

## **Executive Summary of SAILS Administration 1** **Information Literacy Oversight Subcommittee (ILOC) of GEOC**

### **A. Information Literacy standards and the ILOC plan in brief**

The Association of College and Research Libraries (ACRL) promotes 5 standards of Information Literacy (IL), which are briefly stated as follows:

I: The information literate student determines the nature and extent of the information needed.

II: The information literate student accesses needed information effectively and efficiently.

III: The information literate student evaluates information and its sources critically and incorporates selected information into his/her knowledge base and value system.

IV: The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose.

V: The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.

Each standard involves several subparts at the Basic Level and additional subparts at the Advanced Level.

The ILOC plan to promote and assess IL at UConn involves 4 parts:

1. IL at the Basic Level is taught in the Freshman English course.

2. IL at the Basic Level will be assessed via the SAILS (Standardized Assessment of Information Literacy Skills, developed at Kent State University) at least once and hopefully twice during a student's undergraduate career.

3. IL at the Advanced Level is taught in the major, via 1 or more courses. IL plans have been submitted to the ILOC; some are approved, some are under consideration, and some are in the process of revision.

4. IL at the Advanced Level will be assessed via activities such as checklists tailored to each major's IL plan.

### **B. The SAILS Administration 1: Method**

SAILS presents 134 multiple-choice questions that are based on the ACRL standards I, II, III, and V (not IV because that one is interpreted as being specific to a student's major). These standards are further subdivided into the following areas: Research Strategies, Selecting Sources, Understanding and Using Finding Tools, Developing and Revising Search Strategies, Evaluating Results, Retrieving Materials, Documenting Sources, and Legal and Social Issues Related to Ethical and Effective Use of Information; between 9 and 25 questions address each area.

SAILS was administered to 823 students in English 110/111, during Fall 2007. 700 of the students self-identified as freshman, 100 as sophomores, 20 as juniors and 2 as other. We conjecture that the non-freshman included transfer students and 1<sup>st</sup>-year students who entered UConn with enough credits to be counted as upperclassmen. Students reported their current major and the findings are reported by major; however, many of these groups-by-major are very small (e.g., ANR = 40, HIST = 6) and the largest is only 144 (Business; 185 were Undecided). Thus, standard errors are quite large and most of the comparisons by major were not statistically reliable. 655 students took the test early in the semester (so-called 'pretest') while 168 took the test later in the semester ('post-test'). No significant differences emerged between the 'pretest' and 'posttest' students on any of the measures (possibly because of the small number of 'posttest' participants) so this variable will not be considered further.

SAILS was administered in a proctored setting in the electronics lab at the library by Anabel Perez and/or her students. Future administrations should be planned well in advance.

SAILS is graded using item response theory, specifically the one-parameter Rasch model. This calculates scores based on a combination of item difficulty and student performance. The process begins with merging data from all institutions into a benchmark file. Student responses to the items on the test are then used to determine the difficulty level of each item. Once that determination is made, student responses are analyzed to determine an average score for each group (or cohort). Scores in the report are placed on a scale that ranges from 0 to 1000. For the Analysis 1, then, we can only make relative judgments of our students compared with the students at other universities. Another way to think about this is that we do not have a control group (say, college professors) that could show how well students *could* perform on this test. Analysis 2, just received, does include raw scores by item. A control group of completely information-literate individuals is still missing, though.

Our 823 UConn students are compared with students at other doctorate (D) institutions who have administered the test (these include both upper-tier universities (e.g., Michigan and Rutgers) and lower-tier universities (e.g., Jackson State University and Marshall University)).

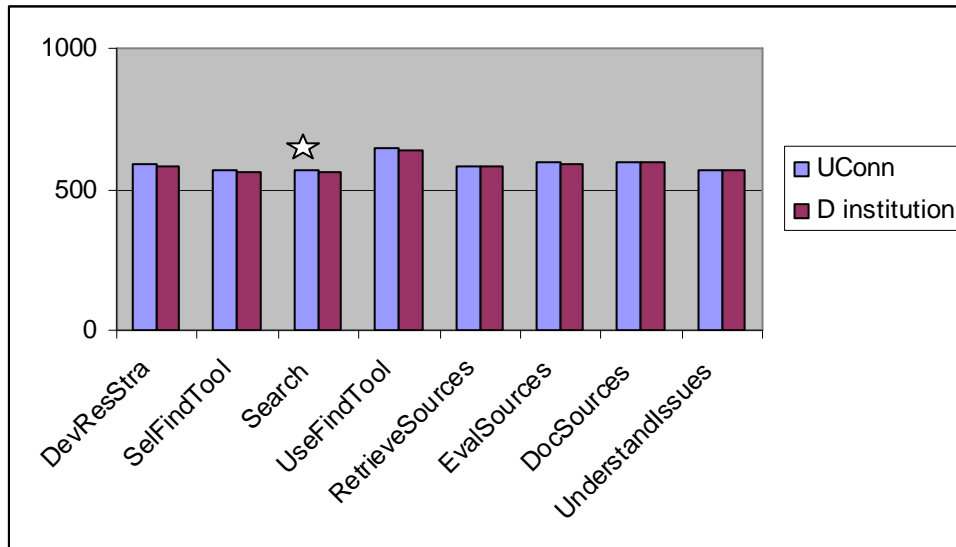
### C. The SAILS Administration Analysis 1: Findings

The mean scores and standard error are presented for each skill set and ACRL standard. Only statistically reliable differences (between UConn and other D institutions, within the UConn sample) are reported.

