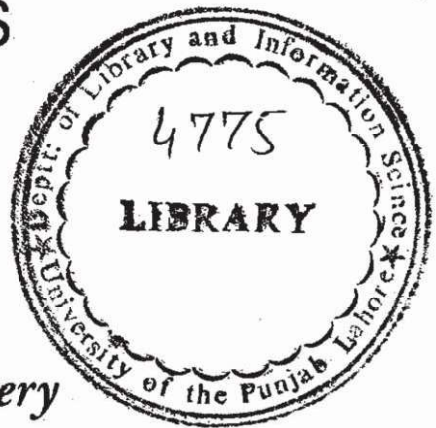


502. \$ 31.95

# Assessing Student Learning Outcomes for Information Literacy Instruction in Academic Institutions

*edited by*  
*Elizabeth Fuseler Avery*



Association of College and Research Libraries  
A Division of the American Library Association  
Chicago 2003

The paper used in this publication meets the minimum requirements of American National Standard for Information Sciences-Permanence of Paper for Printed Library Materials, ANSI Z39.48-1992.

Library of Congress Cataloging-in-Publication Data  
Assessing student learning outcomes for information literacy instruction  
in academic institutions / edited by Elizabeth Fuseler Avery.

p. cm.

Includes bibliographical references.

ISBN 0-8389-8261-1 (alk. paper)

1. Information literacy—Study and teaching (Higher)—Evaluation. 2.  
Information literacy—Ability testing. I. Avery, Elizabeth Fuseler.

ZA3075.A85 2003

028.7'071'173—dc22

2003021498

Copyright © 2003 by the American Library Association. Portions of this publication may be photocopied for the noncommercial purpose of scientific or educational advancement granted by Sections 107 and 108 of the Copyright Revision Act of 1976.

Printed on recycled paper.

Printed in the United States of America.

07 06

5 4 3

**Table 3-1. Instructional Settings With Instruments/Methods for Assessing Information Literacy Outcomes**

Learning Domain	Sample Learning Outcomes	Gen. Educ.	Major/Program	Credit course in Info. Lit.	Course-Related/Integrated	Stand-alone (workshops; online tutorial)
Cognitive	Identifies key concepts and terms that represent the information need or research topic question.	*1. items on standardized or local tests for general education * 2. online tutorial quiz *3. comprehensive IL exam	*1. items on standardized or local tests for major *2. online tutorial quiz *3. comprehensive IL exam	*1. tests/quizzes 2. embedded course assignments 3. portfolio analysis of coursework 4. CATs**	*1. tests/quizzes 2. embedded course assignments 3. portfolio analysis of research products/assign. quiz *4. online tutorial 5. CATs**	1. workshop exercise *2. online tutorial quiz 3. CATs**
What do students know?	Knows how information is formally and informally produced, organized, and disseminated. Demonstrates an understanding that date or sponsor/publisher of the information may affect its value.	4. items on alumni or graduate surveys of IL skills	4. capstone course exam component; 5. senior exit exam or essay 6. portfolio analysis of research products			

Table 3-1. Instructional Settings With Instruments/Methods for Assessing Information Literacy Outcomes (cont.)

Learning Domain	Sample Learning Outcomes	Gen. Educ.	Major/Program	Credit course in Info. Lit.	Course-Related/Integrated	Stand-alone (workshops; online tutorial)
Behavioral (performance-based)	Constructs and implements the search strategy using appropriate search features/commands for the inform. retrieval system selected.	1. portfolio analysis of research products/tasks in GE courses *2. performance items on standardized or local tests *3. comprehensive IL exam *4. tutorial quiz	1. portfolio analysis of research products or tasks in major 2. capstone performance/product 3. senior exit essay *4. performance items on standardized or local tests *5. tutorial quiz 6. items on alumni/graduate surveys of IL performance	1. portfolio analysis of coursework 2. embedded course assignments *3. performance-based tests/projects 4. online monitoring 5. direct observation checklist 6. CATs**	1. portfolio analysis of research products/assignments 2. embedded course assignments *3. performance-based tests/projects *4. online tutorial quiz 5. direct observation checklist 6. CATs**	1. workshop exercise *2. online tutorial quiz 3. direct observation checklist 4. CATs**
What can students do?	Uses various technologies to manage the information selected and organized.  Selects information that provides evidence for the topic.					

Table 3-1. Instructional Settings With Instruments/Methods for Assessing Information Literacy Outcomes (cont.)

