

# Understanding emotions to empower the Net generation as information literate citizens

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## ABSTRACT

*In my address, I will be talking about a pivotal need for librarians and information professionals to understand information users' emotions to truly empower the Net Generation to educate them as informed citizens in the future. For this purpose, various characteristics of the Net generation reported in the literature will be introduced first. Subsequently, I will introduce the environment where higher education and academic libraries are situated currently, and the challenges and opportunities they are meeting now. Educators in higher education see the importance of teaching information literacy to help students prepare for their uncertain futures, and thus teaching critical thinking and critical use of information resources and services have become pivotal in the process. Yet, there are many indications that suggest many barriers for the Net Generation to access needed quality information. Among the many barriers that hamper effective information access, I will draw attention to the barriers caused by irrelevant emotions in particular, library anxiety. I will be sharing the research findings from recent studies, including my mixed-methods study of library anxiety and critical thinking dispositions among college students. These reports will demonstrate how both positive and negative emotions play a vital role throughout the information search and use process. Finally, I will share both theoretical and practical implications drawn from the empirical findings on emotions within the frameworks of affective information behavior and information literacy.*

**Keywords:** Information literate society; library anxiety; critical thinking skills; information skills.

## NET GENERATION ... WHO ARE THEY?

Most of today's college students are from the Net generation, also known as "Generation Y" or "Millenials" (Howe and Strauss, 2000). Born between 1980 and 2000 and grown up with digital technologies, the Net Generation generally represents active users of a variety of different state of the art information technologies and services and heavy Internet users. They are often depicted as the Microwave generation. I can easily come up with the reasons for this description because it describes the generation's strong tendencies to pursue convenience and instant gratifications. Yet, there is one puzzling behavior that I have also observed often from the Net generation. They are lovers of astrology and frequent customers of every kind of psychic or fortuneteller, despite the fact that they grew up in the most information rich and scientifically advanced society. Analysts explain this phenomenon with various reasons, and some are more persuasive than others. Those more convincing ones are:

1. Uncertainty in the life around them and unclear vision to the future.
2. Something to depend on and to select from masses of information ever increasing, also known as “Infoglut” or information overload
3. Quick answer

Indisputably, inundated by tons of information flow, they have to make decisions everyday based on so much confusing, sometimes contradictory information, and the vision for the future isn’t always clear. They may be too fatigued to be rational and logical all the time. Or, the Net Generation may feel the urgency to look for some authorities to depend on, and to get some sense of direction, or to get emotional comfort, regardless of the truthfulness of the authority they consulted.

### **EFFORTS TO UNDERSTAND THE NET GENERATION**

There has been a considerable effort to understand the Net Generation among researchers and library practitioners who work with them. Observing the Net Generation’s research habits in an academic library, researchers consistently report that today’s undergraduates indiscriminately depend on Web-based resources from the search engines despite the often questionable quality and credibility of the sources, while book citations have dropped significantly. Precise evidence for such a trend is the popularity of Wikipedia among college students (Lim, 2009).

According to the general findings of studies that examined college students’ information source use, web sources were the most frequently used sources although their trustworthiness or credibility is often questionable. In contrast, librarians were viewed as a highly accurate source, but they were most rarely used if not avoided. Recently, my colleagues and I examined American college students’ perception of different information sources (Yoo, Kim, and Kwon, n.d.). We found a very interesting contrast between the use of Internet websites and library online databases. As the source characteristics of Websites/Internet engines, the top four strongly perceived characteristics were ranked in order of “accessible”, “easy to use”, “familiar”, and “interesting”. In sharp contrast, those four characteristics were the least perceived characteristics of library online databases and journals (i.e., the least perceived characteristic was “familiar” followed by “easy to use”, “interesting”, and “accessible”). It indicates that library online resources lack the characteristics of the sources that attract students.