<b>Skill Set</b>	<b>UConn score</b>	<b>D institution score</b>
Developing a Research Strategy	M = 587 SE = 6	M = 585 SE = 1
Selecting Finding Tools	M = 566 SE = 9	M = 561 SE = 2
<i>Searching</i>	<i>M = 568</i> <i>SE = 6</i>	<i>M = 558</i> <i>SE = 1</i>
Using Finding Tool Features	M = 645 SE = 10	M = 640 SE = 2
Retrieving Sources	M = 580 SE = 11	M = 581 SE = 2
Evaluating Sources	M = 595 SE = 6	M = 592 SE = 1
Documenting Sources	M = 599 SE = 8	M = 592 SE = 1
Understanding Economic, Legal and Social Issues	M = 565 SE = 7	M = 564 SE = 1

For all of these, UConn students scored well within the range of (and so not significantly different from) the D institutions; for Searching, UConn scored significantly above the mean of the D institutions (see Figure 1)

Figure 1:



The UConn freshman who took the SAILS scored above the mean for D institutions for the following skill sets:

- Selecting Finding Tools (better than students at other D institutions, but not significantly better than sophomores or juniors at UConn)
- Searching (better than students at other D institutions and better than sophomores and juniors at UConn)
- Evaluating Sources (better than students at other D institutions and better than sophomores and juniors at UConn)

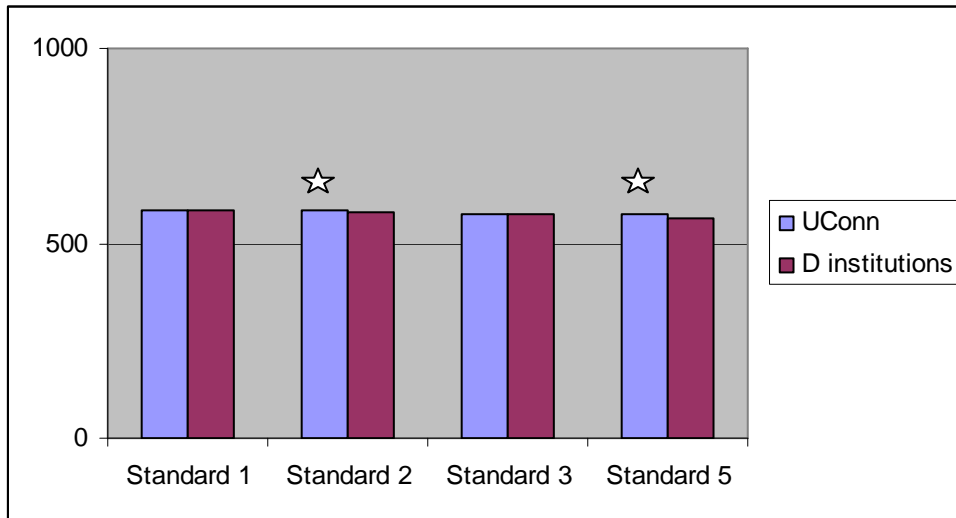
UConn students who self-identified as Engineering/Computer Science and Social Sciences/Psychology majors scored significantly higher than UConn students of other majors on the Searching skill.

<b>ACRL Standard</b>	<b>UConn score</b>	<b>D institution score</b>
Determines the Nature and Extent of Information Needed	M = 586 SE = 6	M = 584 SE = 1
<i>Accesses Needed Information Effectively and Efficiently</i>	M = 584 SE = 5	M = 577 SE = 1
Evaluates Information and its Sources Critically and Incorporates Selected Information into His/Her Knowledge Base and Value System	M = 573 SE = 6	M = 576 SE = 1
<i>Understands Many of the Economic, Legal, and Social Issues Surrounding the Use of Information and Accesses and Uses Information Ethically and Legally</i>	M = 573 SE = 6	M = 566 SE = 1

UConn students performed significantly better than D institutions on Standard 2 (Accesses Needed Information Effectively and Efficiently) and Standard 5 (Understands Many of the Economic, Legal, and Social Issues Surrounding the Use of Information and Accesses and Uses Information Ethically and Legally).

