PODCAST 19

INFORMATION LITERACY

Welcome to 30 Brave Minutes, a podcast of the College of Arts and Sciences at the University of North Carolina Pembroke. In 30 Brave Minutes we'll give you something interesting to think about. The topic for today is Information Literacy and the changing nature of libraries. Joining Jeff Frederick, the Dean of the College of Arts and Sciences, are colleagues from the Mary Livermore library. With him are Dennis Swanson, Dean of Library Services, Robert Arndt, References and Instructional Services Librarian, Roger Cross, Collection, Development and Serials Librarian, and David Young, Catalog Librarian. Get ready for 30 Brave Minutes!

FREDERICK: All across the world, information has never been so readily available. In 2002, the amount of digital information surpassed analog information and the gap continues to widen every day. In part, information is growing because the world has more content creators, content archivists, and content consumers than ever before. In part, the amount of information is growing because our capacity to store and retrieve bits and bytes is growing exponentially. Cisco says the totality of the Internet is worth $19 trillion dollars. Google processes 20 petabytes of data every day while executing 3 plus billion searches per day and over a trillion per year, including one where I learned what a petabyte is.

So what do we do with all this information and how and who can help filter this for more uses than just who defeated whom in the NCAA tournament and further reduced my bracket to absolute insignificance? The American Library Association defines "Information literacy (as) a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information. Information literacy also is increasingly important in the contemporary environment of rapid technological change and proliferating information resources. That sounds like a website definition. I'm grateful to the ALA for the definition but the definition and the note about proliferating information resources seems like a colossal understatement. Data is growing faster than ever before and by the year 2020, about 1.7 megabytes of new information will be created every second for every human being on the planet. By then, our accumulated digital universe of data will grow from 4.4 zettabytes (which dwarfs a petabyte by the way, if you've never heard of either) today to around 44 zettabytes, or 44 trillion gigabytes. Information, in other words, is everywhere and growing at an unstoppable rate previously only imagined in one of those sketchy science fiction movies that play in the middle of the night. In the midst of this growth, have lost our sense of value for the process of acquiring, sorting, sifting, analyzing, and deploying information?

Case in point: Alexa, Siri, or any number of data assistant devices have reduced the search for answers to a simple audible query, rendering the knowledge of "**how** to get the answer," so 20th century. This is exactly why we need information literacy expertise as the old school, traditional means to get the answer may ultimately be as important as the answer itself. In effect, the modern world has become a series of data bases from which one, with the skilled assistance of a librarian for example, can shorten the time of previously reading multiple bound books and journal articles. Those information sources were acquired through prolonged standing and sitting in the stacks. 100 years ago, libraries gained great acclaim for their prodigious facilities, card catalogs, and long rows of stacks which might be evaluated as much on quantity as in quality.

The New York Public Library, according to a 2015 *New York Times* article, has 2.5 million books, which of course seems like a lot and admittedly the NYPL has often produced different figures for the amount of books that they actually have. Case in point, again, a 1905 article indicated the collection numbered over 3 million. So in 100 plus years they lost half a million volumes?

All of this is important for understanding a broader and more important point. Information is changing. Yet, that same massive public library and den of the two giant lions that guard its front entrance, also has 45 million total research resources, many of which are digital. So the library of the future will undoubtedly be moving to a place where lots of types of information can be accessed in an area where collaboration—teams or groups of people deciding what it important or maybe what to do with the information—takes center stage. As others have noted, "a library without books once seemed unthinkable. Now it seems inevitable."

Our topic for today: information literacy and the changing nature of libraries. Joining us are Robert Arndt, Roger Cross, Dennis Swanson, and David Young. David, talk about the revolution and the way that research is being done now, as opposed to the way it was being done maybe just ten years ago.

