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Abstract

This study examines faculty perceptions of teaching information literacy and explores the influence of these perceptions on pedagogy. The study adopted an inductive phenomenographic approach, using 24 semi-structured interviews with faculty teaching first-year courses at an American public research university. The results of the study reveal four qualitative ways in which faculty experience teaching information use to first year students that vary within three themes of expanding awareness. The resulting outcome space revealed that faculty had two distinct conceptions of teaching information literacy: (1) Teaching to produce experienced consumers of information, and (2) Teaching to cultivate intelligent participants in discourse communities. When information experiences are intentional, and involve using and teaching information use while learning the discipline content, this becomes "informed learning", which is a pedagogical construct developed by Christine Bruce (Bruce and Hughes, 2010) that involves experiencing information in new ways while learning disciplinary information behaviors and content. This study gives new insight into the nature of this "informed learning" in first-year college courses and reveals that faculty create cultures of inquiry in their classes and, in so doing, treat information literacy as central to their disciplines. In addition to providing a more substantial understanding of faculty perceptions of teaching information use, the study indicates that the new ACRL Framework for Information Literacy and the changes to SCONUL Framework reflect an approach to teaching information literacy that will be welcomed in the college classroom.

Keywords: Academic libraries, first-year students, information literacy, informed learning, pedagogy, phenomenography

Introduction

The quality of information literacy instruction taking place in college courses is often difficult to ascertain. The National Center for Education Statistics, and other national studies (Johnson et al., 2016; Staley and Malenfant, 2010) present quantitative data on the value of information literacy instruction in higher education, confirming firstly, that information literacy is taught in the higher education curriculum; secondly, that information literacy is important to student success; and thirdly, that library faculty and resources are integral to the academic life of the institution. Although valuable, these reports do not give an accurate assessment, or complete picture of the information literacy instruction that is taking place, as they fail to collect data related to the information literacy instruction that is conducted by the teaching faculty, and also fail to reveal the extent to which information literacy is viewed by these faculty as being intrinsic to the teaching of discipline content. Weiner's (2012) survey of the information literacy teaching practices of the disciplinary faculty confirms that some level of information literacy instruction is taking place in the curriculum, even if it may be inconsistent and vary greatly between colleges, departments and disciplines. This information literacy instruction is usually fully integrated into the course instruction and invisible to library faculty. It is also, sometimes difficult to isolate information literacy instruction from other literacies such as digital, media, visual, critical, or meta-literacies as they all involve experiences and competencies that relate to information use in different contexts and media. Similarly, the experiences with information that occur as part

of rudimentary discipline instruction in the college classroom are also difficult to identify as separate abilities because the learning that occurs in relation to information use is intrinsic to the subject content.

Definitions of information literacy abound, and there is currently no consensus on what information literacy is but it is becoming increasingly evident that information literacy is more than just the acquisition of functional skills or a set of procedures, but also involves the "personal, social and ethical dimensions of interacting with information" (Boon et al., 2007) in specific contexts. Farrell (2016) refers to this context as a "situated place" within the disciplines, where the teaching of information use is integrated into the socio-cultural practices of the discipline and is fundamental to teaching and learning. Using information effectively in any context is the part of the teaching and learning that occurs both serendipitously as well intentionally throughout the curriculum. When these information experiences are intentional, and designed and with the purpose of learning the subject content, it becomes "informed learning" a pedagogical construct for teaching information literacy that was developed by Christine Bruce (Bruce and Hughes, 2010). It involves experiencing information in new ways while learning disciplinary information behaviors and content. It is this "informed learning" that may be difficult for academic librarians to achieve because they often teach information literacy instruction alongside the curriculum, decontextualizing it from the discipline, and creating an environment that Andretta (2007) views as incompatible with the deep learning that needs to take place. It is the examination of this learning that emanates from new experiences with information that forms the basis of this study. As faculty teach their discipline content they experience "teaching information use" in qualitatively different ways, and this informs their pedagogy which, in turn, has an impact on the way students use and experience information.

Phenomenography is a research approach that is used to study the different ways people experience a phenomenon and the variations that occur within these experiences (Marton, 1981). It has been used to study teaching and learning in a variety of disciplines and so is an appropriate research approach for this study because it will provide a detailed description of all the ways information is experienced by the faculty as they use information to teach, and as they teach information use in their first-year courses. This is not an investigation of faculty definitions of information literacy, or an investigation of faculty's interpretation of information literacy standards and guidelines, but an examination of how faculty interpret and think about aspects of teaching information use, and how this is operationalized in the classroom.

This study gives a clearer view of information literacy teaching and learning particularly in the way the faculty teach information use, and also reveals what their expectations for student learning in this area might be. This paper will examine the various ways that faculty experience teaching information literacy in first-year college courses and will help librarians not only to understand the social and integrative practices of information use that are taught and valued in the teaching of the discipline content, but will also help in the identification of the information literacy concepts and skills that are not taught consistently in-course, and the concepts relating to information use that faculty find difficult to teach. In this way, the faculty experiences in teaching information use can be used by library professionals to select pertinent information literacy content and to inform the pedagogy that librarians will use in the development of more relevant information literacy instruction.

Literature review

Defining information literacy

Information literacy has often been defined in terms of information-seeking behavior and knowledge acquisition and the ability to understand how information is organized and how it works in the society (Badke, 2010). Widely accepted definitions are found in the standards developed in the field of library and information science and are articulated in terms of the mastering of isolated skills and competencies, and often studied in the context of library services, resources and instruction.

Pinto et al. (2010) in their examination of the presence of the term "information literacy" in popular library and education databases discovered that the term was increasingly recognized in the literature of other disciplines and viewed this as a positive indication that information literacy is becoming more integral to the college curriculum. A related investigation by Badke (2010) reveals that unfortunately, this is not the case in higher education journals where over half contained no references to information literacy at all, suggesting that information literacy is either not of major importance in the higher education curriculum or that it is referred to using different terminology. Information literacy definitions are evolving, and consequently, there is no evidence that, despite the efforts of librarians, there exist common definitions or terminology across the disciplines even though it is apparent that information literacy concepts are intrinsically linked to other literacies and are relevant and integral to all learning.

Lloyd (2011) finds in her investigation of information literacy in the workplace, that participants show evidence of information literacy competency without having any librarian involvement, and suggests that information literacy is about learning ways to navigate "diverse information landscapes" that are unique to particular social and academic communities. These "landscapes" are constructed by the behaviors and information practices that outline how the members define information and disseminate this

understanding throughout their communities. The interconnection of information literacy with other disciplines and literacies has made it even more difficult for scholars to arrive at a shared definition and has prompted revisions of information literacy standards to accommodate a more fluid set of frameworks and applications. In the last five years both the Society of College, National and University Libraries (SCONUL) and the Association of College and Research Libraries (ACRL) have revised their information standards to create frameworks that present broader conceptual definitions of information literacy. The revised ACRL Framework for Information Literacy (2014) seeks to define concepts that are central to information use, research and scholarship. These concepts are articulated in descriptions of "knowledge practices" and "dispositions" that are observed in the learners' changed attitudes and behaviors when they encounter new information experiences. In the UK, SCONUL (2011) also revised the "Seven Pillars of Information Literacy" to describe information behavior and experiences through different "lenses" that are more applicable and relevant to non-library environments. Both revisions focus on the learner's ability to engage with information in diverse ways, acknowledging that information literacy is intertwined with social relationships and information experiences. Ultimately these developments have effectively paved the way for information literacy to be more easily integrated into discipline teaching.