UConn students performed within the range of D institutions on Standard 1 (Determines the Nature and Extent of Information Needed) and Standard 3 (Evaluates Information and its Sources Critically and Incorporates Selected Information into His/Her Knowledge Base and Value System) (see Figure 2)

Figure 2:



#### D. Analysis 2: Scores by Item

We have also been provided with the percent of UConn students who answered correctly for each item in the SAILS. These were organized by Standard, which was subdivided into Performance Indicators, which were further subdivided into Outcomes, which were lastly subdivided into Objectives. On an individual basis, items ranged in percent correct from 9.22 to 98.3. Objectives (composed of 1-9 items) ranged in percent correct from 21.21 to 95.23. For pedagogical purposes, those Objectives which elicited scores lower than 50% correct were deemed to be most in need of perusal; these are listed below.

#### **Items which fewer than 50% of UConn students answered correctly, Fall 2007**

##### **For Standard 1 (5 objectives < 50%)**

*The information literate student determines the nature and extent of the information needed.*

1.1.3.2 Demonstrates when it is appropriate to use a general and subject-specific information source (e.g., to provide an overview, to give ideas on terminology).

1.1.4.3 Narrows a broad topic and broadens a narrow one by modifying the scope or direction of the question.

1.2.1.2 Defines the "invisible college" (e.g., personal contacts, listservs specific to a discipline or subject) and describes its value.

1.2.2.4 Describes how the publication cycle in a particular discipline or subject field affects the researcher's access to information.

1.2.4.1 Distinguishes characteristics of information provided for different audiences.

**For Standard 2 (11 objectives < 50%)**

*The information literate student accesses needed information effectively and efficiently.*

2.1.3.4 Distinguishes among indexes, online databases, and collections of online databases, as well as gateways to different databases and collections.

2.1.3.6 Identifies the differences between freely available Internet search tools and subscription or fee-based databases.

2.2.3.2 Explains what controlled vocabulary is and why it is used.

2.2.4.1 Demonstrates when it is appropriate to search a particular field (e.g., title, author, subject).

2.2.4.2 Demonstrates an understanding of the concept of Boolean logic and constructs a search statement using Boolean operators.

2.2.4.3 Demonstrates an understanding of the concept of proximity searching and constructs a search statement using proximity operators.

2.2.5.3 Narrows or broadens questions and search terms to retrieve the appropriate quantity of information, using search techniques such as Boolean logic, limiting, and field searching.

2.3.1.1 Describes some materials that are not available online or in digitized formats and must be accessed in print or other formats (e.g., microform, video, audio).

2.3.1.3 Recognizes the format of an information source (e.g., book, chapter in a book, periodical article) from its citation.

2.3.2.1 Uses call number systems effectively (e.g., demonstrates how a call number assists in locating the corresponding item in the library).

2.3.3.4 Initiates an interlibrary loan request by filling out and submitting a form either online or in person.

**For Standard 3 (2 objectives <50%)**

*The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.*

3.2.1.8 Demonstrates an understanding that other sources may provide additional information to either confirm or question point of view or bias.

3.7.3.1 Examines footnotes and bibliographies from retrieved items to locate additional sources.

**For Standard 5 (5 objectives <50%)**

*The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.*

- 5.1.3 Identifies and discusses issues related to censorship and freedom of speech
- 5.1.4 Demonstrates an understanding of intellectual property, copyright, and fair use of copyrighted material
- 5.2.7 Demonstrates an understanding of institutional policies related to human subjects research
- 5.3.1.5 Describes when the format of the source cited may dictate a certain citation style.
- 5.3.1.8 Recognizes that consistency of citation format is important, especially if a course instructor has not required a particular style.

As this list shows, 5 Objectives under Standard 1 elicited scores lower than 50%, as did 11 Objectives under Standard 2, 2 Objectives under Standard 3, and 5 Objectives under Standard 5. We suggest that this list be given to the instructors and library liaisons involved in the Freshman English courses, so that they may use them to plan future instruction.

### E. Summary

These findings indicate that SAILS evaluation outcomes of UConn students who enrolled in English 110/111 are generally comparable to—and in some cases ahead of—their peers at other institutions. Some items elicited very low scores (few UConn students answered correctly) whereas others elicited very high scores; we suggest that those items eliciting low scores be used as a basis for future instruction at the basic IL level.

We hope to administer the SAILS test again in Fall 2010, when the freshman who took the test in Fall 2007 will be seniors to do some Time1-Time2 comparisons (between subjects only, as SAILS does not provide ways to identify individuals when they take the test). These comparisons may be the most revealing on the item/Objective level rather than on the composite level. (because composite scores from the next administration will be adjusted to account for the relative difficulty of items experienced by those students—which may be different from that experienced by the current students). We also suggest that future administrations of the SAILS be threefold in nature: Time 1 upon entry to UConn, Time 2 after taking Freshman English (i.e., at the end of freshman year), and then Time 3 during senior year.