Table 1: Perceived Characteristics of the Web Sources vs. Library Online Resources

<i>Rank</i>	<i>Websites/Search engines</i>	<i>Online DBs/Journals</i>
1	<b>Accessible</b>	Good
2	<b>Easy to use</b>	Active/Updated
3	<b>Familiar</b>	Comprehensive
4	<b>Interesting</b>	Accurate/Trustworthy
5	Good	Organized
6	Active/Updated	<b>Accessible</b>
7	Comprehensive	<b>Interesting</b>
8	Organized	<b>Easy to use</b>
9	Accurate/Trustworthy	<b>Familiar</b>

Furthermore, there is an interesting report from the United Kingdom that informs how undergraduates develop their research skills for their academic work (Warwick, Rimmer, Blandford, Gow, and Buchanan, 2009). Instead of developing effective strategies for search and source use, the college students hone their skills to finish their tasks in the most economical way. They acquired searching techniques that bring the quickest and easiest way to obtain information that is just enough and necessary to complete the given assignment. The researchers refer to this strategy as “strategic satisficing” (Warwick et al., 2009). Students might be prone to this mechanism when facing uncertainty and complexity in the information seeking situation.

There is another noteworthy study conducted by librarians at the University of Rochester in the United States, "Studying Students: The Undergraduate Research Project at the University of Rochester (Foster and Gibbons, 2007)" It is a two-year project that vividly depicts how our Get Generation undergraduates work and live through an ethnographic research lens. Looking at the world through student eyes in everyday life, the librarians were able to obtain the following information about undergraduates, which later served as useful information to enhance their library services.

- Students did not feel any problem with finding materials for their papers
- Some had problems organizing and writing the papers. It was the most difficult part of the process
- Library was part of their life.
- Yet, students could not tell the difference between reference and the information desk. Library stacks were perceived as a place that made them confused and fearful.
- Students did not have a clear picture of what a librarian does. Librarians were just anyone who works in the library. To them, librarians were identical to print books. When they were asked, did you ask librarians for help? They would say, “Oh no, I didn’t need any print books at that time” or “Oh no, I know how to find books.”
- “Helicopter” parents were prevalent. Parents were involved tremendously, frequently emailed back and forth with their kids to assist in their academic assignments.

So far, I have talked about the Net Generation to provide some understanding about who they are and how they use information. Now, let’s talk about information accessibility and emotion.

## **EMOTION AND THE INFORMATION TASK**

The landscape of society is changing rapidly. The essential educational mission of higher education is now to prepare their students to become an informed citizen to live well in the uncertain future and to excel in any circumstances. To carry out this mission effectively, higher education institutions have come to recognize information literacy as a key educational component in preparing their students in this rapidly shifting society (Association of College and Research Libraries, 2000).

### **Critical thinking disposition**

Effective information search and use involve critical thinking. Due to the importance of analytical and systematic thinking skills in using libraries, instruction librarians have been interested in teaching critical thinking skills as an important component of information literacy (Bodi, 1992). Researchers, such as Whitmire (1998), examined the relationship

between critical thinking and library use, and found that library use enhanced critical thinking skills. A limitation of those previously examining this aspect of critical thinking is the fact that they were understood as cognitive abilities. However, according to Facione and his colleagues (2004), this cognitive side is only a partial facet of critical thinking. Emphasizing the emotional aspect of critical thinking, Facione claimed that the ideal critical thinker is also characterized by how s/he approaches life in general or a specific problem at hand. This contention indicates that critical thinking should be understood not only as cognitive abilities but also as affective dispositions. They refer to critical thinking disposition (CTD) as “the consistent internal motivation to use critical thinking skills to decide what to believe and what to do” when one approaches problems, ideas, decisions, or issues (Facione, Facione, and Giancarlo, 2000). By developing a standardized instrument measuring the affective domain of critical thinking in seven dimensions, known as the California Critical Thinking Disposition Inventory (CCTDI), Facione delineated the attributes of critical dispositions as (1) truth-seeking, (2) open-mindedness, (3) being analytical, (4) systematicity, (5) self-confidence, (6) inquisitiveness, and (7) maturity [See Kwon (2008) for more information about each of the seven subscales]. In essence, students equipped with these critical thinking dispositions tend to have more positive attitudes toward their own critical thinking abilities and are open to unfamiliar situations or ideas. Conversely, students’ negative attitudes and mistrust about their own thinking abilities could cause illogical fear and feelings of inadequacy in performing academic activities.

### **Library anxiety**

Critical use of information resources is fundamental to higher education, therefore, many institutions stress students’ abilities to use libraries and information resources critically (Association of College and Research Libraries, 2000). With the new generation of students growing up with the Internet and the vast amount of information available to them in both print and electronic formats, the necessity to develop the ability to use information resources in and out of the library is paramount.

