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Teaching Information Literacy to Students of the Long-Tail Market: A Pedagogical Approach

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Abstract

This paper presents the perspective that the information-seeking behavior of the “Google Generation” is a product of the market economy in which this generation reached adulthood. This economy is marked vendors who make available everything in a given market, such as iTunes or Amazon.com. Using critical theory and pedagogy, instructors of information literacy are able to stimulate critical thinking, and encourage students to seek the motives for creating information appearing in all types of resources, rather than just those available on the Web.

Introduction

The so-called Google generation has the marketplace at its fingertips—more than 8 million songs in iTunes, more than 100,000 DVDs through Netflix, millions of new and used items on Ebay, and Amazon.com. They are reaching adulthood in an environment where they can, for the most part, get what they want, packaged how they want it, when they want it. This phenomenon is known as the “Long-Tail Market”, where markets are transitioning primarily to Web-based vendors who do not depend upon fluctuating (or peak) periods of sale, as opposed to brick and mortar stores where physical issues of space and format limit the selection of goods (Anderson, 2008). In other words, Walmart.com can make exponentially more products available than any one physical Walmart store. Camping equipment may always be available through the online marketplace, but you may only find camping equipment within the physical store when it is considered seasonal and cost effective to stock. As librarians, we are seeing that students of the “Google generation” are applying the skills they have developed while finding movies in Netflix, and songs in iTunes, and recommendations in Amazon.com, to the finding of *information* within our proprietary databases and OPACs. This erroneous application creates frustration and disenchantment when resources do not respond accordingly. Information is a commodity, and if we were to think about information literacy in economic terms as well, one could say that instructors of information literacy are connecting the supply of information to the demand, with attention to efficiency and quality.

Researchers have applied the Long-Tail phenomenon to the assessment of reference services and the creation of strategic plans for collection development within libraries (Storey, 2005 and Law, 2006).but they have not yet begun to ascertain the effects of this particular economic phenomenon on the *student*, or establish how it applies to the instruction of information literacy.Using this economic theory introduced by Chris Anderson in his book *The Long Tail* (2008) and pedagogical theories by Paulo Freire (1970), as well as theories of critical theorists Habermas (1984) and Horkheimer & Adorno (2002), this paper will explore how to include critical thinking in a credit-bearing information literacy course. The theory of Anderson explains the conflict that students of the Google generation face because they are generally unaware of the economic forces which drive the information age, and do not understand how

even familiar resources fit into this model. The theories of Friere and Horkheimer & Adorno provide a framework for successful teaching information literacy, which can be defined as “knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner” (CILIP, 2009). Traditional critical pedagogical questions of dominance, dialectics, and democracy will be applied to information providers such as *Wikipedia*, Google, scholarly journal publishing, and federated searching. Ultimately, students who have learned about such resources through critical methods should understand and continue to question the validity and reliability of all information resources. This is the most essential skill in an age of information commodification.

The “Google Generation”

Imagine a typical university student. Chances are, he or she has “[grown] up with the Internet. He’s the single child of affluent parents...so he’s got a Mac in his bedroom, a fully stocked iPod (and a weekly iTunes allowance), and a posse of friends with the same. Like the rest of his teenage friends, he has never known a world without broadband, cell phones, MP3s, TiVo, and online shopping” (Anderson, 2008).

For the purposes of this paper, the “Google generation”, though defined elsewhere as referring to individuals born after 1993 (Rowlands et al., 2008), will be defined broadly as those younger than 21 years, but also specifically those graduating high school prior to 2012. At a macro-level, members of this generation literally have the culture industry at their fingertips. They are able to browse through more than 10 million songs available through the iTunes store, they can peruse through and read passages of the millions of books marketed on Amazon.com, read passages of copyright-free content on Google Books, and rent over 100,000 DVDs from Netflix. Despite the fact that these are Web-based vendors and while this isn’t necessarily *information-seeking*, it is *something-seeking* behavior in interfaces that resemble those of library resources, with search query inputs that result in returns, thus it should be of interest to those who teach information literacy. One would expect that a generation so fine-tuned at finding “stuff” in intricate vendor interfaces would be naturally proficient at utilizing Web-based library resources. Yet, that is not the case and numerous critiques of the “Google generation” abound with theories as to why this is so. In fact, “most college faculty and librarians are painfully aware of how often students seem to be incapable of thinking critically about coursework in general, and about information needs or information resources in particular” (Weiler, 2004). In a large study conducted by the British Library and the Joint Information Systems Committee, researchers found that 89% of university students begin research with a search engine, and that 93% were satisfied with that experience (Rowlands et al., 2008). Though they generally have “unsophisticated mental maps of what the internet is”, the “Google generation” does not find library resources intuitive, and would prefer to use Google or Yahoo! because it is more friendly (Rowlands et al., 2008).