YOUNG: I find that millennials, compared to when we were growing up, may be technologically savvy, but not research savvy. They don't know like we would know automatically what a research paper was. We would have to type it. Nowadays they come up to the desk, often lost and need our help to steer them in the way to use the resources effectively. For instance, it seems to be a trend with the students where just writing something down on a piece of paper to find a book in our catalog, they bring up their smart phones to the reference desk and actually say, "Can you find this book for me?" I usually ask them, "Can you enlarge that image because I can't possibly see it on your smart phone?" (Everyone laughs.) So that is just a growing trend I find in my experience on the reference desk and how library research has changed from what it used to be.

FREDERICK: So some consumers of the library know how to get the number that they need to find, but they are not necessarily sure about where to go find where that volume and that number is. Robert, what about you?

ARNDT: Finding information is sometimes difficult for them because they are so used to using Google and the web to do a search. They can type the information in and find it. Library systems are a little bit more unforgiving. You have to know to search a particular database or database family to find your information. Some of it may be available full-text in that database and some of it not. If it is not full-text there they may want to give up on it or not look for it, whereas it may be available in a different database. They just don't want to take the time or the effort to find it, which makes it more difficult for them to find information. Or, if it is not available electronically, they may not care. Or, if it's not available even in print, some will say, "well, I've got to have a book." Well, the same information may be available electronically but they just don't want to use it. They don't want to take the time, or in our area, maybe they don't have the technological resources to study and use it after they are off campus.

FREDERICK: Do you think that the different faculty and community members and students who access this information read a lot of stuff that they get their hands on and say, "Well, I read that, and it is useful, but it doesn't really help me solve the research question I am doing." It seems like in the old days we were all sort of lugging home twenty-five books, sorting through them, one at a time, using those indexes, and by process of elimination figuring out what works or not. Do we still grind through all of that information to really fine-tune what we are looking for?

ARNDT: Sometimes I think they take the first available source and use it. I think when we had to grind through that information we were processing a lot of it and doing a process of synthesis and coming up and comparing that way. Instead, now they just have the raw data and are just looking for their answer. We have had people come in looking for topics in journal articles and if their topic is not in that title of the journal they ignore it. We tell them they actually have to read the articles, and go through it. So it is the same process as twenty years ago, but how they access it has changed. They also want it to be like Google and Spot On and find what I need. I don't want to have to read the whole thing. I want to read my paragraph, my section, and not everything, so that loses part of the learning process in certain ways about synthesizing that information or at least seeing it, or accessing and dealing with it.

SWANSON: There is a sense in which the instant gratification model of the culture has gotten into research. They want answers and not process. They want things without work sometimes and that is not necessarily a bad thing. It's not like the library needs to cater and just provide a list of answers. We do need to inform and instruct how to go through the process from a to b. How do you evaluate what you are looking at? It is an interesting phenomenon that for years and years in colleges and universities, I did, and maybe some of you did, too, we had to take those classes as freshman - How to Use the Library, How to Research, How to do all of that about twenty-five or thirty years ago, that became a passé kind of model. They wanted to integrate everything into the classroom and let the professor guide his or her class through the process called embedded research. Probably in the last five years all of the studies have indicated that model now is failing and failing badly. We are kind of making a full circle back to information literacy because it is a whole new kind of data to be literate about.

ARNDT: I think in some ways some students come in and haven't really thought about what they need yet. They know what they need, but they haven't thought about the key words they need to find it, whereas if you were using an old card catalog you knew it was going to be hard. You knew you sort of had to look for specific terms to find your information. Students today sometimes have not made that step before they come. They will come and say, "I need a book on history." You see the issue with that. There are billions of years of it and you have to walk them through the process to narrow it down to what they really need.

FREDERICK: Roger, what do you think?

CROSS: I suppose I am going to take a dissenting opinion here. It is true that today we have and people won't find exactly what they are looking for and they get discouraged, but I remember doing research papers and often what I wanted to work on ended up becoming directed by what sources were available to me. I didn't have a huge catalog of books, or whatever, and I ended up

evolving my topic to fit my resources. Today, we have peer-reviewed journal articles. Our library carries over 355,000 peer-reviewed journal articles....

