

# THE ASE PROCESS MODEL: AN EVIDENCE-BASED APPROACH TO INFORMATION LITERACY INSTRUCTION

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## INTRODUCTION

The Attaining Information Literacy Project (<http://www.attaininfolit.org>) is a three-year collaborative research project involving LIS faculty at Florida State University and librarians from two community colleges. Funded by the Institute of Museum and Library Services, the purpose of the project is to identify first-year community college students with below-proficient information literacy skill levels and to develop an intervention that will help those students become more proficient. This intervention is innovative because it is driven not by specific attributes of information literacy as defined by librarians, but rather by data gathered from students about their perceptions of information literacy, their own information literacy skill levels, and their preferences for instruction.

This paper will discuss the evidence-based, student-centered approach that has been used to develop information literacy instruction to address the needs of students with below-proficient skill levels. It will describe the ASE Process Model that has been developed as a framework for delivering information literacy instruction, and will explain the strategies used in evaluating the instruction. It will also discuss how the model might be adapted for implementation in various instructional settings.

## BACKGROUND

Information literacy is increasingly seen as an important component of the skill set college students should

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possess. The Association of College and Research Libraries' *Information Literacy Competency Standards for Higher Education* (ACRL, 2000) have become widely influential in the higher education arena and are often used as the framework for designing information literacy instruction. Many higher education accrediting bodies now identify information literacy skills as an element they evaluate as part of the educational experience (Foster, 2007; Saunders, 2007), and the Partnership for 21<sup>st</sup> Century Skills highlights information literacy as a key part of their "Framework for 21<sup>st</sup> Century Learning" (Partnership for 21<sup>st</sup> Century Skills, 2004). Unfortunately, many students still enter college with below-proficient information literacy skill levels (Foster, 2006; Gross & Latham, 2007; Peter D. Hart Research Associates, 2005). Addressing the needs of such students is challenging for instruction librarians in all types of academic libraries, but is especially so for community college librarians. Open admissions policies at most community colleges mean that students come from a wide variety of backgrounds in terms of academic preparation (Boswell & Wilson, 2004). Not surprisingly, over 40% of community college students enroll in remedial education courses (Boswell & Wilson, 2004), and these students in particular often fail to complete their community college degree, much less transfer to a four-year institution (Jacobson, 2005).

## FRAMEWORKS

The Attaining Information Literacy Project has been guided by three conceptual frameworks. Bruce's (1997) relational model of information literacy has provided a phenomenographic approach that focuses on individuals' perceptions of a particular phenomenon, in this case information literacy. Gross's (1995) imposed query model has provided a way of comparing students' experiences with imposed information seeking tasks versus self-generated information seeking. And Kruger and

Dunning (1999) have provided a framework for understanding the tendency of individuals with low skill levels in a particular knowledge domain to over-estimate their skills, a phenomenon that has been shown to pertain in information literacy (Gross & Latham, 2007).

## EVIDENCE-BASED INSTRUCTIONAL DESIGN

First-year students with below-proficient information literacy skill levels were identified through the use of the Information Literacy Test (ILT) (James Madison University, n.d.), a computer-based, multiple choice assessment instrument based on four of the five ACRL information literacy standards (Standard Four, using information, is not assessed). In year one, fifty-seven students participated in semi-structured, in-depth interviews, in which they were asked to describe recent information-seeking experiences, both imposed and self-generated; their views of information literacy as well as their own information literacy skill levels; their experiences with learning information literacy skills; and their preferences for learning a new skill.

In general, students were not familiar with the term “information literacy,” nor did they think of information skills as a discrete skill set. They felt more constrained by imposed information tasks and expressed preferences for getting information from the web and/or from other people. In keeping with the Dunning-Kruger Effect, they described their own skills as “above average,” but they indicated that they saw their skills as nothing special; instead they described these skills as something everyone of their generation had. Many students conflated information skills with computer literacy, reading, and/or writing skills. Very few could identify a particular information skill that they would like to learn or improve.

In year two, sixty-four students with below-proficient information literacy skills participated in six focus groups, the purpose of which was to determine students’ preferences related to instruction. Students indicated that they preferred face-to-face (as opposed to online) instruction, small classes, opportunities to interact with the instructor, opportunities to work with other students, a combination of demonstration and hands-on practice, and the use of visuals and handouts.

## ASE PROCESS MODEL

Based on the data gathered in the interviews and the focus groups, we developed a framework for instruction that we have come to call the ASE Process Model. ASE is an acronym both for the steps in the instructional model (Analyze, Search, Evaluate) and the mean by which the model was developed (Asking Students about their Experiences). Three primary goals were established for the instruction:

1. To change students’ conception of the skills required to find, evaluate, and use information.
2. To change students’ conception of their personal ability to find, evaluate, and use information.

3. To teach one skill that students could readily use that would improve both self-generated and imposed information-seeking task outcomes.