Learning Domain	Sample Learning Outcomes	Gen. Educ.	Major/Program	Credit course in Info. Lit.	Course-Related/Integrated	Stand-alone (workshops; online tutorial)
Affective	Revises the development process for the product or performance by reflecting on past successes, failures, and alternative strategies.	*1. learner self-rating of IL skills via questionnaire, interviews, focus groups 2. employer surveys of IL performance 3. alumni/graduate follow-up surveys	*1. learner self-rating of IL skills via questionnaire, interviews, focus groups *2. survey of instructor rating of student performance 3. employer surveys of IL performance 4. alumni/graduate follow-up surveys	*1. learner self-rating of IL skills via questionnaire, interviews, focus groups 2. research diary/journal or reflective papers *3. survey of instructor rating of student performance	*1. learner self-rating of IL skills via questionnaire, interviews, focus groups 2. research diary/journal or reflective papers *3. survey of instructor rating of student performance	*1. learner self-rating of IL skills via questionnaire, interviews, focus groups *2. survey of instructor rating of student performance
How do students perceive their abilities?						
What do they value?	Values the variety of information resources and investigative methods, including the librarian and other experts.					

\* optional to administer pre and post to compare performance. The use of a control group and effective research design strengthen the findings.

\*\* CATs are classroom assessment techniques, such as the "one-minute paper," "the muddiest point," "the one-sentence summary," "what's the principle," etc. (See Thomas A. Angelo and Patricia Cross, *Classroom Assessment Techniques: A Handbook for College Teachers*, 2<sup>nd</sup>. San Francisco: Jossey-Bass, 1993).

Assessing student learning is extremely difficult because learning is complex and multidimensional. It is virtually impossible to assess what a learner can do or knows and feels about what he or she knows by a single instrument or method. Therefore, the use of multiple instruments/methods is recommended to try and capture learning from different dimensions—cognitive, behavioral, and affective—and when the purpose merits, to plan research designs that will compare groups of learners across time. Moreover, although not the focus of this book, a true picture of student learning tries to assess the quality of the “experiences that lead to the outcomes.” These are the features of the learning opportunities, the extent of penetration of IL assignments across the curriculum, and teaching methods and materials that comprise IL instructional programs.

Maintaining a holistic view of the teaching–learning dynamic in outcomes assessment is especially important for several reasons: first, higher education regional accreditation agencies expect institutions to capture and describe findings that reflect the feedback loop of teaching, instructional support, and cocurricular “inputs” in relation to learning outcomes and resulting improvements made; and second, the choice of an assessment tool is connected to the institutional learning environment and its assessment values and practices. For example, in those institutions, such as Alverno College, that have made assessment part of their organizational culture, librarians would benefit from working within the parameters of local assessment values and practices. Some examples might include scheduling to be part of a collegewide assessment week or day, being part of program portfolio assessment, or using standardized testing. Furthermore, in those institutions where IL has truly become integrated across the curriculum, the library is one among several stakeholders with the institutional responsibility to ensure that IL goals are clearly defined and that the various IL elements scattered across the curriculum are identified and assessed as part of a coherent whole. At this time, the author is aware of only one regional accreditation agency, the Middle States Commission on Higher Education, that has finalized a guidelines document, *Developing Research & Communication Skills: Guidelines for Information Literacy in the Curriculum*, for implementing and assessing information literacy throughout the curriculum.<sup>2</sup>

A few comments relating to table 3-1 are needed. First, the author defines “instruments” broadly to include any learning activity, product, performance, or presentation that can be evaluated to produce a measurable score or grade or provide qualitative information to the learner and/or instructor about learning outcomes. Primarily, the instruments and assessment methods included in the table produce scores or grades that might be used—for example, to compare pre- and postperformance and/or experimental to control group performance or comparisons within a class or group. Many of these instruments—particularly course-embedded assignments, a generic category that includes such products as research papers/projects, annotated bibliographies/Webliographies, research process essays,

information task analyses—require a corresponding scoring “tool” to assess performance, such as a rubric, scoring checklist, bibliography rating sheet, observation checklist, and so on. However, classroom assessment techniques (CATS) also are included in the columns for courses and workshops. These formative assessment methods are well known to discipline-based faculty and are taken mostly from the Angelo–Cross book, *Classroom Assessment Techniques: A Handbook for College Teachers*. CATS include activities such as the one-minute paper, the muddiest point, and what is the principle, and are used to clarify for the learner and the instructor what is or is not understood within a course period(s); thus, no score or grade would be generated.