However, it seems there are many bumps and barriers to becoming information literate. The sources of the barriers to information access vary, including technical, physical, economic, legal and ethical, cultural, and psychological- both cognitive and emotional barriers. Among those many types of barriers, today, I’ll be focusing on emotional barriers only.

While it is essential for college students to use the academic library and its resources to achieve high academic performance, LIS literature reports the prevalence of illogical or inadequate feelings or attitudes toward the use of the library, known as library anxiety, among college students (Mellon, 1986). Library anxiety, a term originally coined by Constance Mellon, refers to recurring fear and the feeling of being lost among students who use an academic library for their research. This fear, which is experienced by 75% to 85% of college students, is attributed to feelings of lack of competence when students believe that other students are competent at library use whereas they alone are incompetent. This feeling is perceived to be shameful; therefore, they tend not to ask questions in order not to reveal their ignorance or incompetence. Students also feel confusion because they are not sure about where items are located in the academic library building-a place that these students believe represents a maze piled up with an overwhelming amount of resources. To assess levels of library anxiety experienced by students, Sharon Bostick developed the Library Anxiety Scale (LAS) in 1992. The scale consists of five major sources of library anxiety, called subscales or dimensions: (1) barriers with staff; (2) affective barriers; (3) comfort with the library; (4) knowledge of the library;

and (5) mechanical barriers [See (Kwon,2008)] for more information about each of the five subscales]<sup>1</sup>. Researchers who employed Bostick's LAS have demonstrated empirically that library anxiety debilitates effective use of libraries and information resources (Onwuegbuzie, Jiao, and Bostick, 2004). It suggests that library anxiety could impede cognitive processes during the information search process in the library. This is because anxious students can easily fail to approach the problem logically or systematically.

From the previous literature, it becomes clear that both critical thinking dispositions and library anxiety are important emotional mechanisms that are very likely to affect the efficacy of information access and use. Furthermore, the two emotions, the former positive emotion and the latter negative emotion, might be negatively associated with each other in the information search process. The lack of research in this area prompted me to conduct the study that I'll be delineating in the next section.

### **A MIXED METHOD STUDY (KWON, 2008)**

Study participants were 137 undergraduate students at a state university in the southeastern United States enrolled in one of six sections of a Library and Internet Research Skills course. The study employed a mixed method approach, using both quantitative and qualitative methods. In the quantitative part, students took both Bostick's Library Anxiety Scale (LAS) and Facione's California Critical Thinking Disposition Inventory (CCTDI) surveys from which the researcher could measure each participant's library anxiety level and the degree of critical thinking disposition, respectively. The goal of the quantitative part of the study was to investigate whether college students with weak critical thinking dispositions would have greater library anxiety (LA) than students with strong critical thinking dispositions (CTD). For this purpose, the participants were divided into high CTD and low CTD groups based on their CCTDI scores. The two groups were compared for their LAS scores using a series of t-tests to determine whether students in the low CTD group would have higher library anxiety scores than their counterparts. It was found that library anxiety was consistently higher among the weak CTD group across all five LAS dimensions. The test results revealed a negative association between library anxiety and critical thinking disposition among college students

The second part of the study took a qualitative approach. The intended goal was to further explore how library anxiety and critical thinking dispositions play their roles in the space of information search tasks. For this purpose, I took a phenomenological approach where

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<sup>1</sup> Despite its popular use, Bostick's LAS has received criticism due to its inadequacy in the current academic library and digital environment. Developed prior to the Internet and Web environment, prior to now popular distance learning in higher education, and virtual reference services in academic libraries, the LAS simply does not reflect library use in the 21<sup>st</sup> century. Moreover, it being developed in the context of North American academic library practices, it has limitations in fully addressing all the challenges and barriers that students in other countries and cultures might experience. Thus, there have been various efforts to modify Bostick's LAS, and new scales have been developed in such countries as Israel, Sudan, and South Korea. For example, Park (2010) developed a 39-item, seven subscale model called Digital Library Anxiety Scale (DLAS) in South Korea. The scale addresses the issues raised in the digital library environment in non-US academic library services and culture, and in the libraries of non-English speaking countries. The seven subscales include barriers that relate to (1) Affective, (2) Resource Accessibility/Obtainability, (3) Library knowledge, (4) Security, (5) Language, (6) Research task, and (7) Technology.

students were asked to write an essay to report a critical incident from their past experience of library use following the instructions below:

Recall your most recent or most memorable experience of using the library and its resources to write a research paper. Write an essay in 500-1,000 words describing your thoughts and feelings as you worked from the beginning of the assignment to its conclusion. What were you thinking and how did you feel when you used the library and its resources to find information for the research paper?