Faculty conceptions of information literacy

In a Delphi study involving library professionals, Saunders (2009) examines the future of information literacy in academic libraries and highlights the concerns librarians have regarding their diminishing level of involvement. The participants cite the teaching faculty's negative attitudes towards information literacy instruction as one of the major barriers to the integration of information literacy in the curriculum. Badke (2005) also mentioned this attitude, drawing attention to a long-standing "faculty culture" that was resistant to collaborations with non-subject specialists, and this was further confirmed by Arendt and Lotts (2012) and Nilsen (2012) whose studies revealed that the faculty still viewed academic librarians primarily as service providers, collection managers, and administrators and far less so as teaching faculty. Bury (2011) investigating information literacy instruction practices and perceptions of faculty at York University, found that although 74.9% of the faculty consistently incorporated information literacy into their teaching, when asked about the "best" time to offer this instruction only 45% preferred in-class time, proving, according to Bury, the prevalence of a "NIMBY" (not in my back yard) attitude to information literacy instruction (Bury, 2011: 58). Subsequent studies, however, bring further insight to this subject, suggesting that faculty may not see the need for librarian involvement during class time because they often teach information literacy intuitively as a part of the discipline teaching. It is common that information literacy research adopts a library-centric focus, applying a methodology that investigates faculty attitudes and experiences with "library" content and resources by focusing on, (a) faculty attitudes towards information literacy definitions and standards (Dacosta, 2010; Gullikson, 2006; Weetman, 2005); (b) faculty relationships with library faculty, instruction and resources (Gonzales 2001; Meer et al., 2012) and (c) faculty attitudes towards campus-wide information literacy programing (Saunders, 2009). Such studies often treat as negative any lack of faculty/librarian collaborations, because the focus of the research is on library involvement in information literacy instruction and not on the content and pedagogy of the instruction.

Other studies that are more relevant to this research take a more learner-centric approach by exploring the information experiences that take place in the classroom. One such study by Cope and Sanabria (2014) implies that the absence of librarian involvement in course teaching may be because faculty members conceptualize information literacy as a part of the discipline teaching. In the past 10 years six critical studies (Bury, 2011, 2016; Cope and Sanabria, 2014; Dacosta, 2010; Dubicki, 2013) have investigated faculty conceptions of information literacy, and have built on Bruce's "Seven Faces of Information Literacy" (1997) and Boon et al.'s (2007) seminal research of English faculty perceptions of information literacy, to offer some insight into the information literacy pedagogy of teaching faculty.

In four of these studies (Bury, 2011; Dacosta, 2010; Dubicki, 2013; Saunders, 2012) the researchers have presented an understanding of information literacy as one that parallels what faculty perceive as necessary information literacy standards and competencies in their disciplines. Although Saunders (2012) suggests that while many members of faculty perceived information literacy instruction as falling outside of their responsibility, this was not corroborated in these other studies, as all four studies indicate that in addition to recognizing and valuing information literacy standards, faculty consistently taught and evaluated some of the skills through their instruction, assignments and course projects. Dacosta (2010) in her study of 140 faculty in two four-year colleges in England and USA found that 50% of the faculty who were surveyed admitted to actively teaching and assessing IL skills in their courses. Similar results emerge in other studies carried out by Bury (2011), Saunders (2012) and Dubiki (2013) who found that although faculty initially conflated information literacy with computer literacy or substituted it for library use, when faculty were presented with the 2000 ACRL definitions they understood the competencies and shared credible examples of the teaching and learning of information literacy that occurred in the classroom. Bury (2016) also found that faculty incorporated information literacy as a part of a "critical skills package" of equal

value to academic reading and writing and the ability to work with different forms of academic materials. In that study, faculty commonly described information literacy in terms of the ability to apply different strategies to evaluating primary sources in the sciences and the humanities. Faculty in Dubiki's (2013) study described information literacy as a skill that involves the ability to envision a source prior to the search, referring to this as an "archival intelligence" that is a necessary prerequisite for all successful research.

The two other studies (Bury, 2016; Cope and Sanabria, 2014) ask questions that focus on faculty and student interactions with information, and in the process, reveal more aspects of faculty conceptions and pedagogical approaches to teaching information literacy. In Bury's (2016) qualitative analysis of 24 interviews, faculty view information literacy as augmenting the basic literacy of reading and writing with the ability to be selective in reading choices, the ability to identify critical reading, and the ability to decide whether to include or exclude related readings. Cope and Sanabria's (2014) also report that faculty view information literacy as a fundamental literacy (related directly to the ability to read and write), but reveal that faculty, more importantly, view information literacy as discipline-specific and teach information literacy through three themes: a contextual theme that involves teaching students to select relevant information; a textual theme that focuses on the teaching of reading and synthesizing of ideas to stimulate new ideas; and an empirical theme that focuses on teaching how to interpret and analyze empirical data.

Much of the existing research has revealed that faculty routinely integrate the learning of information use in their courses. These studies have demonstrated that the extent to which faculty integrate information use in their courses is mitigated by their discipline needs and context. In this study, we further examine this with the expectation that understanding how faculty teach information use can enhance the efforts of librarians in meeting the needs of students more effectively.

Informed learning and phenomenography

Informed learning, an information literacy pedagogy developed by Bruce (2008), focuses on the diverse experiences with information that are encountered in the process of using information to learn, emphasizing the value of the interactions with information and how they facilitate learning in various contexts (Bruce and Hughes, 2010). The study of informed learning is grounded in the phenomenographic research approach commonly used in the social sciences to investigate a subject's experiences with and conceptions of a phenomenon (Sin, 2010) and was introduced by Marton (1981) in the 1970s to investigate learning. Phenomenography is referred to as a second-order perspective because it results in descriptions of experiences with the phenomenon and not descriptions of the phenomenon itself.

Bruce (1997) first used this approach to investigate information literacy experiences of educators in two Australian Universities. This resulted in Bruce's "Seven Faces of Information Literacy" that proposed seven distinct ways of experiencing information literacy and introduced this relational research approach to the field of library and information science (LIS). In the past 10 years phenomenography has been used increasingly in all aspects of library science research to explore, among other things, the information literacy conceptions of web design professionals (Abdia and Patridgea, 2013); the information literacy experiences of nursing and college students (Andretta, 2007; Diehm and Lupton, 2012; Forster, 2013; Maybee et al., 2013); high school teachers' conceptions of information literacy (Williams and Wavell, 2006), and college faculty conceptions of information literacy (Boon et al., 2007; Maybee, 2007). Most recently Forster gives substantial justification for the use of this research approach in library science and its value in informing the development of "focused contextual interventions" that will help in the design of more relevant information literacy instruction in and out of the classroom. (Forster, 2015: 2)

Using a phenomenographic approach, the current study is one of the first to investigate faculty conceptions of teaching information literacy by examining the teaching and learning that is related to information use in first-year college courses. The results provide rich descriptions of learning outcomes and teaching strategies that are associated with information literacy, and offer an introductory insight into the informed learning that is currently taking place in the first-year college curriculum.

