations, and communities
- Blockstack (https://blockstack.org/), a “decentralized internet” for developers
- Bluzelle (https://bluzelle.com/), middleware that addresses interoperability issues
- Chamber of Digital Commerce (https://digitalchamber.org/), the leading trade association that represents the blockchain industry
- Coin Sciences (https://www.multichain.com/), a blockchain technology company
- CoinSpark (http://coinspark.org/), adds messaging to Bitcoin
- Enigma (https://www.enigma.co/), from MIT Media Lab, a cloud platform that guarantees privacy
- Ethereum (https://ethereum.org/), a blockchain app platform; a decentralized platform that runs smart contracts
- Everledger (https://www.everledger.io/), focuses on identity and legitimacy of objects – diamonds, fine art, vintage cars, etc.
- Evernym (https://www.evernym.com/), digital identity solutions
- Factom (https://www.factom.com/), builds blockchain software
- Hyperledger – incubates and promotes a range of business blockchain technologies, (http://hyperledger.org/)
- InterPlanetary File System (https://ipfs.io/), a peer-to-peer hypermedia protocol
- LaZooz (http://lazooz.org/), Israeli blockchain-based ridesharing app that connects drivers directly with customers, with no “middleman”
- Lighthouse (https://github.com/vinumeris/lighthouse), app for crowd funding via a blockchain
- LBRY (https://lbry.io/) – allows artists to upload their content to a network of hosts and set a price per stream or download or give it away for free
- Medici Ventures (http://www.mediciventures.com/), encourages the adoption of distributed ledgers
- Mycelia (http://myceliaformusic.org/), enables musicians to sell songs directly to audiences, as well as license samples to producers and divvy up royalties to songwriters and musicians, managed by smart contracts
- Netki (https://netki.com/), a startup that aspires to create a SSL standard for the blockchain
- R3 (https://www.r3.com/), provides a digital ledger platform for financial systems
- Symbiont (https://symbiont.io/), a blockchain fintech company
Additional Resources


Moving Beyond the Threshold:
Next Steps in Critical Information Literacy

There is little doubt of the importance of critical information literacy and the role of librarians, but many librarians are asking themselves, what should come next? Recently, academic, school, and public librarians have been working tirelessly to document, articulate, and discuss, our progressively challenging role in cultivating social responsibility within our communities and amongst our students, in order to frame the conversation for growth. Join leading experts to hear how librarians can better engage library users in information literacy and lifelong learning.

Watch the [ALA website](http://www.ala.org) and upcoming 2018 LIRT News issues for more details.
Member A-LIRT Susan Gangl
Associate Librarian, University of Minnesota Libraries

What brought you to LIRT?
Colleagues encouraged me to attend an informational event about LIRT. Everyone I met in LIRT was enthusiastic and friendly, so I became a member.

What was your path to librarianship?
After accumulating a degree in studio art, 12 years waitressing experience, and even a class in cake decorating, my thoughts turned to illustrating children's books. My first stop was the Minneapolis Public Library (now Hennepin County Library). The environment felt so right! Fortunately, the University of Minnesota had a library school program at that time, and the rest is history.

Tell us about your current position. What do you like most about it?
As library liaison to five areas - Classical & Near Eastern Studies, Jewish Studies, Philosophy, Religious Studies and Holocaust & Genocide Studies - I enjoy the variety of subjects and how they intersect. I really enjoy meeting with students and faculty, having access to such a large collection, and being part of the university.

Throughout all of your educational experiences, what teacher inspired you the most and why?
More than anyone, Cerise Oberman, innovative leader in library instruction, kindled my enthusiasm for library instruction. In library school, Harris McClaskey taught intro to library science and history of children's literature. His enthusiasm and creativity showed me that you can be successful and still be yourself. Earliest, though, were the grade school teachers who read to us even when we were old enough to read. We experienced the shared pleasure of books and reading.

Tell us one thing about yourself that most of us probably don’t know.
I collect hand-carved wooden animals, mostly from my trips to Guatemala. The most recent news is that I’m retiring. I will be getting out to photograph birds and scenes near the beautiful Mississippi River, around the Twin Cities, Duluth and Lake Superior.

Please tell us about your time working on the LIRT Newsletter and with LIRT.
It’s been fantastic! The experience has made ALA more personal and meaningful. I remember being welcomed the first time I showed up at the All-Committee meeting. When I began editing LIRT News, we had strict deadlines and page limits, since each issue had to be printed (in black and white!) and mailed from Chicago. When then-editor (and recent Past President of LIRT) Jeff Knapp was recruiting a new production editor, I volunteered, and it was the beginning of years of creative work, meeting so many wonderful colleagues, attending and photographing great events, and attending really fun meetings!

THANK YOU to all the LIRT Committee members I’ve worked with over these years - you’ve been great!
2018 LIRT Librarian Recognition Award

Call for Nominations:
The Library Instruction Round Table (LIRT) is pleased to invite nominations for the 2018 LIRT Librarian Recognition Award. The Librarian Recognition Award is given in acknowledgement of a librarian's contribution to the development, advancement, and support of information literacy and instruction in any type of library. Self-nominations are welcome.