From the analysis of student narratives, several notable patterns emerged, revealing an underlying mechanism that explains the nature of the association between critical thinking disposition and library anxiety in the library research process. They are described below:

***Pattern 1: Library anxiety was still prevalent among most college students***

Library anxiety was observed as a common experience to most students who initiate their library search tasks for their academic works. Two types of library anxiety, affective barriers and barriers with staff, were particularly prevalent among most college students participating in the study. The following initial feeling was typical in both high and low CTD groups:

“I would not say that libraries intimidate me, but I would say that they overwhelm me to the extent that I avoid them altogether.... my biggest shame is that I am clueless in the library. I don’t know where to start when I have to research something not using the internet.” (Sarah, 19, Sophomore, in the weak CTD group)

“I was intimidated since I had never had to search for books in the library before. I was able to use the computer to find books that I wanted... I had no idea how the library was set up and it was like walking through a maze. I didn’t want to ask a librarian for help because I felt foolish.” (Heather, 27, senior, in the strong CTD group)

***Pattern 2: Library anxiety hampered critical thinking skills***

There were constant indications that library anxiety, a negative emotion, interrupts critical thinking capabilities that should be used to search for information. The abovementioned Sarah in the weak CTD group went on to say:

“When I went into the library, I was immediately confused about which floor to go to, and the confusion quickly led to frustration. *I do feel that I possess a very high level of thinking and logic[cal] skills* but my patience with ‘where do I even start’ is what makes me most uneasy at the library.” (Sarah, 19, Sophomore, in the weak CTD group)

Many study participants, just as Sarah, felt that their normal thinking capability was hampered by the feeling of being lost and anxious.

***Pattern 3A: Critical thinking dispositions helped to reduce anxiety and to reinstate critical thinking abilities***

Yet, there comes a chance to get back on track. Although Matt (19, Sophomore, in the weak CTD group) experienced losing his thinking abilities due to the anxiety, interestingly, his subsequent statement implied a transition. It was his efforts to make sense of the unfamiliar situation and to get back on track:

“I was just looking around blank, trying to figure a way to start my research ... after walking around a few laps, I had more self esteem about finding stuff.”

When facing challenges, his critical spirit or positive critical thinking disposition (“trying to figure a way to start my research”) was activated. It, in turn, served as a force to reinstate the hampered critical thinking skills. Various approaches that the students took enabled them to activate positive critical thinking disposition, which helped them feel they could resolve the problem. Jen (22, Senior) noted her experience as follows:

When I first walked in the library I was intimidated. It was a little bigger than what I was used to. Once I took a couple of deep breaths I realized that it was still a library and I have been using them since elementary school. When I finally calmed my nerves, I had no problem finding the information that I was looking for. ... I knew I could find plenty of resource material to research.

Jen’s narratives have several clues that hint her strong critical dispositions to approach the problem logically (“took a couple of deep breaths”; “calmed my nerves”) and self-confidence toward her critical thinking ability (“I knew I could find plenty of resource material to research”). These efforts enabled lowering her affective barriers to the library and eventually resolving the problem.

Even for the students who felt afraid of using a library they had never used before, their strong critical thinking dispositions of being *systematic* helped them figure their way out:

... I had no idea how the library was set up and it was like walking through a maze. I didn’t want to ask a librarian for help because I felt foolish. Eventually, I figured out the way the library was organized and found all of the books I wanted. ...I felt that my thinking abilities turned out well once I figured out where everything was and finally found my books (Heather in the strong CTD group).

This systematic approach to understanding the academic library’s seemingly complex organization systems enabled students to bring their thinking capabilities back to normal.

