Date: October 19, 2001
To: IPFW Senate Library Subcommittee
From: Pamela Sandstrom, Head of Reference & Information Services, and members of the library's ad hoc Information Literacy committee: Tiff Adkins, Sue Skelkoff, Larry Griffin, Ken Balthaser
Re: Information Literacy and the Integrated Information Foraging Environment

Background on Information Literacy Issues

The Information Literacy Task Force, in its final report submitted on April 25, 2001 to the IPFW Senate Library Subcommittee, defined the concept of "information literacy" and endorsed the Association of College and Research Libraries' (ACRL) "Information Literacy Competency Standards for Higher Education: Standards, Performance Indicators, and Outcomes." The report also outlined eight "Core Information Competencies" (Huge 2000) as the basis for a proposed faculty-librarian partnership, establishing specific information literacy goals for the IPFW community. This memo presents an instructional model for teaching information literacy alongside plans for teaching computer literacy.

Computer literacy (defined as information-technology skills) is an issue on which the General Education Subcommittee sought input a year ago through a survey of IPFW academic units. The January 31, 2001 report and recommendations for a computer literacy requirement (see attached Senate Reference No. 00-13) concluded that "[i]n general, departments/programs prefer that computer literacy skills be integrated into required courses, so that the requirement can be met without adding hours to the GE [general education] requirement." The report listed the existing required courses within the academic units that will teach and assess computer literacy/information-technology skills.

The proposed model for teaching information literacy (defined as skills and concepts that enable a person to recognize an information need and locate, evaluate, ethically use, create, and effectively present information) likewise recommends that basic information skills and concepts be integrated within existing required courses. Competing models for information literacy instruction include stand-alone courses, online guides or interactive tutorials, library skills workbooks, and course related- or fully course-integrated instruction (Spitzer, Eisenberg, and Lowe 1998:181-205). Academic librarians typically employ a combination of these methods when they collaborate with the teaching faculty to offer in-class library or bibliographic instruction sessions.

At many universities, library instruction programs are now much more encompassing, and they are usually called "information literacy instruction" to reflect this broader scope. Establishing empirical standards or competencies that an information-literate university student must demonstrate through a variety of assessment measures requires the close collaboration of librarians and faculty. The approach generally calls for librarians to develop programs and services that prepare the faculty to integrate information skills
and concepts into their own courses (Spitzer, Eisenberg, and Lowe 1998:187; Smith 1997). It is this "trainer-the-trainer" strategy, achieved through librarian-faculty information literacy partnerships in required survey, research, and writing courses, that we recommend for IPFW.

The librarians at Helmke Library have taken steps to highlight the importance of information literacy on campus by formulating an academic support system that we call the "Integrated Information Foraging Environment." IIFE, for short, is a coincidently apt acronym that underscores the uncertainties that expert and novice information seekers alike encounter as they make decisions about searching for and handling information in today's complex electronic environment. We would like to outline some of the salient features of IIFE as an instructional model, and show how its components relate to the proposed information literacy competencies.

**Information Literacy in the Framework of the IIFE Instructional Model**

Under grants awarded in 2000 by the Center for the Enhancement of Learning and Technology (CELT) and the Distance Education Coordinating Committee (DECCO), Helmke Library staff have worked to develop an academic support system that takes the form of a coherent Web site and a systematic set of library guides and other tools. These components aid not only library staff working with library users one-on-one, but also the teaching faculty who seek to design effective library assignments, and the students who are undertaking library research under their instructors' guidance. The focus of the library's academic support system is on the information needs of beginning students — novice library users.

Beginning students typically encounter complex databases and information systems for the first time when they come to the university. They find themselves easily disoriented not only because of their lack of knowledge about how scholarly or technical information is created, organized, and used, but also because interface designs and functionality change so often.

The teaching faculty are also challenged in keeping up with information retrieval developments within their core areas of expertise as well as cognate research areas. Even skilled reference librarians are hard pressed to match the information needs of different library users with the capabilities of vast information discovery and delivery systems on hand at IPFW.