Second, one could organize such a chart in many ways, for example, by learning outcomes. Table 3-1, however, attempts to address a variety of institutional sizes, values, and approaches to teaching information literacy and arranges instruments/methods by institutional programs (i.e., general education and major/program), credit course in information literacy, course-related and course-integrated settings, and stand-alone settings (e.g., drop-in workshops, online tutorial, or other self-paced, independent learning opportunities). The table also includes both summative (e.g., comprehensive IL exam, capstone exam/essay) and formative types of assessments (e.g., workshop exercise, course-embedded assignments) with group/class, individual, or cohorts as the locus of assessment. One can observe from table 3-1 that the instructional setting and learner population, such as assessing all first-year students in several sections of a general education course versus assessing a course-integrated learning experience with one group of students, will partially determine the type of assessment instrument. Tests or questionnaires are much easier to use with large groups of students; whereas, course-embedded performance-based assignments are much more typical of course settings.

Table 3-1 includes instruments that yield both direct and indirect evidence. There are other sources of outcomes, not represented on the chart, for obtaining indirect evidence. The following indirect measures, from Peggy Maki’s excellent online article, “Using Multiple Assessment Methods to Explore Student Learning,” is offered to supplement the chart:

- A) “percentage of students who go on to graduate school, providing evidence of how well an institution prepared students for advanced work;
- B) retention and transfer studies, providing evidence of institutional success;
- C) job placement statistics, providing evidence of how well an institution has prepared students for entry into the workplace.”<sup>3</sup>

Assessment of learning outcomes should always strive to use instruments and methods that yield data to provide both types of evidence reflecting the three learning domains. A limitation of table 3-1, however, is that it may appear to suggest that these instruments produce evidence for only a single type of learning domain. This is not always the case. In fact, the reader will notice that certain

instruments (e.g., portfolio analysis, embedded assignments, tests) are listed for two learning domains. Clearly, many performance-based instruments yield quantitative and qualitative data, often both direct and indirect evidence, that address both behavioral and cognitive learning outcomes. Likewise, quizzes and tests can include performance-based items in addition to cognitive items.

## Assessing Knowledge/Conceptual Understanding

### Tests

Currently, there is no standardized information literacy test, although Project SAILS has one under development.<sup>4</sup> Some state teacher certification examinations, professional association certification, and discipline-specific standardized tests include items that address some IL learning outcomes. Indeed, librarians can and do advocate for the inclusion of IL items in locally developed tests used at the institutional or academic and vocational program level. Although tests are often easier to administer and score, unless performance-based items are included, they measure only what students know. Table 3-2 summarizes some of the advantages and disadvantages of standardized versus locally developed tests.<sup>5</sup>

There are many examples of locally developed multiple-choice and short-answer IL online and paper-copy tests in use. The UCLA Information Competence Survey is a good example of a locally developed cognitive test and survey that was field-tested with several samples and used as part of a research study.<sup>6</sup>

**Table 3-2. Standardized vs. Locally-Developed Tests**

	Advantages	Disadvantages
Standardized tests	<ol style="list-style-type: none"> <li>1. normative data from other institutions is available</li> <li>2. easy to administer</li> <li>3. validity and reliability established</li> </ol>	<ol style="list-style-type: none"> <li>1. contents may not reflect local intended student learning outcomes</li> <li>2. normative comparisons may be inappropriate</li> <li>3. expensive to purchase and score.</li> </ol>
Locally-developed tests	<ol style="list-style-type: none"> <li>1. content can be tailored to match intended student outcomes</li> <li>2. detailed analysis possible to accomplish</li> <li>3. more likely faculty will use results</li> <li>4. amenable to a variety of formats</li> <li>5. faculty "ownership" assured</li> </ol>	<ol style="list-style-type: none"> <li>1. commitment of great amounts of faculty time to develop, score and maintain.</li> <li>2. lack of normative data for comparison</li> <li>3. little external credibility for accountability purposes</li> <li>4. often an absence of validity and reliability research</li> </ol>

Source: Nichols, James O. *Practitioner's Handbook for Institutional Effectiveness and Student Outcomes Assessment Implementation*, 3<sup>rd</sup> ed. New York: Agathon, 1995.



Nearly half of the projects included in this volume used a locally developed test/questionnaire or a combination self-assessment questionnaire and test. A particularly interesting project is the Austin Peay State University project, which used six assessment instruments that included a pre- and postquestionnaire/test. The project employed a quasi-experimental design within three different instructional settings (i.e., none, active learning, and lecture). Complementing the cognitive assessment is a performance-based Web site evaluation assignment and a self- and peer assessment questionnaire with items that assess the learner's perceptions of his or her IL instruction. Indeed, when testing is used to try and prove that IL instruction causes an improvement in scores, careful attention is required to the research design, sampling, and other features of experimental research. Other examples have used a combination of cognitive and performance-based tests. One project described in this book is the Bay Area Community Colleges Information Competency Assessment Project. This two-year-plus project involved a collaboration of six California community college librarians to develop and administer two field tests of a two-part challenge out exam that can be used at community colleges that have an IL graduation requirement or adapted for other assessment purposes. It is composed of a forty-six item cognitive test and a fourteen-item performance-based activity. In addition to the information provided in this volume, the reader can obtain more information about its development at the project Web site and in an upcoming Jossey-Bass publication.<sup>7</sup>