It would seem that the members of this generation see libraries as warehouses for books and venues for studying, rather than as dynamic entity that provides information in many formats. Libraries are deemed “antiquated” and those who use them feel as if they are participating in some sort of “retro” behavior. Perhaps some of this perception can be attributed to the development of these Web-based vendors that make everything in a market available.

The Long Tail

The Billboard Top 40 list of today has only a fraction of the listeners as a Top 40 list of the 1970s. Teenagers today watch television—but they are not necessarily watching the “most popular” program. They watch television on Hulu.com, through a DVR like TiVo, or choose new programmes from the hundreds of channels available in any general expanded-basic cable lineup. The fastest selling album of all time was the *No Strings Attached* album by *NSync, sold ten years ago, and no one has sold as many records in as short a time since (Anderson, 2008). Ebay.com has made a highly successful market at facilitating the sale of *anything*, with the idea that though an item’s usefulness has ended for *one* person, it may still retain usefulness for another.

In his book, *The Long Tail: Why the Future of Business is Selling Less of More*, Chris Anderson (2008) attributes all of these conditions of the current market, and more, to the development of a long-tail market trend. This theory addresses the traditional trend of sales to follow the 80/20 rule that describes, among other things, the trend that twenty percent of products account for 80 percent of revenues. Anderson says that this so-called “rule” is void when thinking about many recent successful online vendors, because their sales more closely resemble a power law in which a “large number of things (i.e. sales) occur with low amplitude”. Anderson expands upon his theory, originally published in *Wired* magazine, postulating that the end has come for markets dominated by scarcity. He credits this market transition primarily to the internet, and says that connectivity has provided “unlimited and unfiltered access to culture and content of all sorts”, or rather, a market dominated by abundance. Vendors of a long-tail market make *everything* available to all customers, and good long-tail vendors allow consumers to package the product how they want it. For example, Rhapsody or iTunes, users can buy as much or as little from any album available and store it on a computer, transfer it to other computers, and listen to it portably with an MP3 player.

He reveals three “forces” of the Long-Tail that are imperative to understanding the relationship between a long-tail market economy and the information seeking behavior of the Google generations. In application, one of the most successful entity that demonstrates of these “forces”, which are: 1) democratization, 2) lowering the costs of production, and 3) connecting the supply and demand is Wikipedia, the online encyclopedia in which most articles may be edited by anyone, and which all articles can be edited by anyone with a registered account. Wikipedia *democratized* the idea of the encyclopedia, in that allowed for anyone to participate in the culture of knowledge. Wikipedia was born out of the idea that knowledge is for everyone, and that *everyone* is an expert on something, whether it be tetrahedron or episodes of the popular television show *Dr. Who*. Wikipedia also *lowered the cost of production* by making a Web-based encyclopedia that does not require printing, shipping, or sales costs. Anyone with a computer and an internet connection can either participate in or benefit from Wikipedia. Thirdly, Wikipedia *connects the supply and the demand* by giving those interested in learning (i.e., the demand) free access to the means of production (i.e., the supply).

Knowing what we know about the long-tail market phenomenon, it should be no surprise to us, as librarians and information professionals, that the “Google generation” applies what they know about finding *items* in the long-tail market to finding information in our libraries. The “Google generation” approaches library catalogues the same way that they approach Google, a search engine that suggests correct spelling, automatically truncates (to a degree), returns results in a relevancy ranking, and provides access to one of the largest (if not *the* largest) set of data known to man. Another example of this can be seen when comparing Amazon.com to our Online Public Access Catalogs (OPACs); contemporary users of OPACs, who are more and more accustomed to the sophisticated algorithms of the standard search engine, become disenchanted with the less sophisticated search capabilities of most OPACs. They may, as a result, assume that because the system is less sophisticated, so is the product retrieved. Imagine using an OPAC the first time, after you’ve mastered a resource such as Amazon.com, which features ratings and recommendations on every item available. Upgraded OPACs may offer a photo of the book’s cover, but Amazon.com makes it a standard to provide the book’s front cover, the back cover, the table of contents, the index, etc., as well as entire forums on individual books where readers and potential readers can discuss.