Methodology

This study employed an inductive phenomenographic design to focus on faculty experiences and interactions with teaching information use in their first-year classes. In phenomenography, mutually exclusive categories of description form the foundation of the study results. The categories of descriptions relate to each other to form an "outcome space" that is used to describe the phenomenon and is then shared as the results of the study. In this phenomenographic study the researcher used categories of descriptions abstracted from in-depth interviews to articulate different ways faculty experienced teaching information use in the first-year college classroom. These descriptions are articulated through quotes that are an integral part of the descriptions. Effective analysis of this phenomenographic data required numerous readings of the interviews in order to identify patterns and themes as the researcher examined how each member of the faculty described and spoke about the phenomenon, and how the faculty respondents differentiated between what was

Table 1. Demographic variation within sample of 24 interviews.

Gender	10 Female; 14 Male
Rank	4 Professors; 7 Associate Professors; 4 Assistant Professors; 1 Professor of Practice; 2 Associate Professors of Practice; 2 Assistant Professors of Practice; 3 Lecturers; 1 Post Doctorate Research Associate
Discipline	11 Sciences; 5 Social Sciences; 8 Humanities
Years teaching 1st year students	Range from 3 years to 24 years
Years teaching specific course	Range from 1 year to 15 years

important and what was secondary in their understanding. Although the descriptions are taken from individual interviews, the focus of the study is not on the individual but on the group as a whole. Each individual response is seen as a valid contribution to the group's experiences and conceptions, because phenomenography seeks to identify how the phenomenon is experienced by the group and does not concentrate on the individual experience.

A purposive sample was used to ensure a study population that varied in discipline, rank, gender, years of teaching and use of library resources (see Table 1). The study involved semi-structured interviews with 24 faculty members of all ranks who had taught at least one 3-hour credit course to first-year students anytime during the three years prior to the study. Participants were identified according to the department in which they held primary appointments in three general academic disciplines: sciences, social sciences and humanities, using Biglan's classification to identify applied/ pure and hard/soft disciplines, and a unique identifier to code the interviews. Employing a grid similar to that used in a study by Williams and Wavell (2006), course syllabi were used in this study to: (a) help faculty avoid the use of "superficial descriptions" (Larsson and Holmstrom, 2007), (b) to guide the faculty to talk about specific experiences, and (c) to encourage discussion and clarify any concepts or activities that the faculty referenced in their interviews.

Data collection instrument

An interview guide of eight questions was used for consistency and focus. The interview questions revolved around faculty/student interactions with information and the pedagogy used to teach information literacy. The guide included questions requiring participants to give fact-based answers, and others that required more reflection.

During the interview an intentional-expressive approach (Anderberg, 2000; Anderberg et al., 2008) was used to focus the questions. In this approach, "the meanings of expressions used in a dialogue are seen as dependent on the speaker's intention, and not assumed to be equal to predefined meanings in a social language or to general concepts in a cognitive system" (Svensson et al., 2009: 106). This involved structuring questions that allowed the faculty to talk about teaching information use in various contexts specific to their experience and allowing sufficient time (probing if necessary), for reflection, and the clarification of words, phrases and expressions. This, in turn, allowed them to elucidate their own explanations of their conceptions. In designing the questions, no pre-defined library or information science terminology or concepts were used, and the phrase "effective use of information" was used instead of "information literacy". This approach was successfully employed in studies by Abdia and Patridgea (2013), and Maybee (2007) and it ensured that faculty respondents shared their own concepts using their own descriptions (Anderberg et al., 2008) and terms. The interviews typically took between 45 and 60 minutes producing transcripts of 10–15 pages in length.

The analysis

The analysis followed an iterative interpretative approach beginning with an initial reading and listening to audio by the researcher followed by a phenomenographic analysis modeled on the work of (Akerlind, 2005). Below are the four stages of the analytic process:

1. Transcripts were read at least three times and organized into tentative groups that revealed broad themes that the faculty associated with teaching information use. These broad themes were gradually refined through constant reading and analysis, and are presented as the "themes of expanding awareness" in the results.
2. These themes of expanded awareness were then examined more closely to find the different ways that faculty used the themes to explain their experience of teaching information use. This variation within the themes is presented in the results as the "dimensions of variations".
3. Different experiences of teaching information use were then identified, named and described as the "categories of descriptions". These descriptions were articulated in terms of the "themes of expanding awareness" and their "dimensions of variations". As "categories of descriptions" of each experience were composed, they were refined through iterative comparisons on three levels: between categories in the context of their individual transcript; between

Table 2. Themes of expanding awareness and dimensions of variation.

Themes of expanding awareness	Dimensions of variation
1. Information Overload This theme references the faculty's awareness of the information "glut" that constantly needs to be managed and evaluated. When this awareness occurs, it leads faculty to focus on how to find sources, how to select good sources; and how to discriminate between different content.	**Teaching students how to manage information "glut"** a. Understanding the information need and knowing where and how to find suitable resources to match information need. b. Finding sufficient, relevant evidence and filtering out irrelevant information. c. Understanding how information flows through a discipline or social group, locating primary and secondary sources. d. Identifying and using experiential information e.g. landscapes, memories, behaviors.
2. Information Accessibility This theme relates to the faculty's awareness of how information is organized within the profession, and how information is organized within various sources. When this awareness occurs, it leads faculty to focus on how to navigate the information flow of the community, how to use the language, and terminology of the community to devise keywords and search strategies to access the databases and the Internet, and the document structure.	**Teaching students how to navigate and search the information 'glut'** a. Finding important information within the source- knowing how to identify the sections of documents to identify relevant information, understanding how to interpret graphs and data. b. Navigating organized reputable information and un-organized information- searching the internet vs. searching databases and catalogs c. Negotiating the language and conventions unique to particular discourse in academic and social communities. d. Understanding how researchers think and behave and use this information to inform searching strategies and information discovery.
3. Information Diversity This theme references the faculty's awareness of the diverse definitions that are assigned to information, the unique characteristics of each information type, and their differences and application. When this awareness occurs, it leads faculty to focus on specific types of sources and their relevance to the information need.	**Teaching students the value in different types of sources** a. Knowing a variety of information that is relevant to the course or discipline. b. Developing critical skills to assign value to the information and matching it to specific problems and issues. c. Developing information practices in social and academic communities learning the "information landscape" and how to participate in "informed scholarly conversations". d. Synthesizing different types of evidence effectively into prior and current knowledge to create new understandings and to change behavior.

conceptions categories in the context of related transcripts within their themed group; and between categories in the context of transcripts in other groups.