Three other well-known examples connected to IL requirements are the Information Literacy Competency Exam used at Weber State University, which combines twenty-five multiple-choice questions with approximately twelve performance-based items;<sup>8</sup> the Web-based tutorial "Go for the Gold" with its Information-seeking Skills Test used at James Madison University for its general education IL requirement;<sup>9</sup> and the Web-based tutorial with quizzes, OASIS: Online Advancement of Student Information Skills, used at CSU-San Francisco State University.<sup>10</sup> The ACRL Information Literacy Assessment Issues Web page has links to many other examples of tests and tutorials employing quizzes that test the cognitive dimension of IL skills.<sup>11</sup>

Test developers must pay close attention to the design and wording of multiple-choice and other item formats commonly used on locally developed objective tests. A very concise and useful source can be found in the chapter, "Using Multiple Choice and Other Objective Measures," in *Natural Classroom Assessment* by Smith, Smith and De Lisi listed in the Selected Sources at the end of this chapter.

### *Performance-based Instruments and Methods*

A growing number of colleges and universities are using performance-based instruments to assess specific IL skills in a variety of instructional settings, but particularly in course-related and integrated settings. There is almost no limit to the

variety of performance-based instruments, largely because of the many course-embedded assignments developed by faculty and collaborating librarians, such as speeches, presentations, research papers/projects, annotated bibliographies/Webliographies, and research essays/journals that describe the process of doing research, and direct observation with behavior checklists or online monitoring of performance on specific tasks. Slightly more than half of the assessment projects showcased in this book are performance based and use scoring rubrics to evaluate and quantify the performance. Authentic assessments are nearly always some type of performance-based task or project that simulates a real-world information retrieval, evaluation, and/or communication activity. As previously noted, quizzes and tests can be designed to include both cognitive and performance-based items, especially those administered online. A couple of larger institutional or systemwide IL assessment projects using an analysis of student work/products, information scenarios, or information-seeking and evaluating tasks include:

- Washington Assessment of Information and Technology Literacy Project, a consortium of six higher education institutions in the state of Washington that has been working in this area for several years and has based its work on the following assumptions: “that student ability to access and use information is a complex task best observed in samples of student work; work products should be supplemented by some type of student reflection to provide a more complete picture of the process used; and because information is stored and used somewhat differently within various subject areas, assessment of information and technology literacy should take place within the academic discipline.”<sup>12</sup>

- California State University (CSU) Information Competence Initiative, along-standing and impressive systemwide initiative dating back to 1995 that has spawned a variety of instructional products and assessment instruments, such as Web-based tutorials with quizzes, curriculum integration projects with course-embedded assignments, summer faculty development workshops to reshape curricular offerings, outreach effort to high schools and community colleges through teacher–librarian collaboration, support for a campus online information competence graduation requirement, and the creation of various information competence courses and programs at the undergraduate and graduate levels.<sup>13</sup>

A major initiative of the Educational Testing Service (ETS), announced in May 2002 on the information literacy page of the ETS Web site (<http://www.ets.org/research/ictliteracy/index.html>), is the proposed development of an information and communication technologies literacy assessment. The report, *Digital Transformation: A Framework for ICT Literacy*, from ETS’s International ICT Literacy Panel, provides a foundation for the design of instruments.<sup>14</sup> The report’s appendixes include examples of sample ICT tasks, which are authentic assessment tasks of practical information seeking assessing multiple learning outcomes.

**Portfolios**

Some academic programs use portfolios, which are a collection of student work across a semester, a year, or several years. They can be used to assess student learning through several assignments in a course or through assignments in several courses required in a program. They also can help a student become more aware of his or her learning process if the student is required to reflect upon and evaluate his or her own learning. In this book, the Millersville University project, "Assessing Abilities of Freshmen to Reconcile New Knowledge with Prior Knowledge," is an example of a portfolio of several drafts of a research essay accompanied by a reflective essay and corresponding rubric. Several of the sources listed about portfolios at the end of this chapter elaborate on the purposes and related portfolio entries depicted in table 3-3.

**Rubrics**

Performance-based instruments that include written, presented, or performed work typically require the development of some type of scoring tool, such as a checklist, a rating scale/sheet, or a scoring rubric to differentiate and quantify performance. In this book, Appalachian State University's project, "Information Literacy Assessment for Introductory Music," illustrates the use of a project checklist, and an example of a rating sheet is the bibliography rating sheet used by the Hunter College project, "Past Lives: An Exercise in Historical Research with an Annotated Bibliography Requirement."