*Inquisitiveness* was another type of critical thinking disposition often observed among students with strong CTD:

I will admit at first I was apprehensive and unsure of the steps to take and the route to go or where to find things. I took it upon myself to take a trip to the library to walk around and learn the layout and content of each floor, where help was located and the areas I would need to focus on and be in during my time there. Once I did that, I felt very comfortable to return and start my research process... (Hudson in the strong CTD group).

This positive affective state relates to exploration and helped students quickly reinstate cognitive strategies that can help perform task-relevant activities.

***Pattern 3B: Students with weak critical thinking disposition suffers***

While most students were able to activate their positive critical thinking dispositions in an attempt to tackle their tasks at hand, it was not always the case, especially among those students in the low CTD group.

“When I first chose the story, I was confident that I could write a satisfactory essay. ... After three exhausting days of worrying and pretending my search was going well, I gave up... I had no good notes to refer to when I sat down to write the essay... The resulting work was poor.” (Nicole, sophomore, in the low CTD group with high LA)

Her narratives largely lack any of the seven critical thinking dispositions throughout. Without finding any breakthrough, her initial confidence in research and her own thinking abilities was dissipated over time with growing frustrations with the library. Students who were not able to deal with the negative feelings (i.e., library anxiety) properly ended up clueless and hopeless.

### AN INTERACTIVE MODEL OF CRITICAL THINKING AND LIBRARY ANXIETY

The following Interactive Model of Critical Thinking and Library Anxiety emerged from the analysis of student essays.

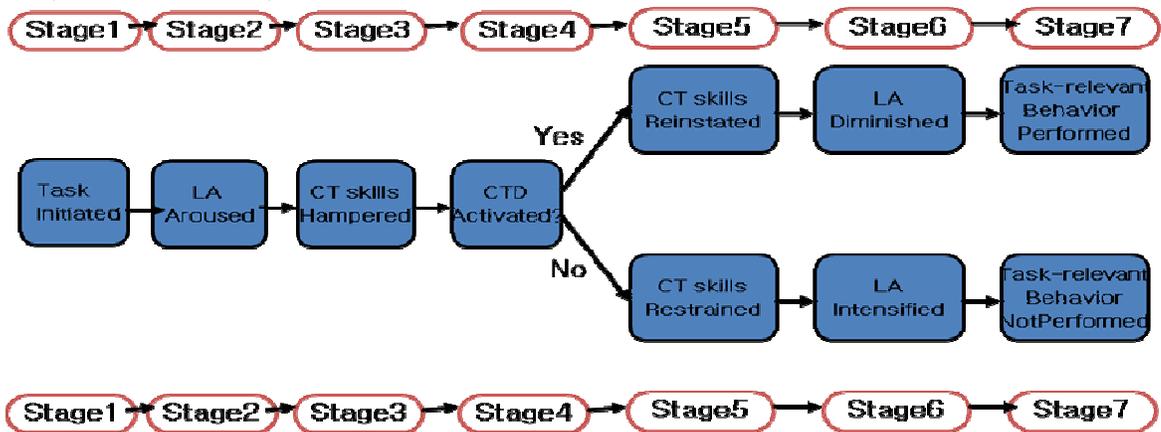


Figure 1: An Interactive Model of Critical Thinking and Library Anxiety

According to the model, undergraduate students generally feel library anxiety as a common experience when they start a research task in the library (Stages 1-2). Library anxiety, a negative emotion, debilitates a student’s critical thinking skills and abilities (Stages 2-3). Facing this situation, positive critical thinking dispositions, or positive emotions, are prompted in an effort to execute the task when facing problems (Stage 4). This positive emotion helps reinstate the hampered critical thinking skills (Stage 5), eases library anxiety (Stage 6), and often helps the student find information relevant to the research task (Stage 7). It explains how the two emotions, the negative library anxiety and the positive critical thinking disposition, interact with one another and affect the entire process of the library research process.

The proposed model depicts a pivotal role of critical thinking dispositions in the information search process by illustrating their influences on the subsequent cognitive and affective states. It can be contended that critical thinking dispositions are the key factor that regulates negative emotions (that is, library anxiety) and activates cognitive capabilities (that is, critical thinking abilities). It can be also contended that critical thinking disposition is a catalyst that can change the information search process from frustration to hope. For example, if strong critical thinking dispositions were not present, a student who was weak in critical thinking disposition wrote, “I was lost in the library... There was

nothing about this experience that made me feel confident in my thinking abilities or writing skills... After three exhausting days of worrying and pretending my search was going well, I gave up." Because her positive dispositions were not activated properly to handle her negative emotion, she remained apprehensive and seemed to have failed to find information relevant to her task. It further suggests the importance of positive emotion in carrying out the information task successfully.