To address some of these problems and take a leadership role in establishing an awareness of information literacy at IPFW, the library staff completed some major tasks during 2000-2001 to implement the IIFE instructional model. These accomplishments to date include:

1. transformed the library's self-guided tour to include both walking and virtual tour options, and created a series of 15-question, dynamically generated quizzes that, on successful completion of the quiz, produce a personalized library user certificate that students may print and turn in to their instructor;

2. standardized the layout and production of course-related library guides associated with in-class library instruction (using dynamic html Web technology to facilitate updating of standardized sections and support customization);

3. produced and keeping up to date a set of Guides-at-a-Glance that explain, in a consistent format, the basic search features and strategies for using the library's key licensed databases;
developed a prototype for subject or academic discipline-oriented pathfinders that promote awareness of a selection of "best" library resources in the area (to be integrated with general-use library guides treating critical-thinking processes that are fundamental to information literacy);

created prominent mail-to links from all library Web pages, all descriptions of databases and indexes, and all Helmke Library guides, improving e-mail contact with librarian-liaisons and support distance-learning initiatives; and

designed and implemented a proxy server authentication process to provide IPFW faculty, staff, and students with off-campus access to the library's licensed databases (May 2001).

Information Literacy in Existing Required Courses through a Librarian-Faculty Partnership

Given the progress that Helmke Library staff have made to support the academic success and achievement of students at IPFW, we propose that the teaching faculty endorse the principles and specific competencies of information literacy. Information literacy should be integrated into required courses by targeting those core courses taken by large numbers of beginning students. Mastery of many skills and concepts (see "Information Literacy Competencies" below) should be demonstrated by the time a student chooses a major field of study and enrolls in upper-level courses.

The proposed librarian-faculty information literacy partnership works at two levels:

Level 1 is a train-the-trainer program aimed at faculty teaching beginning students. The instructors of sections of required English composition (ENG W131) and communication (COM 114) courses, who are often associate faculty or graduate students themselves, should be certified through workshop attendance and partnering with a librarian to impart basic information literacy skills and concepts to their students, and to understand the features and functionality of the library's key information systems. Instructors are expected to assign, and students at this level are expected to have taken and passed preliminary, self-paced components developed by librarians (including the library tour and quiz, and interactive tutorials on how to find books and articles). Librarians will provide tools for instructors to design effective library assignments and to teach the critical-thinking processes that underlie library research (supported by a number of general library-use guides). Library course-related guides support the train-the-trainer program, allowing instructors to perform as information literacy experts.

Level 2 is an in-class instruction program aimed at students taking advanced courses. Librarians collaborate with the course instructor to present instruction in person and develop effective assessment tools (quizzes, assignments, etc.) to measure students' ability to use specialized information systems and awareness of a range of appropriate library materials. Students are expected to have already mastered basic information literacy skills and concepts in lower-level required courses (if needed, taking the tour and tutorials again to update knowledge). Library course-related guides also support the in-class instruction program. These guides can also be designed for presentation by the teaching faculty alone, if desired, after review and updating by librarians.

The General Education Committee identified the following courses fulfilling computer literacy requirements. These same courses are suitable for Level 1 (train-the-trainer) librarian-faculty partnerships:
COM 114
ENG W131
CS courses, e.g., CS 106
EDUC W200
ETCS 101
EET 114
EET/CPET 355
BUS K200-level courses
OLS 280
SPEA K300

In addition, courses fulfilling the Gen Ed "English Writing" requirement as listed in the Undergraduate Bulletin 2000-2002 should be also included as targets for Level 1 partnerships (train-the-trainer program) or possibly Level 2 (in-class instruction), depending on enrollments:

ENG W233
ENG L202
FREN W300
GER W300
HIST H217
POLY Y205
SOC S260
SPAN W300

**Information Literacy and Computer Literacy**

In addition to developing the proposed librarian-faculty information literacy partnership, coordination with IT Services will also provide support for students' computer literacy/information-technology skills. At minimum, we plan to create a network of links between the library's IIFE components and IT Services' Student Technology Education Programs (STEPS) curriculum, or the many "Getting Started" guides available in labs and online. Examples of computer literacy skills already addressed by ITS short courses include:

<table>
<thead>
<tr>
<th>Competency:</th>
<th>Support:</th>
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<tbody>
<tr>
<td>Collaborating with e-mail and attachments</td>
<td>Student E-mail using DMail at IPFW</td>
</tr>
<tr>
<td>Giving presentations</td>
<td>Creating Presentations with Microsoft PowerPoint</td>
</tr>
<tr>
<td>Writing Web pages</td>
<td>Create a Web Page Using HTML: The Basics</td>
</tr>
<tr>
<td>Using Web browsers</td>
<td>Using Technology for Research</td>
</tr>
<tr>
<td>Creating bibliographies</td>
<td>EndNote Version 4.0</td>
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Fruitful areas for collaboration between ITS and the library would include expanding STEPS course content to include material on the last two competencies: evaluating Web sites and developing effective Web search strategies, and integrating the use of bibliographic software to skills for locating, retrieving, and evaluating information.