Rubrics are defined by Craig A. Mertler "as scoring guides, consisting of specific pre-established performance criteria, used in evaluating student performances or products resulting from a performance task."<sup>15</sup> The two types of rubrics are holistic and analytic. A holistic rubric is designed to score the overall process or product as a whole, without judging the separate parts. Mertler explains that "holistic rubrics are probably more appropriate when performance tasks require

**Table 3-3. Portfolio Goals and Related Entries**

Goal/Purpose	Entries in Portfolio
To evaluate the achievement of intended learning outcomes.	Best work exemplifying outcomes
To demonstrate the breadth with which learning outcomes have been achieved.	Work representing a range of accomplishments
To illustrate the process associated with achieving a learning outcome.	Multiple drafts or versions that represent a chronology of progress.
To understand one's own learning.	Written reflections about learning.

Source: Huba, Mary E., and Jann E. Freed. *Learner-Centered Assessment on College Campuses*. Boston: Allyn & Bacon, 2000.

Table 3-4. Template for Holistic Rubrics

Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response.
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted.

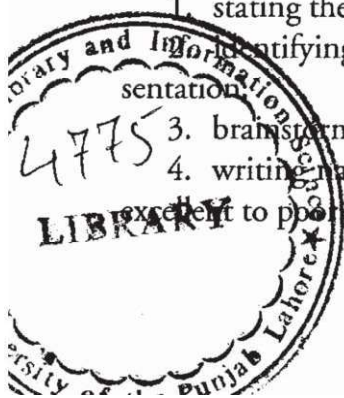
Source: Mertler, Craig A. "Designing Scoring Rubrics for your Classroom." *Practical Assessment, Research & Evaluation*. 7 (25). 2001. <http://ericae.net/pare/getvn.asp?v=7&n=25>.

students to create some sort of response and where there is no definitive correct answer.... and when errors in some part of the process can be tolerated provided the overall quality is high."<sup>16</sup> (See table 3-4.)

Nearly all of the rubrics included in this book's projects are analytic rubrics, as they were designed for scoring individual parts of the product/performance first, then summing the scores to obtain a total score. The only example of a holistic rubric is the one created for the Illinois Wesleyan University assessment project, which was for an ethnographic journal assessment. Mertler explains that "analytic rubrics are usually preferred when a fairly focused type of response is required<sup>14</sup>. for performance tasks in which there may be one or two acceptable responses and creativity is not an essential feature of the students' responses."<sup>17</sup> As the reader has probably noticed, analytic rubrics are more time-consuming to develop and score, but they provide more feedback to the student and the instructor than do holistic rubrics. There are twelve examples of analytic rubrics in this book. One project, the Highline Community College's project, "Using Rubrics to Assess Information Literacy Attainment in a Community College Education Class," provides examples of three rubrics for orally presented and written work.

Developing rubrics requires several steps and decisions about criteria, levels of achievement, and dimensions of quality. The development process includes:

1. stating the specific information literacy learning outcomes;
2. identifying specific observable attributes in the product, process, or presentation;
3. brainstorming characteristics that describe each attribute;
4. writing a narrative description for the levels of performance ranging from excellent to poor work for each attribute;



5. collecting samples of student that illustrate each level;
6. using these samples to evaluate the rubric and make revisions.

Before getting too far into the development of the rubric, these three questions could be useful, as they might suggest the need for an additional assessment instrument, such as some type of instrument to capture student self-reflection, for example, if the process is as important as the outcome.

1. What content must students master in order to complete the task well?
2. Are there any important aspects of the task that are specific to the context in which the assessment is set?
3. Is the process of achieving the outcome as important as the outcome itself?

Table 3-5 lists six essential questions to help structure the development process.

Rubrics typically include several elements (i.e., statement of criterion to be assessed; description of performance levels; scores) illustrated in table 3-6, a template that was adapted from three different rubrics.

In addition to these elements, rubrics might include examples derived from student work to illustrate each of the performance levels and possibly notes on scoring. One of the more challenging tasks is to devise language that clearly distinguishes the meaning of the various performance levels. For example, most scorers would correctly recognize a research topic that has been sufficiently narrowed to be appropriate for a three- to five-page research paper. However, coming up with a description of what characterizes a sufficiently narrow research topic that could be applied across research questions is another matter. The example above tries to delineate aspects of an exemplary research topic. To improve interrater reliability it is especially important to have clear descriptions with examples so that any librarian-scorer would be likely to rate the criterion with the same score.

