5-2016

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Introduction

The new ACRL Framework for Information Literacy (ACRL, 2015) has propelled librarians into new approaches to teaching that concentrate on the concepts and not the procedures or tasks that relate to the effective use of information. It is known that students vary their learning strategies in response to the context of their learning environment (Richardson, 2011) and so it is imperative that instruction facilitates various ways of learning, that can be accommodated in both the small and large classes. Historically librarians have focused on the teaching of the skills: how to search databases, how to find information, how to evaluate information, and how to avoid plagiarism etc., with the expectation that the teaching of these skills translates into a change in thinking and behavior regarding information use. What librarians want students to learn is documented in many information literacy standards and frameworks, and what students actually learn has also been the focus of numerous studies and reports (Oakleaf, 2014). However, how students learn these information literacy skills and concepts, what type of learning takes place, and what can be done to facilitate this learning, is not frequently addressed. The latest research in student success and engagement emphasizes student centered learning as one of the most effective ways to increase engagement (Saltman, 2012) implying that engagement is synonymous with the type of learning that impacts student success in a positive way. Unfortunately,

engagement alone does not always translate into learning, but opens the door to different ways of learning that when facilitated by teaching, results in student success.

Instruction is about teaching and learning and teaching strategies are informed not only by our subject content, but also by how students learn. The new ACRL Framework for Information Literacy for Higher Education introduces two levels of content in each frame. Each frame describes an important information literacy concept that is operationalized in the Knowledge Practices and the Dispositions. The Knowledge Practices state how students are expected to demonstrate their ability to use and manage information; the 'Dispositions' on the other hand, address, a higher order thinking that transforms behavior and attitudes towards information literacy. The Knowledge Practices and the Dispositions together shape the learning goals that are related to the information literacy concepts, and outline clearly what the teaching and learning should look like in and out of the classroom. It is therefore important that all information literacy instruction should include teaching that facilitates an understanding and mastering of information literacy skills, and a teaching of information literacy concepts that results in the transformation of behavior and a new way of thinking.

BACKGROUND

In 2013 the First Year and Learning Communities Librarian at the University of Nebraska-Lincoln, was invited to teach on a new academic success seminar course that was designed for international students—ENGL 143. The purpose of the seminar was to provide students with the research and academic strategies and skills that they would need for their first year at the university. Two sections of the one credit hour course, were offered each semester, and covered a period of 15 weeks. Each section consisted of approximately 60 students and students were expected to complete one assignment for each section of the seminar. For the library instruction assessment, students were asked to write an abstract for a peer-reviewed article that they would use in their final research paper. The overall goal of the seminar course was to "acclimate the students to the structure and expectations of their future courses at the university" and the goal of the library section was aligned to the following four course goals:

1. To develop strategies and skills to support academic success.

2. To examine the role and expectations of a student in the U.S. higher education.

3. To distinguish between the ethical use of cited information and plagiarism.

4. To experience a classroom structure parallel to a typical U.S. higher education course including activities such as group work, homework and discussions.

The new ACRL Framework for Information Literacy is organized into six frames, each of which defines an information literacy threshold concept in addition to containing a set of Knowledge Practices and a set of Dispositions that further describe the skills and behavior that are associated with understanding the concepts. This has placed more emphasis on metacognition and allows for a more reflective approach to teaching and understanding information literacy. In response to this new framework, the librarian used a different strategy in designing the instruction, and concentrated on facilitating student learning by focusing on 'different ways of learning' to inform the pedagogy and teaching strategies used in the sessions. This approach is outlined in the book *Facilitating Seven Ways of Learning: A Resource for More Purposeful, Effective and Enjoyable College Teaching* (Davis & Arend, 2013). The following summarizes the steps that were taken in the development of the library sessions.

STEP 1. CONTEXTUALIZING THE INSTRUCTION GOALS WITH THE FRAMES

Instructional goals are broad learning outcomes and concepts. They define what the instruction intends to accomplish by providing a framework for identifying the specific learning objectives of the lesson. The goals should be: observable and measurable; indicate what the students will accomplish; and specify the context of the instruction. Instructional goals in addition to ensuring that the students know what will be expected of them, also identify what will be assessed and evaluated during the instruction. These activities then have the potential to become the focus of any summative or formative assessments that will be administered during or after the instruction. After discussions with the seminar faculty team the following library instruction goals were developed for the two library sessions:

1. Students will find peer reviewed articles that are relevant to their research need.

2. Students will list criteria that distinguish the ethical use of cited information from plagiarism, across a variety of research assignments.

The first task was to align the instructional goals to the ACRL Framework for Information Literacy, by identifying the most important 'threshold concepts' that students would need to understand before they could master any of the learning objectives outlined below. The frames of the ACRL framework that were relevant were: 'Searching as Strategic Exploration'; 'Authority is Constructed and Contextual'; 'Information has Value' and 'Scholarship as Conversation'.