FREDERICK: And you haven't had to count those? (Everyone laughs.)

CROSS: I have had to put them into database sheets. We have all these scholarly works that now people have come to more or less expect. If they are looking for a topic, they are going to find answers. Now, it is true as a young man coming into the university, especially in the early years, I'm not used to doing real research, but I think that once you get past the certain stage - upper classman, for example, you have a better sense of how to do research and how to locate those things that you are searching for.

FREDERICK: So once a community member, a scholar, a student, starts spending time with a librarian who can maybe help them develop those research capabilities, the huge amount of information and resources actually makes for a richer project. It makes for a better understanding in a lot of ways, but the learning curve comes differently now, right?

SWANSON: Oh, without a doubt. The thing now that happens, I mean even ten years ago, if you were doing a doctoral program or doing a dissertation or doing some sort of research, you might have to buy plane tickets to get to whatever library actually physically held that commodity, and they weren't going to share it with you. You have to come to them. All of that is changed now. There are very few barriers. The only barrier is has this item been digitized yet? And we are moving towards a process where it is not a question of if something is going to be digitized and made completely available, it is just a matter of when. Google started that with Google books. It may have been a little bit more of a process than they thought it was going to be, but that is moving forward. Eventually everything will be available to anybody provided they pay the price.

YOUNG: I also found a growing trend with non-traditional students coming back. They may have gone off to the military and I have helped a couple recently like that. Everything changed, such as I went away in 1994 and everything has changed in the library. In a sense I understand because technology keeps changing. You have to be really patient. I think Robert was alluding to the fact that students have a question, but just don't know how to formulate it. They come up there lost, but that is what I find my job is. To steer them to use the databases. I have started doing more two-way learning. I found when I started eighteen years ago I was almost spoon-feeding them. I hate to admit that but yes, giving them the information, they weren't really learning. In recent months I have started saying this is a different topic for you. What was the first step in this database? I find that they really pick that up in terms of it's really an effective technique to evaluate the databases, especially if they have multiple topics that they are dealing with. I don't know about my colleagues but I am sure they have probably had student coming up with multiple research topics to papers.

ARNDT: Sometimes that happens. Sometimes students as they do the research and as we talk to them and find resources for them, their topics will evolve because of the questions we ask. Because one of the things librarians, knowledge they have is a knowledge of the academic process, of what makes a good paper and we can pretty much judge sometimes if a topic is too broad and ask them that next step to go ahead and narrow down a topic or to better define it so

that hopefully it will meet their professor's research expectation instead of a broad topic that can be answered maybe by an encyclopedia article. Which we try to get them down to that. Also we have seen that a lot of older students who do return, they are amazed at the amount of information we can find very quickly instead of, you know, they remember the old card catalogues, maybe even paper indexes, the dinosaurs, using those and, like Roger said earlier, only having access to what they had in the library. Now we can get information from all over the world via interlibrary loan, even articles we do not have full text access to. Typically, if it is an article within two or three days, we may can find access for you for that article, but you have to make the step to make that request. You still have to make those steps to find that research and not settle for that instant gratification.

FREDERICK: So the good old fashioned value of initiative and learning to think intuitively about a research process is critical.

***We'll return to our panel in just a moment. UNC Pembroke and the College of Arts and Sciences are changing lives through education. To learn more about our 16 departments, college highlights and news, as well as to find past episodes of 30 Brave Minutes and our digital journal Bravery, explore our website. You can also support our academic programs by clicking on the donate button. Additional news and events may be found by following us on Facebook at UNCP College of Arts and Sciences. Remember wherever you go, and whatever you plan to do, you can get there from here.

FREDERICK: Let's segue a slightly different direction. Because there is so much information available how do you coach people up on how to gauge the accuracy or the veracity of all of this information? How do you teach people to know what information is valuable and what information is not?