**Table 3-5. Questions to Ask When Constructing/Revising Rubrics**

1. What criteria or essential elements must be present in the student's work to ensure that it is high in quality?
2. How many levels of achievement (mastery) do you want to illustrate for students?
3. For each criteria or essential element of quality, what is a clear description of performance at each achievement level?
4. What are the consequences of performing at each level of quality?
5. What rating scheme will you use in the rubric?
6. When you use the rubric, what aspects work well and what aspects need improvement?

Source: Huba, Mary E., and Jann E. Freed. *Learner-Centered Assessment on College Campuses*. Boston: Allyn & Bacon, 2000.

**Table 3-6. Template for Analytic Rubrics—Example of Part of a Rubric for a Research Paper**

	Beginning 1	Developing 2	Accomplished 3	Exemplary 4	Score
<b>Criteria #1</b> Research topic	Topic is not narrowed; topic is poorly narrowed.	Topic has been somewhat narrowed but not sufficiently for a 3-5 page paper.	Topic is passably narrowed for a 3-5 page paper	Topic is well narrowed by specifying time frame, or persons, or organization or group, or location, or event or incident, or some combination of these AND is suitable for a 3-5 page paper.	Range= 0-4 pts.
<b>Criteria #2</b> Development of ideas	Minimal idea development, limited and/or unrelated details	Unelaborated idea development; unelaborated and/or repetitious details	Deep idea development supported by elaborated, relevant details	Deep and complex ideas supported by rich, engaging, and pertinent details; evidence of analysis, reflection and insight	Range= 0-4 pts
<b>Criteria #3</b> Grammar and format	Numerous errors in grammar and format (e.g. spelling, punctuation, capitalization)	Several errors in grammar and/or format that do not interfere with communication	Few errors in grammar or format relative to length and complexity	Virtually no errors in grammar or format.	Range= 0-4 pts
<b>Criteria #4</b> Organization	Random or weak organization	Lapses in focus and/or coherence	Logical organization	Careful and/or suitable organization	Range= 0-4 pts
<b>Criteria #5</b> Voice and tone	Limited awareness of audience	An attempt to communicate with the audience	Evidence of voice and/or suitable tone	Evidence of distinguished voice and/or appropriate tones.	Range= 0-4 pts

The reader is directed to the documents in the Selected Sources by Emmons and Martin, Moskal, Mertler, Huba, and the ERIC Clearinghouse on Assessment and Evaluation for more information about developing rubrics. Moreover, a free rubric generator is available on the Web that provides many templates used by teachers and the option of generating one's own rubric, "Rubrics and Rubric Makers—Automated Web-based Rubric Maker for Teachers" ([http://www.technology.com/web\\_tools/rubrics/](http://www.technology.com/web_tools/rubrics/)).

### **Instruments to Measure Affect and Survey Use of Research Tools**

Instruments that measure what students feel they know, how confident they are, and how they use research tools and feel about doing research include self-rating checklists, questionnaires, focus groups, interviews, and research diary/journals that include reflective comments. As indicated in table 1, these can be used in a pre- and posttest setting and can be combined with surveys of classroom faculty members' perceptions about student IL skills. Surveys, whether by mail, phone or on the Web, have the advantage of potentially reaching a large number of people, both inside and outside a typical classroom setting.

Focus groups, though more useful to probe for more detail and interpretations behind questions, are extremely time-consuming and typically reach a smaller number of people. If a research diary/journal or reflective essay is used, some type of content analysis employing a checklist or simple rubric will be required to assess them. It is not uncommon to find libraries using questionnaires that are actually cognitive tests with some questions about previous library use and IL instruction. Perhaps the thought is that students will not be as alarmed by the word *questionnaire*. These types of instruments are particularly useful in combination with performance-based and/or cognitive instruments because items can be included that ask about previous IL instruction, use of research tools, and self-rating of IL skills. The results of such items can then be cross-tabulated with scores on a cognitive test and/or performance-based activity so that a comparison can be made between the direct evidence of the actual performance and the indirect evidence of the student's self-rating. Just one example of this type of comparison in the literature is the University of California-Berkeley's Teaching Library's Information Literacy Survey (<http://www.lib.berkeley.edu/TeachingLib/Survey.html>), where it was found that those scoring higher on the cognitive items had previously received some library instruction. Several of the projects in this book combine a survey/questionnaire of student perceptions about what they learned with performance-based or multiple-choice style tests, such as the Oberlin College project, "Assessing Student Learning in Sociology," and the Regent University project. The reader is referred to the following writers for more information about developing and using qualitative instruments for surveys, interviews, and focus groups: Dillon, Fowler, Krueger, Rubin and Rubin, and Shannon.