4. Finally, the "categories of descriptions" were used to describe the conceptions of teaching information use. To reflect their relationships, the conceptions were then grouped and organized as the outcome space that describes the phenomenon of teaching information use to first year students.

The MAXQD analysis software was used for the analysis because it facilitated the reading, note taking, coding, and grouping of transcripts and sections in situ, allowing for the contextual analysis of the transcripts and the emerging conceptions.

Results

The purpose of this analysis is to examine how members of the faculty experience teaching information use in first-year courses. From the analysis, four qualitative different ways of experiencing teaching information use were found, and these are presented in an "outcome space" to depict the phenomenon of teaching information literacy. The labels associated with the conceptions are: (a) the critical selection conception; (b) the value assessment conception; (c) the participatory discourse conception and (d) the behavioral change conception.

The four conceptions are described by the categories of description in terms of the "themes of expanding awareness" and corresponding "dimensions of variation" within each theme. These themes and variations reveal the differences and similarities between the conceptions. As the faculty described how they teach students to use information they showed an awareness of varying aspects of these themes that alternate in importance and relevance, moving from the foreground (internal horizon) to the background (external horizon) of awareness as they spoke of their different teaching experiences.

In Table 2 are the three themes of expanded awareness that vary in four ways (four dimensions of variation). The themes relate to (1) the vast quantity of information available (Information Overload), (2) the easy access to this information, (Information Accessibility) and (3) the variation in types and quality of information (Information Diversity).

The four categories of description in Table 3 describe the features that differentiate the conceptions from one another These distinctive features are described in terms of the themes of awareness, and the variations and

Table 3. Categories of description and Dimensions of Variation.

Categories of description and dimensions of variation.	
Critical Selection	**Teaching how to develop strategies for managing and finding relevant sources for specific purposes.** 1a: Teaching how to find specific sources for specific needs. 2a. Teaching how to use source structure to select the pertinent information. 3a. Teaching how to increase awareness of a variety of sources within the discipline information. *Information is used to expose students to the discipline information "ecosystem"*
Value Assessment	**Teaching how to judge the relevance, credibility, and authenticity of sources.** 1a. Teaching students how to identify what type of information is necessary to fulfil the need. 1b. Teaching students how to differentiate between empirical science research and editorial articles, and helping them to understand the difference between bias and credible arguments. 2b. Teaching students how to assess the quality of primary and secondary sources so as to understand the importance and impact that the peer-review process has to quality research. 3b. Teaching students how to evaluate text and non-textual information for quality and for the value it brings to each specific need. *Information is used to engage and encourage discussion and reflection*
Participatory Discourse	**Teaching how to analyze, and integrate other views and ideas with personal research and contributions to communicate within a specific discourse community.** 1c. Teaching students how to understand the context of the discourse and select information that is relevant and applicable to the specific conversation. 2c. Teaching students how to contextualize information within the discipline, and develop an understanding of how the social and academic context informs their searching, evaluation and use of the information 3c. Teaching students how to discover (and credit) all the participants in the conversation, how to formulate their own opinions and then contribute to the discourse. *Information is used to support, and develop, arguments, ideas, theories etc., and to explore new concepts and stimulate new thinking*
Behavioral Change	**Teaching how to use information to develop new understandings that change behavior or impact the society**. 1d. Teaching students how to use their past experience, the experiences of others, and their environment as information to inform future behavior. 2d. Teaching students to understand how researchers think, behave, and speak, and use this information to inform searching strategies and information discovery. 3d Teaching students to use and apply diverse information to inform their decision-making and behavior in their personal and social life and in other world situations. *Information is used to give students opportunities to model the behavior of researchers, and learn how researchers conduct research*.

boundaries of this awareness. The categories of description are seen to relate hierarchically, suggesting that the Critical Selection conception lays the foundation for a more sophisticated approach to teaching information use that is experienced in the Behavioral Change conception. Each category will be described below in reference to two components: (a) the teaching objectives, and (b) the information use and teaching practices. Quotes from the interviews will be used to explain the categories and the faculty respondents will be identified in the following way: (a) Discipline, (b) Rank, (c) Interview, and (d) line#; e.g. (Chemistry, Professor. HP1F: 6).

The categories of description

Critical Selection: Teaching students how to develop strategies for managing and finding relevant sources for specific purposes. Teaching objectives: Structured from the Dimensions of Variation: a, from Themes of Expanded Awareness:1, 2 and 3. This category describes teaching as helping the students to develop a basic awareness of the types and variety of sources that are central to the course or discipline, and helping them to find relevant information within the sources. Unlike Category 2 and 3, this does not focus on locating the sources but simply on being aware of what a reputable source looks like, and using the structure of the sources to select relevant information.

Information use and teaching practices: Faculty agree that although students may not have all the tools to decode some types of information during their first year, they need to be exposed to a variety of information sources and formats so they can understand that the research process is often difficult and messy, and that understanding the research of others takes time. Faculty use information to inform and expose students to the range of possible information sources that are relevant to their course

content. Upon observing that students often become discouraged and overwhelmed with the volume and density of the sources they find, one faculty member explains that, "...if it's something online, I just provide the link, so they don't have to go looking (Veterinary Science, Assistant Professor of Practice. HP1E: 28-300), opting like many other faculty, to preselect course readings, provide web-links and focus the initial instruction on teaching the students how to read and use the recommended sources effectively. Faculty model the selection process for the students and then gradually provide them with opportunities to find their own sources for subsequent assignments:

> I do a combination at the beginning of semester of providing [the students] with information. So, things like the textbook and a few videos at the beginning of the semester and maybe a few articles that I find that I think are really good examples of the topics that we're discussing ... my goal is that they know where to find the kind of information that's important to them. (Agricultural Science Associate Professor. SAIL: 49)

By teaching students how to "read structure" faculty are in fact providing access (Theme 2a) to information. Recognizing that students struggle with understanding the textbook, lectures, and scholarly articles, faculty spend a significant amount of time teaching students how to identify the main themes. They do so by dividing the readings into sections, explaining key concepts and modeling how to identify the pertinent information. A sociology professor, for instance, equates teaching information use to teaching reading strategies:

> So I need to provide them with the reading tools, with the access to the reading materials, and then also with the tools to make sense of the reading. (Sociology, Full Professor. SPIG: 33)

Faculty use active learning strategies like "Just in Time Teaching" (JITT) to test the students' understanding of the pre-readings, and to help the students read and navigate the textbooks or articles while addressing the content. One professor explains how in his quizzes he tries to connect his lectures to the textbook to teach students how to access and select the pertinent information:

> I will try to direct them to the relationship between what I think is important and I'm gonna focus on in lecture versus what's in the textbook and how they should use the textbook. So, it's either me deleting things they should pay less attention to or pointing them to things I think they need to pay more attention to in the textbook.... (Biological Science, Assistant Professor. HP1F: 24-26)

This is an example of how the faculty model the kind of investigative discovery that students will be expected to transfer to their future research. Members of the faculty also adopt other questioning techniques, giving the students time to reflect, read the text, and examine the way the ideas and concepts are organized in the document:

> "Well," [I ask the students.] "What's the main idea? What was the topic? What was the thesis of this chapter, the thesis of this paragraph? What was the supporting evidence for this idea?" I don't think they grasp that stuff ... I don't think they have that training with this type of information. (Veterinary Science, Assistant Professor of Practice. HP1E: 46)

For this sociology professor, it is imperative that students understand what he calls "the skeleton" of the information before they are able to identify where they will find the answers to the questions raised by the assignments they are given:

> Scientific articles have a structure and I say, "It's like a skeleton you gotta look at the skeleton first and then figure out which part of the article is gonna give me the answer to which type of question." That's news to them, they're used to reading from page 1 to page 100, and then they get lost in the literature review, which comes up front for the scientific literature, and then they can't figure out, well what's the author doing. "Well the author's perspective is on the last page don't look for it on the first page!" (Sociology, Full Professor. SP1G: 91)

Faculty members also encourage students to systematically broaden their search. Here another sociology professor describes what he says to his students to get them to broaden their research efforts:

> Ok so there are 10 pages on the topic of family. You're not getting away by just reading the 10 and sourcing anything within those 10 pages. Now you have to move beyond and find some sources on the issue of family. And whether or not you're going for another textbook is up to you, or you're going for a journal, it's up to you, or going for a brief or working report, then you come to me or you go to your graduate assistant. (Sociology, Research Associate. SP1C: 65)

Learning in this category is demonstrated when students are able to bring new information into class discussions. As one professor explains, he knows he has been successful when

> ... students come in with information that I wasn't aware of, or when students are able to add additional information, when they are able to contribute above and beyond what I had brought to the class. (Agricultural Science, Associate Professor. SAIL: 33)

Other faculty respondents gauge learning success by examining how effectively the information is used in their research papers and projects:

> They're very good at finding information but sometimes you know, when I look at the bibliography, or I look at their work versus what they say there's is a disconnect. Well

> you're not really telling me the most important pieces of information, or you are leaving out important facts or you're not correctly citing the information ... (Communications, Assistant Professor of Practice. SP2Z: 27)

Value Assessment: Teaching how to judge the relevance, credibility, and authenticity of sources. Teaching objectives: Structured from the Dimensions of Variation: a and b from the Themes of Expanded Awareness: 1, 2 and 3. This category describes teaching as helping students to gauge the quality of the information through an analysis of the relationship between the research quality, the quality of the information and the information need. A faculty respondent explains it in this way:

> ...Finding accurate information isn't something that I think they come prepared to do. I think it's something we have to teach them how to do. They'll go out and find a lot of information but they may not be able to evaluate it for some cases even relevance. Sometimes you get information that has nothing to do with what you are talking about or what they're supposed to be looking at. Relevance, but, even more importantly, for accuracy, and I think that's something we really need to work on with our first-year students to help them do that. (Social Science, Associate Professor. SAIL: 49)

Teaching this Value Assessment involves developing the students' understanding of the relationship between research quality and information quality:

> ...[O]ne of the big parts of the class is helping them understand the difference between information that's derived from science and information that is not and to judge the quality of information that is derived from science based on how the science is conducted. How that knowledge may differ from sort of everyday conventional wisdom or religious beliefs or just beliefs in general... (Agricultural Science Associate Professor. HA1B: 32)

Another member of the science faculty refers to a problem of "mis-categorizing of information" that occurs when students do not understand the connection between primary and secondary sources and its impact on the information value:

> So, I do have students who have a bit of a hard time distinguishing ... (like a press release ...there's a lot of science blogs out there that are just reporting press releases) that which sounds scientific, 'cause it often has the scientist giving quotes, and there are citations in there, in the papers, but they have a hard time distinguishing that from the primary paper. So, there's a mis-categorizing of information. (Life Science Associate Professor. HP1N: 54)

This problem makes it necessary for faculty to teach students how to identify and find primary and secondary sources (Themes 1b and 2b) and teach students how to assign value to the peer review process while assessing the value of the information.

Information use and teaching practice: Faculty use real life examples to engage students, encouraging discussion and reflection, modeling their own strategies and thought processes as they evaluate the information they use in the course. Teaching this critical approach to evaluating information is compounded by the copious amount of information on the Internet that is readily available and accessible. One faculty member describes how students, for example, assign equal value to popular celebrity authors as they do to scholarly authors when conducting research for a paper on family issues:

> Oh you can't use Kanye West and Kim Kardashian, and say "Okay they said this about family ..." And you cite the magazine. Now you have to say wow ... "I'm being bombarded by all the different information out there on family. Which [one of these pieces of information] is essential for me to articulate in this assignment on "The issues relating to family in the US"? (Sociology, Research Associate SP1C: 37)

He then continues to explain that he teaches students how to evaluate their sources so as to create opportunities for discussion and to give the students a chance to, in time, develop their own criteria for evaluating the information. He models this in his lectures when students' fact-check his lectures in which he intentionally includes information that could discredit his arguments:

> ... [B]ut [after we evaluate the information together] they are able now to think and say "Those ten bloggers [that I found], they're just going from their own experiences ..." That's the challenge, because it's there for them to question. (Sociology, Research Associate SP1C: 73)

Other faculty use small groups to help students explain and defend the source selection, giving time for clarification of what counts as credible evidence and reliable information. Students often struggle to evaluate information for bias and to differentiate bias from substantiated and valued theories and opinions. Consequently, faculty try to address this in their teaching. Through reflective questioning one English professor tries to get students to think more critically and not confuse bias with substantiated and well-supported opinion:

> ...[J]ust because you're making that kind of claim on what somebody else does or thinks, or somebody's doing that to you, it doesn't mean that they're biased. What I'm trying to teach is that you want to demonstrate that you've thought critically. (English, Associate Professor. SP2D: 30)

In this way, she encourages and supports the students as they question the value of the information, whether it be a substantiated or un-substantiated opinion. This is

sometimes a difficult task, illustrated as one instructor, who requires students to annotate their resources and explain their relevance to their specific case explains:

> ...[T]hat's kinda tricky to teach them the difference between, what is opinion, in that case. The idea that they're deciding what's important, is their opinion, and it does not have to be that it is good or bad, it can be "this is what I really found interesting about this" it's their opinion. (English, Lecturer. SP2A: 99)

It is this type of critical thinking and this cycle of inquiry, reflection and evaluation that faculty use most often to encourage students to think about the information in a more complicated way, paying attention to its relevance and value to their immediate need. Faculty encourage students to understand different opinions by assessing the strength of the argument and the extent to which the opinion is supported. Their goal is to ensure that that students have the ability to do this even as they learn new content.