The award will be judged based on the following:

- Contributions to library literature on topics related to instruction/information literacy. These contributions can consist of both formal and informal publications (peer-reviewed articles and book chapters, blog postings, newsletter contributions, etc.). Non-traditional forms of publishing will be considered.
- Key role in the creation of an instruction/information literacy program or project that has shown potential for wide-spread sharing and replication.
- Impactful participation within local, regional, national, and/or international level professional organizations that are devoted to the support and promotion of library instruction and information literacy in any type of library.

Nomination Materials:
To nominate a librarian for the LIRT Librarian Recognition Award, please submit a nomination packet that includes:

- a letter from the nominator addressing the award criteria (see rubric on LIRT Awards website), providing concrete examples
- a resume or CV for the individual being nominated
- Three letters of support
- the following identifying information for both the nominated librarian and the nominator: name, position title, address, phone number, email address.

Other supporting materials that show the individual’s contributions to information literacy and instruction are welcome. Electronic submission of nomination materials is expected. Further information regarding the award and the selection process, including the rubric, can be found on the LIRT Awards website: [http://www.ala.org/lirt/awards](http://www.ala.org/lirt/awards).

Deadline

Send all LIRT Librarian Recognition Award nomination materials by January 15, 2018 to:

Beth Fuchs
beth.fuchs@uky.edu

The award winner will be notified following the ALA Midwinter Meetings, no later than February 15, 2018. The award will be presented at the 2018 ALA Annual Conference. Award winners will receive a $1,000 cash award, a plaque, and a $500 travel stipend to be used toward attending the ALA Annual Conference. Awards are sponsored by the Library Instruction Round Table. If you have any questions, please contact the LIRT Awards Committee Chair, Beth Fuchs (beth.fuchs@uky.edu).
Call for Nominations:
The Library Instruction Round Table (LIRT) is pleased to invite nominations for the 2018 LIRT Innovation in Instruction Award. The Innovation in Instruction Award is given in recognition of a library's contributions to the development, advancement, and support of information literacy and instruction in any type of library. Self-nominations are welcome.

The award will be given to a library that has done one (or more) of the following:

- Revamped its public instruction program in response to a new technology, an assessment report, etc.
- Initiated a public program that utilizes instruction best practices in combination with new methods of delivery.
- Created an original type of instruction, e.g., team-taught interdisciplinary research sessions, a novel form of outreach, etc.

Practice(s) will be prioritized over scholarship with preference for innovative practices that are low-cost and can be easily reproduced elsewhere.

Nomination Materials:
To nominate a library for the LIRT Innovation in Instruction Award, please submit a nomination packet that includes the following:

- a letter from the nominator addressing the award criteria (see rubric on LIRT Awards website), providing concrete examples
- Three letters of support
- the following identifying information for both the nominated librarian and the nominator: name, position title, address, phone number, email address.

Other supporting materials that show the library's contributions to information literacy and instruction are encouraged. Only one member of the library nomination group needs to be a librarian. Electronic submission of nomination materials is expected. Further information regarding the award and the selection process, including the rubric, can be found on the LIRT Awards website: [http://www.ala.org/lirt/awards](http://www.ala.org/lirt/awards).

Deadline
*Send all LIRT Innovation in Instruction Award nomination materials by January 15, 2018 to:*

Joshua Vossler  
jvossler@lib.siu.edu

The award winner will be notified following the ALA Midwinter Meetings, no later than February 15, 2018. The award will be presented at the 2018 ALA Annual Conference. Award winners will receive a $1,000 cash award, a plaque, and a $500 travel stipend to be used toward attending the ALA Annual Conference. Awards are sponsored by the Library Instruction Round Table.

If you have any questions, please contact the LIRT Awards Committee Chair, Beth Fuchs ([beth.fuchs@uky.edu](mailto:beth.fuchs@uky.edu)).
Get involved in LIRT!

Interested? Here’s our online committee volunteer form

LIRT STANDING COMMITTEES

Adult Learners
This committee is charged with assisting library professionals to more effectively serve adult learners.

Awards
This committee is charged with selecting the recipients for the LIRT Innovation in Instruction Award and the LIRT Librarian Recognition Award.

Conference Program
This committee shall be responsible for annual program preparation and presentation.

Liaison
This committee shall initiate and maintain communication with groups within the American Library Association dealing with issues relevant to library instruction and shall disseminate information about these groups’ activities.

Membership
This committee shall be responsible for publicizing the Round Table’s purposes, activities and image; and for promoting membership in the Round Table.

Newsletter
The committee shall be responsible for soliciting articles, and preparing and distributing LIRT News.

Organization and Planning
This committee shall be responsible for long-range planning and making recommendations to guide the future direction of LIRT.

Teaching, Learning, & Technology
This committee will be responsible for identifying and promoting the use of technology in library instruction.

Top 20
This committee shall be responsible for monitoring the library instruction literature and identifying high quality library-instruction related articles from all types of libraries.

Transitions to College
This committee builds and supports partnerships between school, public, and academic librarians to assist students in their transition to the academic library environment.

Web Advisory
This committee shall provide oversight and overall direction for the LIRT Web site.

For more information about our committees visit
http://www.ala.org/lirt/committees

Library Instruction Round Table News

c/o Lorelle Swader, LIRT Staff Liaison Program Officer, Placement/Recruitment Office for Human Resource Development & Recruitment
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