ARNDT: We try to start them on peer reviewed journal articles, to start them with that, especially for the research and we will ask them, "do your professors require this?" Some of them will have to pause and think about it for a minute and then say yes, or say "I'm not sure; they never said." So, you know, we start with the students trying to get them to figure out what their professors need or what their research projects need and we direct them to those resources to try to get them to think about it like that. They may say, "Well, I can use this," and we try to tell them, "Well, that's not coming from an expert. To find expert articles you need to look and see that they are written by experts. So be sure they're in a well-known journal in the field." We direct them toward information like that.

SWANSON: I go through an exercise sometimes when I am teaching a class and I will put Wikipedia up on the screen and I am a Wikipedia editor, and I will pull up an article on Winston Churchill, for instance, and I will go in and they will say here is the information about Winston Churchill and then I'll go in as an editor and I'll change his birthday and click the button. I tell the people in the class, now look on your computer, look up Winston Churchill, and his birthday. Well, as far as anyone knows it is what I have just typed in, and they would have no way of knowing that. And I have used that as an example saying you need to dig behind this

information. You have to be understand that you cannot take certain things at face value. You have to, you know, you can't distrust all information. I think that is part of the some of the things today about fake news and things like that, so as though nothing is trustworthy, but at the same time you just can naively accept everything at face value.

FREDERICK: Well, and we have all become curators of our own information, right? We'll take seven pictures and we'll pick the one we like the best and get rid of the six that we don't like as much. We'll, you know, check and double-check our information before we'll send it out to a wider audience, to make sure it presents us in the best possible information. I think on the other side, sort of following up with what Roger says, I mean, we don't want to necessarily presume that just because something was written in 1940 and it was in a book, it is necessarily accurate, either. There are all sorts of ways. Information is just a source, and accuracy can be better or worse, no matter how it is presented.

YOUNG: That is true. You have to look for multiple ways. I find that sometimes the students, there is so much information out there that sometimes they get confused even distinguishing between a journal and a book. And I'm sure my colleagues have had the same experience where you have to say you are with somebody at the reference desk, show them the clues that they need to be able to distinguish between what is an actual and reliable journal article versus say, the average book or article that you get out of Time magazine or popular sources.

ARNDT: And sometimes students don't look at the dates of material. They'll quote something from 1992 and give facts and figures from that and if I'm reading that paper. I adjunct an English Composition class. I will say why are you pulling this information that is twenty years old? They won't think about it like that. They see that information as what it is. It fits their point and they don't go looking for that better source, a more primary source, so they stop there. Oh, I've got this source. It counts. It's good.

SWANSON: In teaching people, you know, the points of view of the people who are creating the information, I remember one student in a history class quoted General Cornwallis' biography on a particular battle in the American Revolution. Well, his viewpoint was obviously considerably different than Nathanael Green's viewpoint on the same battle and where, you know, but the student took, you know, that view as fact and the way it exactly happened and it must be true because it is in a book. And it is just a matter of not only educating students and sometimes it is a matter of educating faculty. We have educating faculty, what are the sources that are now available? How do we get it? We have had experiences where students are coming in and their assignment is to go through a particular index or source and which hasn't existed in several years. They don't print that any more. It is not created.

FREDERICK: And, you know, faculty, for their part, you know, add in sort of the rich set of skills about understanding perspective and context and bias, and you know, sources that might be partially true but not completely true, and sort of getting into the guts of it. Faculty live in the footnotes, right? And sometimes getting down deep in those weeds provides tremendous information literacy skills. Let's talk about how all this comes together. With all of this exponential growth of digital and data based sources, what is the library going to look like in ten years?

CROSS: I recently went to a conference and it was in my field. It's a major conference for my Collection and Development area. It is an international conference. There were two keynote speakers. The first person dealt with the question what would the library look like in ten years? And the second person dealt with what will the librarians be like? The answer that the keynote speaker gave to the first question was the library workers would be robots and the second was that the library would be basically run by AI. Now this isn't science fiction. They weren't talking about theoretical. They were working on prototypes. This was already in the works.

FREDERICK: Now this was in a room full of librarians. They probably didn't get a standing ovation.