Participatory Discourse: Teaching how to analyze, and integrate other views and ideas with personal research and contributions to communicate within a specific discourse community. Teaching objectives: Structured from the Dimensions of Variation: c from the Themes of Expanded Awareness:1, 2 and 3, this category describes teaching students how to participate in the conversations of discourse communities. As students understand that information is a part of a conversation, they learn how to analyze dialogue, respect and credit other contributors, and to articulate their personal position in relation to the other participants in the conversation. The focus of this category is teaching students how to interrogate the information and then synthesize and articulate their own views in response to the concepts and ideas presented in the sources. Learning in this category is seen as understanding disparate and analogous voices. One member of faculty explains why he teaches students how to contextualize the use of information with an understanding of what he calls the "ecology of texts":

> ...[F]irst they're not taking the text for granted, and secondly, they're starting to learn to see text as part of a larger conversation, and so a kind of an ecology of texts. You know, looking at text as belonging to the world in a certain context. (English, Lecturer. SP2A: 69)

The focus of this category is to help students contextualize information and develop an understanding of how the social and academic context informs their searching, and their evaluation and use of the information. The primary objective is to enable them to become participants in both social and academic conversations, as one member of the faculty explains:

> So, all of that to me involves information—conversation. Where and who has contributed to the conversation gathering. Sometimes it involves understanding what you know, thinking about what, who else has tried to say some of these kinds of things in this moment. Who else has tried to raise these concerns with this audience in the past, and how have they done that, right? I mean those kinds of ... what kinds of evidence has been successful, and is shaping or changing minds? (English, Associate Professor SP2K: 41)

Information use and teaching practices: Members of faculty teach students to understand and participate in the discourse by modeling how to deconstruct arguments and, how to identify and use evidence to support and refute arguments. The goal is to encourage students to read slowly, taking time to dissect the argument, to discover new ideas, to formulate their own opinions, and then to contribute their own ideas to the conversation:

> ...So, I think most of the semester ends up being dedicated to getting them to have the patience to slow down, and when they do, they tend to have these discovery moments when they realize, "Oh, this interpretation I have is based on all these assumptions that I have, and not everyone holds these assumptions, so this information ends up being processed differently depending on your experience and who you are." (English, Lecturer. SP2E: 65)

Faculty help their students understand the breadth of scholarly dialogue by encouraging them to broaden their literature searches, and investigate the complete discussion by reading the references from the articles or textbooks. This approach helps the students to understand that the conversation exists outside of the documents that they are currently reading and positions the perspective of their current readings in the context of the broader conversation. One faculty member achieves this through integrating relevant articles and outside readings into his lectures:

> And when I do find something out there ... in today's literature that questions something in the textbook, I make sure I bring that up and say, "Here is an example of how something a few years ago we thought this was absolute fact, and this is the way things work, that we can't look at it that way because we now have new data that shines a totally different light on it." (Biochemistry, Full Professor. HP1M: 25)

Faculty see this participation in the broader scholarly conversation as foundational to critical thinking. Individual and small group discussions provide a variety of opportunities for students to question and defend personal and published opinions and, as illustrated by one English professor, can be a long, complicated process especially as students develop a research focus for assignments:

> ...So since they have a question, since they're starting from a question, they're investigating a question; they are finding different viewpoints, and it raises other questions predictably. They'll read something and instead of answering the question, they're starting to think, other things that it brings to mind, right? ... I think the people who have done it effectively have used that research to give them a better

> idea of what question they're looking for. (English, Lecturer. SP2A: 42)

After this period of inquiry, faculty proceed to teach students how to formulate and interject their own ideas into the conversation. Most approach this through assigning research papers that require the integration of evidence to support or refute arguments. Because, according to one professor, students habitually list the evidence without understanding the information, the goal is to engender informed intellectual communication. As the professor explains:

> I try to get them to actually shape that information and make their own sense of it so that they can, in turn, show that to other people. (English, Lecturer. SP2E: 67)

This shaping is taught by teaching the mechanics of writing and teaching students how to organize their paper. A philosophy instructor articulates this idea when he says:

> I look at organization 'cause I'm partly trying to teach them to have a talk with other people so you've got to be writing so that other people can follow it. (Philosophy, Assistant Professor. SP2A2: 44)

While teaching students how to use information to communicate within their discipline, faculty introduce the concept of peer review and its place in scholarly conversations through student-oriented practices that give students opportunities to share, critique and discuss their sources with other students. This approach "forces them to really dig deeper to communicate with their friends" (Sociology, Research Associate. SP1C: 67) and to evaluate their own sources.

In this conception, Information Diversity is not seen as learning to assign value to different types of relevant information, as in the Value Assessment conception, but is seen as interpreting, evaluating and assigning value to different conversations while taking into account the quite diverse (even at times in terms of value) larger body of work. Much of this is taught through lectures, and in individual discussions with students as they work through their assignments:

> So they'll go find some articles. Then we'll evaluate it to see if it's a good source or not, and we do some of that work of testing sources, but also this ... having a clear sense that the notion of what counts as evidence is very dependent on the conversation you're engaged in, who it is and what they care about and what they consider as evidence, and then knowing what kinds of evidence motivates the writer to write and what kinds of evidence convince the reader to read may not be the same. At this point students have to be able to make decisions about what information is valuable at that point. (English, Associate Professor. SP2D: 18)

Faculty also stress the need to teach students how to find and use different types (facts, concepts, graphs, statistics, empirical and normative) of information as evidence, and how to reference ideas and concepts that are relevant to the argument. A philosophy professor explains it in this way:

> One of the big deals about the class is to try to get them to distinguish information for which you need evidence, empirical evidence in particular. Right, so when you're talking about moral principles it's not like you're going to do an experiment to figure out what those are, but on the other hand if you say you think it's important to save people's lives, you definitely need information about what's going to save people's lives and that's an empirical issue. So, a big part of class is just to get students to make a certain distinction about kinds of information and how you support your views about those things. (Philosophy, Full Professor. SP2A2: 13)

Managing the information overload in this conception, involves helping students to use secondary sources to understand more complicated primary sources:

> You walk into my class and tell me that there is no evidence for global warming. What's your source? So, we talk about sources a lot and what are peer review journals, versus what is a journalist's interpretation of what's in an article, and how many people have interpreted things by the time you get to it. By the time it's an article in the *Lincoln Journal Star*, and how you go back and find the original material and find that and try to make judgments. (Geology, Professor of Practice. HP2A: 30)

Successful learning in this area is evident as students participate in discussions and produce quality papers.

Behavioral Change: Teaching how to use information to develop new understandings that change behavior or impact the society. Teaching objectives: Structured from the Dimensions of Variation: d, from the Themes of Expanded Awareness: 1, 2 and 3. The focus of this category is to teach students how to think like researchers, and be active citizens of society by contributing ideas and theories that impact their personal life, their local environment and the wider community. One faculty member uses a metaphor to describe what this conception looks like:

> So we walk down the street and we read the landscape, and it makes deeper sense to us, because of the background with pulling together demographics in economics and politics and all of those things together and teaching students that all of these separate pieces of information that they get during the semester and all of the separate units are part of their "palette of tools" to help them understand more holistically the world that they live in. (Geography, Lecturer. SP2C2: 64)

Faculty teach students how to use information in this way so that they may imitate the behavior of researchers, and become, themselves, creators of new ideas and theories:

> I'm trying to instill in the students a feel for what it means to be a scientist ... a researcher. Somebody who reads what

> other people have done before them, and comes up with ideas from the results of the other people's research. I think a lot of biology students, they're used to the textbook idea of biology, and then they don't see biology as a living dynamic process. Research in biology as this thing of revision and people discussing and debating and doing experiments to show that other experiments either are or are not correct .... And so, in some ways we don't teach biology in the way that we research biology, and so I feel that by exposing students to the working with data and with literature, they just get a better idea of what biology is. (Biological Science, Associate Professor. HP1N: 33)

Information use and teaching practices: To achieve this faculty members design courses around real world issues, or contrived scenarios that motivate students to think critically about the information itself and how the information can be used to solve real world problems. Faculty use information to inform decision making by teaching students how to extract real-world relevance from information. One faculty member explains how the students are instructed to use information to explain an incident of lost Nike cargo coming over from Asia and resurfacing on the Oregon shore.