**Conclusions**

This memo has outlined an argument for supporting information literacy at IPFW, and has identified opportunities to create formal librarian-faculty information literacy partnerships to achieve this
goal. The next two sections provide a schematic overview of the structure of the library's Web site and components of the IIFE model, and take a more detailed look at how these components support specific information literacy competencies.

The university's stated goal to support student academic success and achievement can be accomplished in many ways. Including information literacy requirements in the undergraduate curriculum is one important step in that direction. As librarians, we are acutely aware of the need for citizens to be educated in the critical, effective, and ethical use of information, and to understand the basics of information retrieval issues using traditional printed media and digital technologies. I hope our argument is convincing that information literacy speaks to much larger educational issues than learning computer or information-technology skills. We strongly urge the IPFW Senate Library Subcommittee to support this campus-wide initiative and in particular, to support Helmke Library in procuring resources to fulfill its mission regarding information literacy.

References Cited


Attachments

April 25, 2001, memo from Information Literacy Task force (David May, chair) to IPFW Senate Library Subcommittee

IPFW Senate Reference No. 00-13
Components of Helmke Library's Integrated Information Foraging Environment (IIFE)

Note: Components in the planning stage are in italics. Enumerated competencies are detailed below in "Information Literacy Competencies Supported by Helmke Library's IIFE Instructional Model."

Helmke Library Web site

Integrated Information Foraging Environment (IIFE)

Reference & Information Services:
  Appointments with librarians for one-on-one instruction
    Competencies 1, 2, 3, 4, 5, 6, 7, 8

Library-Faculty Information Literacy Partnership:
  Train-the-trainer program for faculty teaching beginning students
  In-class instruction program for students taking advanced courses
    Competencies 1, 2, 3, 4, 5, 6, 7, 8

Document Delivery Services
  Competencies 2b, 4a, 4d, 7a

ReservesEXpress
  Competencies 2a, 4b, 7c

Library Tour, Quiz, & Certification
  Competencies 2, 3a, 3b, 4c, 4d

Databases & Indexes:
  On- and off-campus access
    Competencies 2, 3, 4, 5

Course-related Guides
  Competencies 1, 2, 3, 4, 5, 6a, 7b, 7c, 8

Database Guides-at-a-Glance
  Competencies 2c, 3, 4

Subject Pathfinders
  Competencies 1a, 1d, 2a, 2c, 3b, 4d, 5a, 5b, 6d, 8

General Library-use Guides:
  Designing Effective Library Assignments
    Competencies 1-4

  Doing Library Research
    Competencies 1-4

  How to Find Books Interactive Tutorial
    Competencies 2, 3, 4, 5, 6a, 8d
How to Find Articles Interactive Tutorial
  Competencies 2, 3, 4, 5, 6a, 8d

Copyright Information
  Competencies 2, 7

Style Guides
  Competencies 4, 6d, 8a, 8c

Plagiarism
  Competencies 7b, 7c

Starting Off to Explore:
  Search strategy, Boolean logic, truncation
  Concept mapping
    Competencies 1, 2, 3

Judging Sources:
  Is your article scholarly or popular?
  Is your Web site credible?
  Evaluation criteria and tools
    Competencies 2, 4, 5

Getting Mired and Avoiding Overload:
  Narrowing focus, delimiting options
    Competencies 1d, 2b, 2c, 3d, 5, 6a

Reflecting on the Search Process:
  Note taking & record keeping
  Iteration & closure
    Competencies 2, 3, 5, 6

Crossing Boundaries:
  Syndetic structure
  Using subject headings
  Library of Congress Classification
    Competencies 3, 4d, 8c, 8d
Information Literacy Competencies (*) Supported by Helmke Library's IIFE Instructional Model

(*) Reproduced and adapted with permission from "Core Information Competencies," Ohio University Libraries (Huge 2000).