The researchers worked with an instructional design consultant to develop the content of the instruction as well as the supporting materials, such as PowerPoint slides, worksheets, handouts, and pre- and post-intervention assessment instruments. The intervention was then pilot tested in several iterations, first with individual students using talk-aloud protocols, then with small groups of three to four students, and finally with larger groups of 10 to 12. After each iteration, changes were made to the content and supporting documents based on feedback received from both students and observers (i.e., the other members of the research team). In year three, the intervention was delivered to 46 students in five one-hour workshops.

The ASE Process Model represents the three stages of successful information seeking. Students are taught first to analyze their topic by considering what the topic is and what they want to know about it. Students are then taught to search using keywords, truncation, and exact phrases. Finally, students are taught to evaluate what they have found by considering relevance, credibility, and currency.

The instructional approach is both student centered and reality based. The intervention was designed as a one-hour workshop because it was felt that this is the reality most instruction librarians face and so could be used “off the shelf” as well as adapted for use in other instructional contexts. The design also incorporated student feedback from the focus group and the pilot testing. As such, the size of the workshop is relatively small, with 12 to 16 being the recommended number of students to include. The workshop is held in a computer lab with students working in pairs; in the case of an odd number of students, there can be one team of three. The instructor demonstrates the various steps of the ASE Process Model, but also allows the teams to practice by exploring topics they have generated themselves. Students complete web (rather than database) searches, in an effort to begin with what students consider to be a familiar (and preferred) search tool and to build on the knowledge they already have. In addition, they conduct searches on self-generated (as opposed to imposed) topics, again in an effort to capitalize on the built-in interest and motivation that comes with self-generated information seeking. The workshop begins with an ice-breaker, in which students complete a one-page worksheet about something they would like to know more about. They respond to questions about what it is they want to know and what they plan to do with the information. After that, they begin working in pairs (or threes), again using worksheets to document their working through the various parts of the ASE Process Model. Students are provided with a handout of the ASE Process Model and a checklist for evaluating web resources. Throughout the workshop, the instructor interacts with the students and asks them to share the results of their work with the rest of the class.

## EVALUATION OF INSTRUCTION

The intervention has been evaluated using a multi-pronged approach. Students who participated in the workshop took the ILT early in the semester and then immediately after completing the workshop. They also completed a pre- and post-intervention assessment as part of the workshop. In addition, 30 of the 46 students who participated in the workshop also participated in follow-up interviews approximately two to four weeks after the workshop. A control group of 46 students also took the ILT twice and completed the pre- and post-intervention assessments, though they did not, of course, participate in the workshop.

Preliminary results suggest that the students who participated in the workshop did find it valuable and they did learn a new skill. By far, most of them identified a search skill as what they learned from the workshop, specifically either keywords, truncation, or exact phrase searching. A number of them indicated that they would recommend (or already had recommended) the workshop to friends, and some reported that they are sharing their newfound skills with others. Moreover, a number of them said that they would be interested in participating in a similar workshop in the future. Few, however, could identify a particular skill that they would like to learn or improve. Most agreed that students would need to be offered some sort of incentive to attend an information skills workshop. Suggested incentives ranged from food to extra credit and even college credit. When asked to discuss what they liked about the workshop, many of the students commented on the opportunity for interaction with the instructor and other students as a plus. When asked to discuss how the workshop could be improved, some said that it should be made longer in order to have time to cover the material, and some said that the ILT should not have been part of the workshop (it was administered immediately after the workshop). Finally, when asked if the workshop had changed their view of their own skills, many indicated that it had. Several stated that before the workshop they thought their skills were “pretty good,” but that afterwards they realized they were not as good as they thought. After the workshop, though, they felt that their skills were considerably better, suggesting that perhaps they still have not acquired a more accurate view of their skill levels.

## APPLICATION OF THE ASE PROCESS MODEL

The intervention was designed to introduce students to the ASE Process Model within the context of a “one-shot” workshop, focusing specifically on web searches and self-generated information seeking tasks for the reasons stated above. However, the model is flexible and can be adapted for other kinds of instructional goals. It can, for instance, be used as a framework for teaching students how to conduct research in academic databases, use the online library catalog, consult people for information, and discover information through social networking tools. Ideally, the ASE Process Model would be introduced to students early in their program of study, perhaps even as part of orientation. Then it could be referenced in subsequent information skills workshops, such as those that are

sometimes offered in conjunction with content-based courses that require students to conduct research using primary and/or secondary materials. One or more workshops could be devoted to each part of the ASE Process—analyzing, searching, and evaluating. The beauty and power of the model is its simplicity (it is easy to teach and easy for students to remember) and its adaptability.

## CONCLUSION

Instruction librarians face many challenges in developing and delivering effective information literacy skills instruction for students with below-proficient skill levels. Because they often do not recognize that they lack the skills, such students are often unlikely to seek remediation. Presenting the ASE Process Model in a friendly, student-centered, interactive, and hands-on kind of way is one means for addressing the needs of these students. Future research is needed to determine the viability of the ASE Process Model for other kinds of instructional goals, such as teaching students to use academic databases. However, the model offers much promise both for librarians and the students they serve.

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