> T]hey have to go to a known a website, an oceanic and atmospheric association website, that measures sea surface temperatures, and tell whether an El Nino is coming this year or not. (Geography, Professor of Practice. HP2A: 44)

Students are expected to use credible published information, to make inferences about current issues. Another faculty respondent describes how information is used to stimulate the critical thinking that results in new ideas and opinions:

> Students are given an article containing scientific facts and are then asked to respond to the article, in this way they model what scientist do, and this enables them to identify fact from opinion when they are reading published articles. Then at the end they were allowed to state their opinions but the opinions have to be stated—this is the opinion portion right, "this is my opinion" as a matter or something like that—so that they are separating in their minds what is the actual fact and what is the actual vetted data, versus what is their feelings about it. (Geography, Associate Professor. HP1J: 15)

The professor goes on to state that the goal of this course is

> ... to have them [the students] to understand the difference between that kind of thinking and what they're getting, and how scientists behave and how scientists think. (HP1J:18)

This approach teaches the students to analyze the published research, articulate their personal views and differentiate scientific fact from opinion which models the behavior of scientists in their use of scientific information. Another teaching strategy used by a sociology professor again models the critical stance that students are expected to take when reading about life and applying that information to their personal experiences. He explains how he tackles a problem that his students encounter when reading about divorce:

> So hearing someone say, 50% of marriages end in divorce, and they're thinking "But everyone in my community where I live, they are still married, I've never seen a divorce in my community". So, I use it as a learning experience and a teachable moment as well, to really synchronize statistics with life experiences, and to explain to them that when you hear this information, it's more general, it's an aggregate so it's not necessarily what's applicable in your experience, or in your neighborhood. (Sociology, Research Associate. SPIC: 31)

The students' ability to use various types and sources of information to make sense of their worlds is essential to this category, and faculty constantly make connections between the information they are using in the class and their students' current and future life needs because they feel it is imperative to teach the students that effective use of information is a life-skill they should have:

> Well I teach it that way because I don't want them going through life thinking that everything that they read on the Internet and they read in the textbooks is absolutely true and they can't, they can't just say "Alright I've taken biology class in 201 so I don't ever have to study biology again the rest of my life because I learned it, there's nothing more to learn". (Biochemistry, Full Professor. HP1M: 26)

The phenomenon of teaching information literacy

On the basis of faculty's experiences of teaching information use as discussed in the previous sections, two conceptions can be further developed to depict the phenomenon of teaching information literacy. These are the Consumer Conception and the Discourse Conception (Figure 1).

In order to produce experienced consumers of information, the teaching focuses on developing students who understand the varied nature of information, appreciate the range and quality of information available, and who, through experience, know how to select and evaluate information to satisfy their needs at any particular time. The goal is to get students to understand that the value ascribed to the information is related to an understanding of its purpose even when the purpose may change over time and place. Finally, the hope is to convey to students the importance of crediting different value to each piece of information at each use. This conception forms the foundation for the second conception, the Discourse Conception where the teaching focuses on helping students to use information to participate in scholarly discussions and conversations through written and oral contributions. This ranges from teaching students how the structure and format of scholarly articles informs their own writings and contributions, to teaching students how to add to the body of information by interjecting their own ideas and concepts into

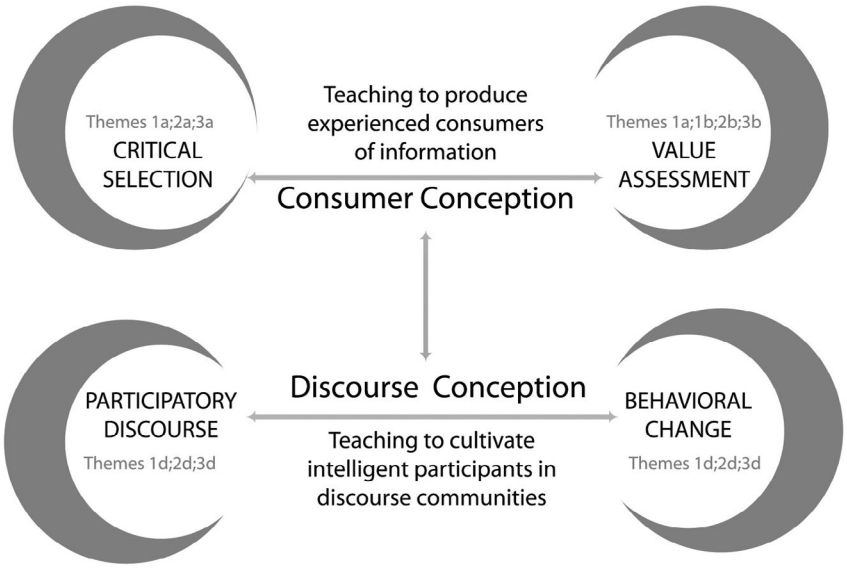

Figure 1. The phenomenon of teaching information literacy.

scholarly conversations. The expectation is that in the process the faculty, as teachers, will succeed in getting students to respect and credit other voices, to interpret and analyze opinions and bias, and to create along the way, new understanding and knowledge. The two overarching conceptions are inter-dependent although the results indicate that the Consumer Conception is usually addressed before the teaching of the Discourse Conception.

Discussion

This study presents findings that reveal that members of the faculty teach information literacy as a part of their discipline content and find it difficult to speak about teaching information use without referring to their pedagogy as it relates to the subject content. Recent investigations by Cope and Sanabria (2014) and Bury (2016) provide insight into the pedagogy and content of this information literacy instruction and confirm that faculty who teach information literacy in their courses view it as "learning how to learn" (Cope and Sanabria, 2014: 498). These faculty seek effective ways to teach students how to use the information to learn, while also teaching students how to learn about the information they use. This "informed learning" (Bruce, 2008), defines information as anything that is used as a learning tool. This definition, when applied to teaching, proves to be one of the most effective foundations for information literacy instruction.