CROSS: We left thinking we might be the last generation of human librarians. That was the talk afterwards. I can understand how, as AI increases, you are going to be able to accomplish a lot of the things that we do through tedious analysis and spreadsheets, whatever, they'll be able to do that instantaneously in AI. They will know, for example, while these students are now searching for this kind of information, we need to get more books or journal articles on this topic. AI can handle that immediately, and for us it's more of a process.

SWANSON: The term now is Library 4.0. That is what there is, as a few years ago, they were talking about Web 4.0 and now it's also library 4.0. What is the library going to look like going forward? And it is. It's almost going back to its roots, I mean, originally libraries were collaborative places where people came to work and to debate and to interact because there weren't a lot of printed resources. It was still tedious, hand-written scrolls and people would come together and interact with ideas and depart and we're again almost coming full circle where libraries are going to be that collaborative learning-centered space, where the information is available but the people are available to interact with and talk and help sharpen thinking and ideas, more than sitting in a cubicle in quiet and you know, reading a book on what those answers are.

FREDERICK: So the library will become not only a place where information can be accessed but a place where information is deployed and put together and a sense of searching for meaning of it all. The skill of getting the information will become easier to get. The skill of what to do with the information will be a place where library, like a European salon of the enlightenment era, where great ideas and great pieces of information are discussed. The library might be a place where people are brought together, but maybe not for the same reason they are brought together now.

SWANSON: Exactly. And, you know, even in our library moving forward, a place where you can also get a decent meal. You know, those sorts of things are changing.

FREDERICK: So as the value and the access of information changes, the way in which we consume it and the place in which we consume it at, and then what we do with it will continue to change. Will this be as true of academic libraries, like Livermore, as it is of, say, public libraries in small or large communities?

ARNDT: I think it will probably be about the same. I think the academic library of the future will need to have spaces for collaboration. They will need to have spaces where students can practice certain skills, maybe like presentations on Smart Boards and that type of thing, because, a lot of, you know, most any education class out in the school district now has some kind of Smartboard, and this will be an opportunity, if the library has these type of presentation rooms to practice that. Maybe even also to conduct interviews on line and to show that presentation to people who are maybe recruiting them for jobs, as well, that way. So, I think the libraries will have that type. I think they also will have certain rooms. I think that we'll have quiet rooms. I think that we'll have certain rooms where people can escape the social noise and the social media noise that is with them all the time now, because it will become too much of a distraction, and they will want that place to concentrate. So I think, you know, it will be a balance, I think, between that. There will still be rooms, I think for that. It will never totally go away I don't think, but I think there will be rooms for collaboration.

FREDERICK: In a world where increasing amounts of the collection are digitized, original research may be in the sense of taking different pieces of information and compiling them or putting them together in ways that they hadn't been put together before to answer questions that had not yet been previously answered.

SWANSON: Exactly. And you know the difference between a university library and the community public library or even a special library in a corporation or a hospital. A lot of it is just the maturity to collect. A public library is going to, for instance, buy a lot of the current best sellers, and have things available for people. The university library that is not necessarily our task. Our, you know, we can prioritize it basically, the students are first, the faculty comes in second, and then kind of everybody else after that. Public library is going to be almost the reverse. It's going to be the everybody else that is going to be the community. It's going to be the big picture. You could almost, we used to call it the information chain. The community library, the public library is almost the encyclopedia and the university library is the monograph and the journal literature and the specialized material, whereas that special law library or hospital library is kind of a, you know, pin point, this is all we collect, which is a kind of a what the individual library collects and makes available as part of their purpose.

FREDERICK: Well thanks for a fascinating discussion on how we consume information, how we access it, what we do with it, and what the library is going to look like. Every year we will be making sure we are spending copious amounts of time in the Livermore library so we can see these changes going on. Thanks to all of our experts today and a really rich discussion. Tune in next time for 30 Brave Minutes as we tackle another interesting and thoughtful subject.

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