Before further discussing the findings and their implications, I'd like to delineate some important theoretical discussions we can elicit from the model first. The model strengthens the claims made by Nahl's (2005) *affective load theory* in which negative affective states disrupt cognitive strategies, interrupt the search, and often bring a premature termination; whereas, positive affective states command persistence and integration to cognitive strategies by handling ambiguity and cognitive loads properly. This chain of emotion-cognition-action is further explained by Isen, Daubman, and Gorgoglione (1987). According to their account, positive affect facilitates learning by simplifying the task and making research more efficient. The underlying mechanism is that positive affect serves as a retrieval cue for positive material in memory and which, in turn, influences cognitive activities (e.g., categorization, similarity, judgment, memory, decision-making, and creative problem solving) in unfamiliar contexts. This is because, when facing uncertainty, cues related to the existing body of knowledge become associated with the new knowledge and later are able to serve as effective cues for recall. This theoretical explanation is illustrated by Jen's remark:

"when I first walked in the library I was intimidated... *Once I took a couple of deep breaths I realized that it was still a library and I have been using them since elementary school... I had no problem finding the information....*"

Supporting Isen et al.'s explanation, clearly, the student's orderly approach to handling the problem served as the cue that enabled her to retrieve her existing knowledge of the library, which, then, helped her perform cognitive tasks more effectively. From this learning, we could ask to ourselves, *how should we design information systems that can assist students to retrieve a relevant memory? And, how should we design information systems that can assist students to take an "orderly approach" to trigger a relevant memory?*

Researchers have started to unveil the role of emotion and its interactions with cognition in the context of information behaviors. Such understanding of how both positive and negative emotions play a role is the first step to develop effective coping mechanisms for information searchers suffering from uncertainty (Nahl, 2005). Equipped with this knowledge, we could ask ourselves, *how should we implement an effective "coping mechanism" when delivering information literacy programs and when designing information systems?*

## **CLOSING: WHAT IMPLICATIONS CAN WE DRAW FROM WHAT WE KNOW NOW?**

Perhaps, a very notable but disturbing finding of the mixed method study is the fact that the Net Generation still suffers from library anxiety. The college students now do not seem to be much different from Mellon's college freshmen who suffered from library anxiety 25 year ago. This phenomenon informs that library anxiety still is a hindrance for many students in the Net Generation to perform their library task.

Now, equipped with the knowledge about the affective domain of information behavior, we can suggest some practical implications for librarians teaching information literacy. Teaching information literacy to the Net Generation should take a holistic approach that incorporates both cognitive and emotional aspects. Instruction librarians can teach critical thinking dispositions to promote positive emotions while teaching library anxiety to reduce negative emotions. Employing various strategies to regulate the emotions properly, librarians can have their young patrons experience an emotion-supporting, confidence-building library service.

Space redesign can help developing a better emotion-supporting system. In the above mentioned University of Rochester's Undergraduate student research, students took a photo of library stacks when they were asked to take a picture of the place in the library that does not make any sense to them. Redesigning the library space based on the diverse student perspectives could remove unnecessary emotional barriers to the library. A recent article in *Research Library Issues (RLI)*, "Learning and Research Spaces in ARL Libraries: Snapshots of Installations and experiments," reports libraries' latest moves to create well-articulated spaces and services for their students, such as (1) flexible, user-influenced spaces, (2) classrooms, workshops, instruction, (3) galleries, art exhibits, performances, events, (4) café s and refreshment, and (5) presentation practice facilities. The new culture developed with these new library building designs are anticipated to ease the anxiety caused by an unfamiliar physical environment.