It is impossible to teach information literacy without acknowledging the influence technology has on information availability, quality, and access. Badke (2010) cautions against the illusion that technology has made information more easily accessible and highlights the increased need for students to receive instruction on how to use it more effectively to retrieve more relevant sources. Faculty in this study agree with this view, and although the interviews may suggest that little time is dedicated to that area of teaching, faculty do acknowledge the problematic impact of technology on information learning. These views emerge through three recurring themes: Information Overload, Information Accessibility and Information Diversity. These themes help shape the overarching teaching goals that are intrinsically tied to addressing variations within the themes. For example, when faculty members address the conception Critical Selection, they focus on shielding students from information overload by modeling this selection process through providing pre-selected relevant information. In the Value Assessment conception, the focus shifts to teaching students how to handle the information overload by helping them develop their own criteria to evaluate and filter the sources. In the Participatory Discourse conception, the focus takes a more discipline-specific approach to teaching students how to handle the information overload by teaching them how to contextualize the process and select information in the context of the relevant discipline's discourse. These themes, like the themes in the Cope and Sanabria's (2014) study, are shown to be inextricably tied to the learning outcomes for the courses. Librarians can therefore treat these as reliable themes that should inform their instruction when conducting sessions for first-year students.

Faculty take a relational approach to teaching students how to use information effectively and they regard this as fostering new behaviors and attitudes to information, describing teaching and learning in terms of rich interactions between the students and information. Evaluating and identifying when students have learnt involves a clear articulation of the "act of learning" that Andretta (2012: 12), explains is unique and essential to each discipline. In this study, the act of learning is described in terms of an experience, that is evidenced when students share new,

useful and accurate information confidently in class; or when students can communicate their thoughts or opinions effectively in formal writing assignments or presentations. To the science faculty the act of learning occurs when students read their "environment" like scientists, paying attention and learning from their surroundings. Others feel that their students have learnt when the students apply their learning to situations outside of the classroom, and when they begin to perceive of themselves as creators of information through a sophisticated grasp of the way that information is generated in areas of research. This study suggests that librarians need to be cognizant of these acts of learning that faculty members value, in order to develop instruction that is integrative and valuable.

In the Consumer Conception, the teaching focuses on helping students to identify relevant information, guiding them as they weigh its value in the discipline. This corresponds to studies on students learning that illustrate that students experience information literacy as finding sources (Andretta 2012; Boon et al., 2007; Edwards and Bruce, 2006; Maybee, 2007). It also corresponds to studies that confirm that faculty also experience information literacy in a similar way (Boon et al., 2007; Diehm and Lupton, 2012; Edwards and Bruce, 2006; Webber et al., 2005). Assignments and projects are designed to provide opportunities for students to develop an analytical relationship with the information, and develop their own strategies to finding and evaluating their own sources. The fact that some faculty respondents initially seem to be more concerned with teaching students how to find and use the information from very specific sources opens up real opportunities for librarians to supplement the instruction practices of faculty with their expertise in teaching students how to find and assess these sources more efficiently.

In the Discourse Conception faculty members shift their focus to teaching concepts associated with communication and understanding of the flow of information in the discipline, and teaching students how research is authenticated within academic communities. Faculty design projects and assignments around real world issues, using information to, firstly, illustrate how researchers think and behave, and secondly, to foster an understanding of how ideas are generated and circulated in discourse communities. They dedicate time to teaching students how researchers use and interpret an extensive array of sources to further discussion and create new knowledge. They also teach the discipline content, while demonstrating how information constantly informs new ideas and theories. Finally, they seek to cultivate an attitude of continuous learning and active engagement in their students.

Conclusion

Faculty experience teaching information literacy as integrative to teaching the subject content. They hold four conceptions of teaching information use to students: (1) Critical Selection conception: teaching students how to find and use relevant resources, (2) Value Assessment conception: teaching students how to evaluate relevant information, (3) Participatory Discourse conception: teaching students how to use information effectively in scholarly conversations, and the (4) Behavioral Change conception: teaching students how to use information to change their behavior and impact the society. This information literacy instruction focuses on developing students who can communicate effectively within the discipline, who can read and understand the discourse, and who can find and select appropriate information to contribute and further the conversation. This approach is not concerned with the mastery of a skill set, but seeks to help the students understand how researchers think and behave, and to cultivate in the students an attitude to information that impacts their behavior and their approach to learning the subject content.

Library initiated information literacy instruction also needs to be taught in this way, shifting the focus from cognitive and skills-based learning outcomes to these behavioral/ attitudinal outcomes that seem to be important to the faculty. In the new ACRL framework (2014) this behavioral learning is articulated through the "dispositions" that provide librarians and faculty with a common language in which to discuss information literacy behaviors. Librarians should use the dispositions to bring a broader purpose to the teaching of the knowledge practices and the information literacy skills that students need to have. Budd and Lloyd (2004) talk of learning as understanding the "information landscapes" (2004 :2) that connect people in groups that share common information needs and practices. The members of these groups interact with information in novel ways, share information experiences and opportunities that are unique to the landscape, and also have shared values associated with different information formats and sources.

In these interviews faculty respondents give some insight into their information landscape through descriptions of what counts as information in their courses, and how students experience information. One member of the faculty describes information as a "pallet of tools" (Geography, Lecturer. SP2C2: 64) that students accumulate during their academic career that they can use to make sense of the world. This entails teaching students how to identify and engage the wide range of sources of information (e.g. graffiti, deep memories, the environment, life experiences, peer conversations, class discussions) that they experience. It is clear, therefore, that librarians should work to keep abreast of the information culture and environment within the various disciplines so as to allow them to define information sources in the context of the information "ecosystem" of the discipline. This way, they will be more able to teach students how to use all information effectively within the discipline's culture.

In order to create instruction that is relevant to the goals of the faculty it is imperative that librarians try to

understand and connect with this information landscape of the discipline, and the behavioral learning outcomes that are important to the faculty. It is difficult to evaluate the learning that takes place around information literacy in isolation. Faculty respondents identify evidence of learning by the quality of classroom discussions, and how effectively the information is integrated into assignments and projects, so librarians would benefit from visiting classes and observing these discussions. They would also benefit greatly from looking at the assignments that present information effectively and using what they learn to inform and improve their instruction such that it aligns with the learning outcomes of the assignment and the course.

Typically, librarians are faced with the task of instructing students on information literacy in various different contexts. Their lessons are usually supplemental to the broader goals of a particular course. Therefore, central to the effectiveness of the librarian instruction is the extent to which faculty and student can integrate what is taught by the librarian into their courses. This study demonstrates that the teaching of information literacy is subject-specific and changes depending on the goals and objectives of a course. Unfortunately, it is sometimes presumed that librarians represent the only opportunity for the teaching of information literacy in the classroom. However, the results of this study challenge this premise by presenting evidence of the various ways that faculty experience teaching information literacy. As librarians begin to increase their understanding of how faculty encounter information literacy and integrate it in their classroom, they will be able to shape their pedagogical approach to create a more effective curriculum for the teaching of information literacy in these classroom settings. The effective application of this information for librarians falls outside the scope of this study; however, the results of this study offer an excellent foundation for such investigations. The frames of the New ACRL Framework for Information Literacy (2014) embody the conceptions and themes presented in this study, and together with the dispositions provide a common language and an avenue for librarians to begin discussions, and to become more actively involved in the informed learning that is already taking place in the first-year college classroom.

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