Competency:
1. Define and articulate an information need by:
   a. recognizing the need to know more information than is already known;
   b. stating a research need, problem, or issue;
   c. formulating appropriate and relevant research questions;
   d. defining a manageable focus and time-line.

Support:
- Reference & Information Services: Appointments with librarians for one-on-one instruction
- Library-Faculty Information Literacy Partnership: Train-the-trainer program for faculty teaching beginning students; In-class instruction program for students taking advanced courses
- Course-related Guides
- Subject Pathfinders
- Designing Effective Library Assignments
- Doing Library Research
- Starting Off to Explore
- Getting Mired and Avoiding Overload

Competency:
2. Identify and select appropriate information sources by:
   a. understanding the variety of information formats;
   b. considering the costs and benefits of acquiring needed information;
   c. selecting the appropriate resources for searching and understanding their limitations.

Support:
- Reference & Information Services: Appointments with librarians for one-on-one instruction
- Library-Faculty Information Literacy Partnership: Train-the-trainer program for faculty teaching beginning students; In-class instruction program for students taking advanced courses
- Document Delivery Services
- ReservesEXpress
- Library Tour, Quiz, & Certification
- Databases & Indexes: On- and off-campus access
- Course-related Guides
- Database Guides-at-a-Glance
- Subject Pathfinders
- Designing Effective Library Assignments
- Doing Library Research
- How to Find Books Interactive Tutorial
- How to Find Articles Interactive Tutorial
- Copyright Information
- Starting Off to Explore
- Judging Sources
- Getting Mired and Avoiding Overload
Reflecting on the Search Process

Competency:

3. **Develop and use search strategies** by:
   a. understanding the structure of information-finding tools;
   b. identifying common access points of information sources;
   c. identifying and using appropriate search techniques;
   d. being able to refine a search as needed.

Support:
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Databases & Indexes: On- and off-campus access
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*How to Find Articles Interactive Tutorial*
Starting Off to Explore
*Getting Mired and Avoiding Overload*
*Reflecting on the Search Process*
*Crossing Boundaries*

Competency:

4. **Locate and retrieve relevant information** by:
   a. recognizing the components of a citation and differentiating among types of resources;
   b. using appropriate components of a citation to locate the original source;
   c. understanding the conventions for naming and locating works in print and electronic formats;
   d. being able to locate and retrieve both local and external sources of information.

Support:
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Competency:
5. Evaluate the information retrieved by:
   a. distinguishing between popular and scholarly sources;
   b. assessing the currency, authority, and reliability of the information retrieved;
   c. evaluating an author's expertise, authority, and credibility;
   d. recognizing an author's point of view (prejudices, loyalties, etc.).

Support:
Reference & Information Services: Appointments with librarians for one-on-one instruction
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Competency:
6. Organize and synthesize information effectively by:
   a. filtering large amounts of information and distinguishing among facts, points of view and opinion;
   b. extracting relevant information;
   c. organizing information in a logical and useful manner;
   d. communicating the final product effectively, in formats appropriate to the intended audience;
   e. incorporating the newly organized and synthesized information into one knowledge base;
   f. recognizing that existing information can be combined with original thought, experimentation,
      and/or analysis to produce new information.

Support:
Reference and Information Services (appointments with librarians for one-on-one instruction)
Library-Faculty Information Literacy Partnership: Train-the-trainer program for faculty teaching
   beginning students; In-class instruction program for students taking advanced courses
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**Competency:**

7. **Recognize the economic, legal, social and ethical issues of access to and use of information** by:
   a. recognizing that access to information can be constrained by both political and economic factors;
   b. citing and acknowledging sources appropriately;
   c. understanding the principles of intellectual property, copyright, and plagiarism, and acting ethically in light of them.

**Support:**
Reference and Information Services (appointments with librarians for one-on-one instruction)
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**Competency:**

8. **Recognize the unique characteristics of the body of knowledge within a specific discipline** by:
   a. distinguishing among primary, secondary, and tertiary sources and their use;
   b. understanding the relationship between currency and relevance;
   c. analyzing and comprehending the organization and structure of the literature in a particular discipline;
   d. being able to transfer skills from familiar resources to unfamiliar ones.

**Support:**
Reference and Information Services (appointments with librarians for one-on-one instruction)
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