STEP 2. CONNECTING THE KNOWLEDGE PRACTICES WITH THE LEARNING OUTCOMES

Without clear learning objectives it is impossible to assess learning because these objectives not only articulate the details of what the students will learn but how they will learn. Bloom's taxonomy, which associates cognitive processes with descriptive

verbs, is often used in formulating the college course learning objectives but unfortunately does not cover the more affective or behavioral ways of learning that takes place in the college classroom. To be effective, learning objectives should identify clearly what behavior, knowledge and skills will change as a result of the instruction, they should also include how learning will be identified and evaluated or assessed. The following questions were addressed in formulating the learning objectives:

1. What will students do differently after each library session? (Performance/Skills)
2. How are students going to think differently after each library session? (Cognitive)
3. How are students going to behave differently after each library session? (Affective)

The librarian then identified and developed several 'Knowledge Practices' that isolated the specific information literacy skills and concepts that the students would be required to learn and master, these practices then evolved into the learning objectives of the instruction.

Instruction Goal 1. To teach students to find and access peer reviewed articles that are relevant to their research topics.

Learning Outcomes:
Students will

- Use the library Internet search tools to find databases that are relevant to their topics.
- Use different types of searching language to design and refine needs and search strategies when necessary.
- Devise ways of evaluating the relevance of their article to their research topics.

Students will

- Understand that first attempts at searching do not always produce adequate results.
- Realize that information sources vary greatly in content and format and have varying relevance and value.
- Recognize the value of browsing and other serendipitous methods of information gathering.
- Identify the characteristic of information products that indicate the underlying creation process
- Resist the tendency to equate format with the underlying creation process.

Evaluation – Formative

- Students will manage the search process and results effectively by downloading 1 article or requesting copies via ILL

- Students will formulate specific criteria to evaluate and select 2 peer-reviewed publications for their research.

STEP 3. ASSOCIATING 'WAYS OF LEARNING' WITH THE 'DISPOSITIONS'

Information literacy professionals have successfully documented in various national standards and frameworks what information literacy skills students need to learn, and they continue to record evidence of students learning and share this evidence of learning in reports for funding and accreditation. Investigating how students learn has not yet become the focus of library and information science research but the inclusion of the 'Dispositions' in the framework, that describe the "affective, attitudinal, or valuing dimensions of learning' (ACRL, 2015, p. 2) have provoked new discussion about the ways students will learn this type information.

Identifying the kind of learning that needs to take place, and facilitating this learning is imperative to effective teaching. Students learn information in different ways and may have differing learning styles but this is not what should determine the teaching strategies that are used in the instruction. According to Davis and Arend (2013), the teaching strategies should be determined by the type of learning that is taking place in the classroom, the learning that is necessary to produce the outcomes and goals of the instruction. The task of the instructor is not only to identify these ways of learning but also to integrate teaching strategies that facilitate that particular type of learning. Davis and Arend (p. 38), highlight seven ways of learning that can be facilitated in the classroom, and suggest that this is what should drive the teaching pedagogy of the curriculum.

The librarian used seven questions taken from Davis and Arend (p. 36) to identify the 'ways of learning' that were associated with the learning outcomes of each lesson. The learning outcomes of the first session required students in addition to understanding some basic information and concepts, also develop critical thinking skills to be able to formulate suitable search strategies and evaluate their articles for relevance. Appropriate teaching strategies, activities and formative assessments were then developed to teach the lesson.

STEP 4. THE PEDAGOGY

Learning does not take place in the classroom at one specific time because it is a process. Students enter with prior knowledge that may or may not be of benefit to their current learning experience, they acquire new knowledge and skills in the

current instruction, and then they continue to process and apply the newly acquired knowledge to experiences outside of the classroom, in their other courses and their social environments. Learning to find information entails asking questions, evaluating results, creating and re-working search strategies, and understanding that searching is a convoluted process that requires persistence. According to Davis and Arend (2013), students learn these critical thinking skills through Inquiry, which is a specific way of learning that is taught by asking questions. The librarian then designed the instruction to facilitate the asking of questions in many forms and formats. Several activities were used in the class that provided opportunities for the students to ask questions in small and large groups, and respond to questions using a variety of prompts and formats.

The Activities: Learning Through Inquiry

The following activities were integrated into the lesson presentations:

1. Students were given time to ask questions at regular intervals during the instruction.
2. Students were asked a significant question at the beginning of the class that was answered at the end of the class. This was answered in the form of written Admit and Exit slips.
3. Comic panels were used throughout the lesson, to prompt questions for the class to answer with the information received in the presentation or class discussions.
4. A variety of questions were used—from recall and comprehension to analysis, synthesis and evaluation.
5. All questions were aligned to the learning objectives. The librarian kept a list of the lesson objectives beside the presentation notes for reference.
6. Technology and activities that encouraged interaction were used in both the large class and in smaller groups: quick writes, think-pair share, and visual polls.

Paying attention to how students learn is important for effective teaching. When learning objectives are connected to specific ways of learning, teaching becomes focused on student-centered activities and learning, ensuring that students understand both the content and concepts. The Knowledge Practices and Dispositions in the ACRL Framework for Information Literacy provide some skills and behaviors that can be used to inform learning outcomes that are cognitive and affective, and facilitate various ways learning and pedagogies.

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