Though he credits libraries with being among the first to accommodate the long tail, one can assume that Chris Anderson would have quite a few suggestions regarding how to make libraries friendlier to the *information-seekers* of the “Google generation.” They would probably include participating with Google on the book digitization project, and implementing federated searches so that there is one search box for all materials. Regarding his three “forces”, it could be said that libraries need to provide Web 2.0 technologies so that users can contribute, or participate democratically, in the evaluation of resources similarly to sites such as Amazon.com. It could also be said that libraries have thus far been successful at “lowering the costs of production”, and that with information literacy instruction, we are “connect[ing] the supply and demand” (2008). But thus far, there has yet to be implementation of strategies that

instruct these students on how to be successful researchers *now*, knowing that they are conditioned by Google, Amazon.com, iTunes, etc. In order to fully understand how the long-tail market affects the thinking processes of information literacy students, we must give attention to traditional pedagogical theory and the dialectical relationship of learning, as well as trends that affect critical thinking.

Critical Theory, Critical Thinking, and Pedagogy

In an essay titled, “The Culture Industry: Enlightenment as Mass Deception”, Horkheimer and Adorno (2002) suggest that individuals lack the ability to think critically regarding art and culture because the works of popular culture are imitations and regurgitations of themselves with only provide the illusion of competition. Horkheimer and Adorno are discussing a culture industry dominated by “blockbuster” films and “bestseller” books that seemingly *everyone* sees or reads, and radio programs and music trends that appeal to the majority, many of which have similar themes, plots, sounds, and characters. From the era of the 1940s until the post-2000 “broadband era”, this type of culture, and thus market, dominated.

This is of interest to all educators, as it hypothesizes that this market decreased the ability of anyone who participates in this culture to think critically. One would think, then, that with the changing of economics to focus on the abundance of choice (i.e., the long-tail) that those who were previously able to evaluate artistic and persuasive works would begin a sort of re-growth process in their ability for critical thinking because they are not limited by what is most commercial and mainstream. Libraries can offer these students an abundance of information with proprietary resources, and they can find an unimaginable amount of information on the Web itself. Yet, these students spend very little time with the content and seem to spend no time evaluating works for authority, reliability, and relevance (Rowlands et al., 2008). In an article published in *The New Atlantis*, Christine Rosen presents a possible reason as to why this resurgence in critical thinking has not occurred, by stating the following about providers such as Amazon.com, iTunes, Netflix, etc.:

By giving us the illusion of perfect control [or, rather, choice], these technologies risk making us incapable of ever being surprised. They encourage not the cultivation of taste, but the numbing repetition of fetish. And they contribute to...the thoroughly personalized and extremely narrow pursuit of one’s personal taste. In thrall to our own little technologically constructed worlds, we are, ironically, finding it increasingly difficult to appreciate genuine individuality (2004/2005).

Thus, Rosen is saying that markets characterized by abundance *also* serve to oppress, and essentially entertain into being unable to think beyond the self. Or, “the possibility of critique is thereby diminished even as the quantity of information available increases” (Whitworth, 2006). For example, Google is generally “quicker”, so it’s taking up less of *my* time. Wikipedia includes articles about the television show that *I’m* interested in, Britannica does not. Amazon.com provides reviews about what *I* want, a library catalog simply provides titles, and *I* must spend time going to the books to establish relevance, authority, and reliability.