## Conclusions

The choice of an assessment instrument is made after consideration is given to the purpose, audience for and use of the assessment findings, and resources available. The institutional purpose, such as accreditation self-studies or institutional program review, is likely to influence the type of instrument selected. What is most important to remember is that (1) the specific learning outcome(s) to be assessed usually determines the instrument/method; (2) the use of multiple instruments/methods yields richer data for more than one learning domain; (3) collaborating with various academic stakeholders in the selection, development, and use of instruments results in better instruments and findings; and (4) there is support and help on every campus in such places as a research services office or a faculty assessment center or from faculty colleagues who have experience in developing learning outcomes assessments.

## Notes

1. Alexander W. Astin, et al., "Nine Principles of Good Practice for Assessing Student Learning," *Assessment Forum*, American Association of Higher Education. [Accessed 23 May 2003.] Available online from <http://www.aahe.org/assessment/principl.htm>.
2. Middle States Commission on Higher Education, *Developing Research & Communication Skills: Guidelines for Information Literacy in the Curriculum* Draft #6 (March 2001). For information contact Oswald Ratteray at Middle States Commission at <http://www.msache.org>.
3. Peggy Maki, "Using Multiple Assessment Methods to Explore Student Learning and Development inside and outside the Classroom," *NetResults* (Jan. 2002). [Accessed 23 May 2003.] Available online form <http://www.naspa.org/NetResults/PrinterFriendly.cfm?ID=558>.
4. Lisa G. O'Connor, Carolyn J. Radcliff, and Julie A. Gedeon, "Applying Systems Design and Item Response Theory to the Problem of Measuring Information Literacy Skills," *College and Research Libraries* 63 (2002): 528–43. Also see the Project SAILS site at <http://sails.lms.kent.edu/index.php>.
5. Derived from the handout "Pros and Cons of Testing for Cognitive Learning," Research and Planning Group Student Learning Outcomes and Assessment Workshops, California Community Colleges, Mar. 2003.
6. UCLA Library, "Information Competence at UCLA: Report of a Survey Project" (spring 2001). [Accessed 15 May 2003.] Available online from [http://www.library.ucla.edu/infocompetence/index\\_noframes.htm](http://www.library.ucla.edu/infocompetence/index_noframes.htm).
7. Background information, revised performance outcomes, and other documents related to the Bay Area Community Colleges Information Competency Assessment Project are found at <http://www.topsy.org>. A chapter describing the development and field-testing of the instruments is forthcoming (fall 2003) in the Jossey-Bass book, *Integrating Information Literacy Competency into the Disciplines*.



8. Weber State University Stewart Library, Information Literacy Example Sample Questions (Jan. 2003). [Accessed 23 May 2003.] Available online from <http://library.weber.edu/il/infolit/infolitcomp/sample.asp>.
9. James Madison University Libraries, Information-seeking Skills Test. [Accessed 23 May 2003.] Available online from <http://www.lib.jmu.edu/library/gold/isst.htm>.
10. California State University at San Francisco, J. Paul Leonard Library, OASIS (updated May 2003). [Accessed 23 May 2003.] Available online from <http://oasis.sfsu.edu/>.
11. ACRL, "Information Literacy Assessment Issues." [Accessed online 23 May 2003.] Available online from [http://www.ala.org/Content/NavigationMenu/ACRL/Issues\\_and\\_Advocacy1/Information\\_Literacy1/ACRL\\_Information\\_Literacy\\_Web\\_Site/IL\\_in\\_Classrooms/Assessment\\_Issues.htm](http://www.ala.org/Content/NavigationMenu/ACRL/Issues_and_Advocacy1/Information_Literacy1/ACRL_Information_Literacy_Web_Site/IL_in_Classrooms/Assessment_Issues.htm).
12. See the project Web site at <http://depts.washington.edu/infolitr/project.htm>.
13. See the results of the early phases of the CSU Information Competence Assessment Initiative at <http://www.csupomona.edu/~kkdunn/Icassess/ictaskforce.html>. More current information about the CSU Information Competence Initiative is available at <http://www.calstate.edu/LS/infocomp.shtml>, and some links to assessment and evaluation instruments are available at <http://www.calstate.edu/LS/Assessment.shtml>.
14. Educational Testing Service (ETS), *Digital Transformation: A Framework for ICT Literacy—A Report of the International ICT Literacy Panel* (Princeton, N.J.: ETS, 2002). Also available online from <http://www.ets.org/research/ictliteracy/ictreport.pdf>.
15. Craig A. Mertler, "Designing Scoring Rubrics for Your Classroom," *Practical Assessment, Research & Evaluation* 7 (2001). [Accessed 23 May 2003.] Available online from <http://ericae.net/pare/getvn.asp?v=7&n=25>.
16. Ibid.
17. Ibid.