Another emotion-supporting effort is to teach library anxiety as a natural process via information literacy programs. Many students feel ashamed of their ignorance of the library system, thinking that all other people are good at using the library system, which results in inadequate performance. Positive experience with librarians through personal encounter could help students, as one student reported, "It was during this instant that my relentless anxiety [of the library] started to change for the better. Right away, I was greeted by a warm and friendly librarian who put me at ease (Laura, 24, Junior)." Studies have reported that simply knowing that the inadequate feeling is common to most students actually reduced library anxiety (Kracker and Wang, 2002). Teaching that library anxiety is a common phenomenon for most college students, librarians can dispel the inadequate feeling.

Along with the efforts to reduce anxiety, instruction librarians can also promote critical thinking dispositions, the positive emotions in designing the instruction. Among other types of critical thinking dispositions, some dispositions appeared to play a greater role in easing the anxiety. They were critical thinking self-confidence, systematicity, and inquisitiveness. Accordingly, the instruction could be designed in a direction to support students to feel a greater level of confidence about their own reasoning processes and cognitive abilities.

Librarians could also promote a systematicity, orderly, and persistent approach to students informing that such an approach could help them understand their task more clearly and perform better. Indeed, a personality trait frequent among more competent students was their conscientiousness (Kwon, n.d.). Conscientious students are willing to use effort and work hard to achieve their goals. Furthermore, students often reported that their critical thinking was developed in actual use of the library. While the system should be designed to be more user-friendly, the investment to learn the system on the student part is also critical to alleviate frustrations and build their confidence. In the recent years, many academic libraries have implemented federated search engines that facilitate searching

across various resources and databases owned by the library. This resembles the simplicity of the popular Google search box. Although such efforts have yielded some success, users still need to know how to formulate better search strategies for in-depth searches and what federated search engines can and can't do (Tang, Hsieh-Yee, and Zhang, 2007). Thus, librarians should articulate to the students the importance of diligent and focused attitudes in dealing with information tasks.

The last, but not the least, useful critical thinking disposition is inquisitiveness. Inquisitiveness values information, is not afraid of asking for help, and asks questions to learn how things work. Instruction librarians could create a learning environment that encourages intellectual curiosity and emphasizes the value of learning so that students could build the habit of being persistent when facing intellectual challenges.

A study reports that students who are open to experience were more likely to be competent in their information literacy (Kwon, n.d.). Curious and interested students, with confidence in their capability to critically analyze information, are not afraid of new information content but rather welcome it. They may feel more at ease to modify search strategies and diversify search terms. The usefulness of this open, positive, explorative attitude is well documented in a study of college student's Wikipedia use (Lim and Kwon, 2010). While Wikipedia has been considered to be a "bad information source" that lacks credibility to many, recent studies report a great value of Wikipedia if it is explored strategically as an initial information source. While female students maintain "blind skepticism" to this unorthodox source, male students seem to obtain greater benefits by actively exploring the source with a more open attitude. They tended to feel less afraid of taking risks as exploring this unconventional, non-authorized information source. In fact, librarians could utilize Wikipedia as a great instructional material to teach information literacy skills. It advises librarians to relax their attitude toward the unorthodox information sources. This innovative approach would be adopted by the librarians who want to develop effective information literacy programs concerning web 2.0 information sources. When introducing a popular yet unconventional information source such as Wiki, librarians should employ positive emotion as well as cognitive scrutiny when developing strategies to make effective use of Wikipedia for the Net generation.

Finally, system librarians could experiment further with new Web 2.0 features to develop emotion-supporting, confidence-building information systems. Those new features may certainly be more interesting and familiar, which are the Web source characteristics that attract the Net Generation to the source (Recall that both "interesting" and "familiar" are the two least perceived characteristics of library online databases). As some of those experiments in real life, Myungji University in South Korea incorporated User Generated Contents in the library homepage (e.g., for library orientation contents, such as "How to use the library maximum") for greater user participations. It also features YouTube, Flickr, user tagging in the library online catalog. Another example is a visual catalog, such as *AquaBrowser Library*<sup>®</sup>. The visual catalog could enhance the chance for a greater discovery of resources through intuitive visualizations, which can be particularly effective to the Net Generation. In short, libraries could further promote the availability of good resources through actively expanding user participation via social networking, tagging in the OPAC, and user-generated contents (UGC) for library instruction. Librarians could design the information literacy program in a way to help users experience immediate benefits and playfulness using quality sources. Each of these efforts to develop emotion supporting services will empower the Net Generation by bringing a greater accessibility to great library information resources.

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