This type of thinking reflects the *instrumental* type of social action, as theorized by Jürgen Habermas, and as discussed by Hansen et al. in an article titled, “Wikipedia, Critical Social Theory, and the Possibility of Rational Discourse” (2009). They quote that human behavior motivated by instrumental action “is directed toward objects as though they were inanimate constraints, which can be manipulated in ways that serve the actor’s needs” (Lyytinen & Klein, 1985, cited in Hansen et al., 2009). Hansen et al. argue that “information technology”, or, the same types of technology that have made Wikipedia, Amazon.com, iTunes, etc. possible, “may actually support the emancipatory principles of critical social theory” (2009). The second type of social action is *strategic action*, which is defined as “...an action oriented to success strategic when we consider it under the aspect of following rules of rational choice and assess the efficacy of influencing the decisions of a rational opponent” (Habermas, 1984, cited in Hansen et al., 2009). With information literacy, we strive for the third type of social action, known as *communicative action*, which is defined by “actions of agents ...coordinated not through egocentric calculations of success but through acts of reaching understanding” (Habermas, 1984).

It is the charge of instruction and information literacy librarians to facilitate critical thinking in this generation characterized by a market that provides students with what they want, when they want it, packaged however they like it. When educating those who are unaware that the “the [internet], with its existing search engine technology, reinforces prevailing power relations, rather than acting as a force for increased democratization and social justice” (Mowshowitz & Kawaguchi, 2002, cited in Hansen et al., 2009), and to change the self-centered instrumental action that we are seeing in the “Google generation” to that of communicative action, it is appropriate to turn to Paulo Friere, who said:

The oppressed must see examples of the vulnerability of the oppressor so that a contrary conviction can begin to grow within them. Until this occurs, they will continue disheartened, fearful, and beaten. As long as the oppressed *remain unaware of the causes of their condition, they fatalistically “accept” their exploitation*. Further, they are apt to react in a passive and alienated manner when confronted with the necessity to struggle for their freedom and self-affirmation. Little by little, however, they tend to try out forms of rebellious action. In working towards liberation, one must neither lose sight of this passivity or overlook the moment of awakening (emphasis added, 1970).

Thus, the key to teaching information literacy to students of the long-tail market who are oppressed by their own *abundance of choice*, is to force them into an internal conflict regarding their own dualism or multiplicity. This can be done by not only teaching methods for finding materials in traditional resources, but providing information on the resources with which they are more familiar and that perpetuate the long-tail market. Instructors must also encourage analysis of the motivation behind the creation of that source and the role of that resource as a commodity within the information age. The “Google generation” is generally unaware of the economic forces that drive their information resources, and how they are victims of market oppression. Take what they *do know*, or *think they know*, about a resource in which they are familiar, and show these students their own dualist perspective that derives directly from the information resource as a commodity.

Three examples follow for use in instructing information literacy students in the nature of resources: Wikipedia & Encyclopedia Britannica, Google Scholar & traditional proprietary databases, and scholarly journals & blogs. It is important to note that the opinions presented in the following do not necessarily represent the opinion of the author, but rather discussion arguments to present to students of information literacy to stimulate critical thinking. The purpose is to force the student to “[begin] to see the world as primarily relativistic and context-bound, rather than as a world of black-and-white facts” (Weiler, 2004).

Wikipedia vs. Encyclopedia Britannica

Encyclopedia Britannica, created in the late 18th century, is considered to be the most scholarly of encyclopedias, a format that is, “often set up as the gold standard of information quality against which the failings of faster or cheaper resources can be compared” (Giles, 2005). The corporation that publishes Encyclopedia Britannica is a for-profit venture, and the publication of the 32 volumes of the current edition is costly—and marketed to both individual consumers and to libraries. Due to its static printed form, it is quickly out-of-date—perhaps even before it is printed. The timeliness of articles, as well as the worthiness to appear in the encyclopedia, is determined by a team of editors and a CEO as to what to include into and exclude from this body of knowledge.

Wikipedia, on the other hand, was created in 2001 and resides on the Web in fluid format by which anyone can change its content and update it in real-time. Wikipedia was created by a non-profit foundation, and aims to not only share information with anyone able to access and computer and internet connection but also to allow non-traditional scholars to participate in the collection of knowledge. Wikipedia has over 2 million articles in English alone (Anderson, 2008), compared to Britannica’s mere half a million (“How to Use,” 2007). Yet, many still regard Wikipedia as being unreliable due to its fluid nature and the fact that it is available for non-scholars to edit, despite a study conducted by *Nature* magazine that found that “the average science entry in Wikipedia (consulted at any given time) contained around four inaccuracies; Britannica, about three” (2005). Its biggest downfall, of course, is that some

information is created with malicious or uninformed intent, and thus one may never be sure of the correctness of information found within its pages.