## Selected Sources

### *General/Multi-instrument*

- Angelo, Thomas A., and K. Patricia Cross. 1993. *Classroom Assessment Techniques: A Handbook for College Teachers*, 2nd ed. San Francisco: Jossey-Bass.
- Borden, Victor M., and Jody L. Owens. 2000. *Measuring Quality: Choosing among Surveys and Other Assessments of College Quality*. Washington, D.C.: Association for Institutional Research and the American Council on Education.
- Educational Resources Information Center (ERIC) Clearinghouse on Assessment and Evaluation. At this URL, click on the "Scoring Rubrics" link for an automatic search of this clearinghouse at <http://ericae.net/sinprog.htm>.
- Huba, Mary E., and Jann E. Freed. 2000. *Learner-centered Assessment on College Campuses*. Boston: Allyn & Bacon. (See chapter 6 on developing rubrics and chapter 8 for use of portfolios.)
- Maki, Peggi. 2002. "Using Multiple Assessment Methods to Explore Student Learning and Development inside and outside the Classroom." *NetResults* (15 Jan. 2002). Avail-

- able online from <http://www.naspa.org/NetResults/PrinterFriendly.cfm?ID=558>. [Accessed 1 May 2003.]
- Merz, Lawrie H., and Beth L. Mark. 2002. *Assessment in College Library Instruction Programs: CLIP Notes #32*. Chicago: ALA.
- Nichols, James O. 1995. *Practitioner's Handbook for Institutional Effectiveness and Student Outcomes Assessment Implementation*, 3rd ed. New York: Agathon.
- Pellegrino, James A., Naomi Chudowsky, and Robert Glaser, eds. 2001. *Knowing What Students Know: The Science and Design of Educational Assessment*. Landover, Md.: National Academies Press. Available online from <http://www.nap.edu/books/0309072727/html/>.
- Rubin, Herbert J., and Irene S. Rubin. 1995. *Qualitative Interviewing: The Art of Hearing Data*. Thousand Oaks, Calif.: Sage.
- Smith, Jeffrey, Lisa Smith, and Richard De Lisi. 2001. *Natural Classroom Assessment: Designing Seamless Instruments and Assessment*. Thousand Oaks, Calif.: Corwin. (See chapter 6, "Using Multiple Choice and Other Objectives Measures," for a checklist of dos and don'ts.)
- Wiggins, Grant. 1998. *Educative Assessment: Designing Assessments to Inform and Improve Student Performance*. San Francisco: Jossey-Bass.

### **Portfolios**

- American Association for Higher Education, The Portfolio Clearinghouse. 23 May 2003. Available online from [http://www.aahe.org/teaching/portfolio\\_db.htm](http://www.aahe.org/teaching/portfolio_db.htm).
- Cambridge, Barbara, ed. 2001. *Electronic Portfolios: Emerging Practices in Student, Faculty and Institutional Learning*. Washington, D.C.: AAHE.

### **Surveys, Interviews, and Focus Groups**

- Dillon, Don A. 1999. *Mail and Internet Surveys: The Tailored Design Method*, 2nd ed. New York: John Wiley.
- Fowler, Jr., Floyd J. 1995. *Improving Survey Questions: Design and Evaluation*. Thousand Oaks, Calif.: Sage.
- Krueger, Richard A., and Mary Anne Casey. 2000. *Focus Groups: A Practical Guide for Applied Research*, 3rd ed. Thousand Oaks, Calif.: Sage.
- Shannon, David M., Todd E. Johnson, Shelby Searcy, and Alan Lott. 2002. "Using Electronic Surveys: Advice from Survey Professionals." *Practical Assessment, Research & Evaluation* 8(2). Available online from <http://ericae.net/pare/getvn.asp?v=8&n=1>. [Accessed 23 May 2003.]

### **Rubrics**

- Emmons, Mark, and Wanda Martin. 2002. "Engaging Conversation: Evaluating the Contribution of Library Instruction to the Quality of Student Research." *College & Research Libraries* 63(6): 545–60.
- Mertler, Craig A. 2001. "Designing Scoring Rubrics for your Classroom." *Practical Assess-*

- ment, Research & Evaluation* 7(25). Available online from <http://ericae.net/pare/getvn.asp?v=7&n=25>. [Accessed 23 May 2003.]
- Moskal, Barbara M. 2000. "Scoring Rubrics: What, When, and How?" *Practical Assessment, Research, & Evaluation* 7(3). Available online from <http://ericae.net/pare/getvn.asp?v=7&n=3>. [Accessed 23 May 2003.]
- Moskal, Barbara M., and Jon A. Leydens. 2000. "Scoring Rubric Development: Validity and Reliability." *Practical Assessment, Research & Evaluation* 7(10). Available online from <http://ericae.net/pare/getvn.asp?v=7&n=10>. [Accessed 23 May 2003.]