Google Scholar and Proprietary Databases

Electronic databases revolutionized research. They allowed for keyword searching from metadata of compiled records across multiple years and titles—rather than the time-consuming method of subject and synonym-searching in physical materials with time, space, and title limitations. Now, however, they are usually owned by profit-driven corporations, and their prices generally rise faster than the cost of inflation every year. They tend to index the *traditionally* most-influential journals in particular fields, and may not give any attention to open-access journals that are seeking to change the nature of the scholarly publishing field. They may also only index journals that they themselves publish, for example, the database Science Direct which only indexes Elsevier-published content. They dominate the market of scholarly research, and yet their largest consumers are not-for-profit library entities. They market interfaces that are different than competitors, and that then require specialized training in their use. They control access to their materials through strict end-user licensing agreements that trump copyright law and fair use.

Google Scholar, on the other hand, used technology already in place, as well as records already available on the Web, to make similar information available to all. Though Google is a for-profit venture, its customers use its resource for free while it passes off expenses to advertisers. It makes scholarly information *findable* to anyone with a computer and an internet connection. While the content itself may require payment for viewing, Google Scholar has democratized scholarly information and made for-profit journal articles available right next to open-access articles. Impact in Google Scholar, however, can be determined by a citation analysis service provided with each citation—giving the end-user information about how many times that particular article has been cited in other articles available to the Google Scholar database. Lastly, no special training is needed to use the Google interface, especially if one is already an avid Google user.

Scholarly Journals and Blogs

Scholarly journals, similar to encyclopedias, were born out of the tradition that information should be shared with the masses after having passed through an editorial process designed to check for correctness of content. Since that development, however, scholarly journals have developed into a format necessary to protecting the status quo of the education industry. Professors, scholars, and researchers are required to publish in this format in order to receive tenure and promotion. It begs the question as to the “truth” or even relevance of information created by someone who will receive monetary and status benefits. Any non-peer-reviewed content, or content without any quantifiable benefit for the creation of information, is treated with scorn and mistrust. Universities benefit from their faculty being publishing-machines, rather than strong instructors.

Perhaps one of the greatest examples of the shortfalls of this system is the publication of the article “Evidence of a pluripotent human embryonic stem cell line derived from a cloned blastocyst” in *Science* (v. 303, pp. 1669-74). This publication, though proven false much later, was published in one of the most prestigious magazines in the sciences despite having gone through a peer-review process. It was later retracted, but this article serves to show that the motives for creating information must be questioned along with the “correctness” of information. Further, due to their peer-review nature, scholarly journals are cloaked in bureaucratic policy. It can take months, sometimes years, after the creation of information before that information may reach its audience. Editorial boards review, comment, require edits, of works submitted for publication constantly, though some have attempted to take bias out through “blind” reviews which do not reveal the names and institutional affiliations of those creating the work.

Blogs, without a formal peer-review process, are not typically acknowledged as being a viable resource for scholarly information. Blogs are venues in which any professor or amateur scholar may present opinions, findings, and theories with whatever audience they may have on the Web. Yet, trends are

developing where people who have not historically collaborated on scholarly ventures are beginning to do so through blogs. Some of the collaborators may not be formally educated individuals within the discipline, but may have knowledge on the subject acquired through self-study or other method. Blogs provide information to anyone with a computer and internet access with interest in the subject, and updates in real time.

Conclusion

It is arguable that all education is dialectical in nature. A person or persons' foundation of knowledge encounters a concept or idea different from which they are familiar, and a new idea springs forth with roots in both. The long-tail market is allowing mass quantities of information to be available, however the process allows students to be unable to see culture, and worse, information, beyond themselves. It is the job of instruction and information librarians force these students to confront their dualistic perspectives and provide examples of information as a commodity, and how that affects how they consume, or use, information. The end result should be students with the ability to synthesize many types of information resources while seeking information, and the ability to think critically in order to evaluate the motivations of a resource's creation, its merit and reliability, and understand how those qualities impact the quality of information contained in the resource.

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