Developing Research & Communication Skills

Guidelines for Information Literacy in the Curriculum

Executive Summary

This handbook provides colleges and universities with suggestions for how they might develop and implement a mission-driven approach to integrating information literacy across the curriculum.

Contents

Middle States Commission on Higher Education

Executive Summary

The Middle States Commission on Higher Education, in the 2002 edition of *Characteristics of Excellence in Higher Education: Eligibility Requirements and Standards for Accreditation*, defines information literacy[1] as:

> …an intellectual framework for identifying, finding, understanding, evaluating and using information. It includes determining the nature and extent of needed information; accessing information effectively and efficiently; evaluating critically information and its sources; incorporating selected information in the learner's knowledge base and value system; using information effectively to accomplish a specific purpose; understanding the economic, legal and social issues surrounding the use of information and information technology; and observing laws, regulations, and institutional policies related to the access and use of information (p. 32).

Information literacy frequently is introduced to students when they are expected to access and evaluate sources available in or through a library. However, it also extends to the essential tasks of analyzing the content of the material, creating new knowledge, and using that knowledge to produce a product, performance, or other activity. For these reasons, information literacy applies to anyone learning anything, anywhere, and at any time. In other words, in any learning endeavor, the student invokes some aspect(s) of the information literacy process, although the particular skills involved may not be well-honed or even recognized as part of a larger, coherent, and iterative process. In this sense, information literacy could be considered as a metaphor for the entire learning experience.

Many aspects of information literacy are essential components of general education, and many institutions incorporate some information literacy skills in the requirements for their general education curriculum. However, some general education programs are provided during the first two years at a university. In those circumstances, general education programs cannot offer a sufficient opportunity for students to achieve fully the higher-order information literacy skills, such as thinking more critically about content, pursuing even deeper lines of inquiry with more sophisticated methods, and becoming facile with the tools that enable students to grapple philosophically with the nature of inquiry itself.

Information literacy is much more than technological competence or on-line research. It encourages critical thinking and reflection in the context of the increasingly extensive amounts of information now available through a wide range of technologies.

The guidelines in this publication, *Developing Research & Communication Skills*, do not expand the requirements for accreditation that are outlined in the Commission's standards. Nor does the Commission require that information literacy be defined and assessed separately from other student learning goals, because it may well be reflected in the achievement of other goals. Rather, these guidelines offer specific suggestions for integrating information literacy throughout the curriculum.

---

1 The Commission's definition is based upon *Information Literacy Competency Standards for Higher Education*, published in 2000 by the Association of College and Research Libraries and widely adapted by colleges and universities across the United States of America and elsewhere.

Chapter 1
Planning for Information Literacy

Institutional Goals, Curricular Design, and the Campus Context

Planning for information literacy begins by gaining an initial understanding of the status of information literacy on campus. An institution can achieve this objective by reviewing its structures and processes in order to support the learning goals that it has identified.

First, it is necessary to determine, in general terms, what students across the institution should be able to accomplish to be information literate. The next step is to decide the extent to which basic learning goals will be emphasized at each the course, program, and institutional levels. For example, whether or not information literacy is part of the general education requirements, instruction should occur in an integrated and coherent approach throughout the curriculum so that students experience increasingly sophisticated concepts as they progress through the institution. Programs should recognize and address program-specific information literacy needs, and faculty within departments should be encouraged to tailor courses to include information literacy skills. In courses that require students to develop research skills, it is possible to identify the characteristics of information literacy that are being taught and, if necessary, to redesign courses to ensure that both lower-level and higher-level skills are being learned.

> ## Information Literacy Skills
>
> ⋏ **Framing the Research Question**
>
> ⋏ **Accessing Sources**
>
> ⋏ **Evaluating Sources**
>
> ⋏ **Evaluating Content**
>
> ⋏ **Using Information for a Specific Purpose**
>
> ⋏ **Understanding Issues Affecting the Use of Information; Observing Laws, Regulations, and Institutional Policies**

Curriculum Models

As information literacy instruction has evolved over time, two major models for developing those programs have emerged: the separate or compartmentalized curriculum and the integrated or distributed curriculum. It is possible to combine these two strategies to achieve the institution's desired learning outcomes. In addition to its place in the curriculum, information literacy also may have an important role in the formal extra-curricular programs at the institution.

The Separate or Compartmentalized Curriculum Model. In the separate or compartmentalized curriculum, information literacy is taught as a stand-alone course. It can appear in the curriculum at the lower or upper academic levels.

Courses in the separate curriculum model usually emphasize the first stages of the information literacy paradigm: identifying the information needed, finding that information, and evaluating the sources. The remaining aspects—evaluating and understanding the content and using it ethically and legally for a specific purpose—usually are the responsibility of faculty in the disciplines.

It is unlikely that a single course can satisfy all of an institution's information literacy goals, because the skills should be addressed and reinforced at various levels of sophistication throughout a student's academic career. If students take multiple information literacy courses, the overall curriculum should consist of complementary and progressively advanced components.

The Integrated or Distributed Curriculum Model. In a distributed model, various disciplines and co-curricular activities address a core set of information literacy skills, which may be blended seamlessly into upper-level courses.

One advantage of the distributed approach is that it places information literacy education in the context of the discipline, thereby deepening students' understanding of the importance of information literacy within their chosen fields. Another advantage of using upper-level and graduate courses is that students are more mature and bring a wider range of experiences to the process of framing the research question, identifying more obscure sources to explore, devising complex search strategies, engaging in deeper analysis of the content, and presenting new insights or even new knowledge to their chosen audiences. The distributed approach also engages faculty members by making them partners in information literacy instruction and enabling them to blend information literacy with the discussion of other curriculum content.

All institutions may not have evolved the level of course integration required for a fully distributed model. Some may make the transition from the compartmentalized model by having separate courses on information literacy that are discipline-specific. However, this should be regarded as only a transition and not as a final goal.

In Extra-curricular Programs. Most institutions offer extra-curricular programs that are consistent with the institution's mission and the interests of its students. They usually promote skills that enhance the social development of the individual. Participant interest is often extremely high, and these programs provide an opportunity for students to learn informally.

Institutions that support information literacy recognize that information literacy instruction does not occur in a vacuum. The resources needed to support an information literacy initiative may include personnel, fiscal responsibility, technology, and services. Faculty and librarians need support to provide information literacy instruction and to develop a curriculum in an atmosphere of collaboration, including professional development opportunities and incentives. In addition, it is helpful if there is also a culture of information literacy evident in other aspects of campus life. All of these contextual characteristics of the institution's information literacy program should be considered in the institution's strategic, operational, and assessment plans.

Chapter 2
Learning Goals and Teaching Strategies for Information Literacy

Most teaching has at its core an emphasis on ensuring that the student knows how to access, evaluate, understand, and produce information. Therefore, it is the role of faculty members to define the desired student outcome, to outline where in the curriculum certain skills are developed and practiced, to consider the range of potential learning experiences, and to select the most appropriate teaching strategies.

Faculty members can improve student learning by encouraging students to explore and analyze ideas creatively. They also can use an awareness of the principles of information literacy as a metacognitive strategy to manage their own learning because they can determine more clearly where they fit within the process at any given moment—whether accessing, evaluating, or using a particular piece of information—and whether they need to return to some prior point, even to reframing the research question and then retracing their steps with a different breadth or depth.

Phase 1: Preparing Students for an Information Literacy Experience

Any course in a discipline or any interdisciplinary course should provide, at the beginning of the class, a clear presentation of what students will be learning during the course, how information literacy relates to those learning goals, and how any prior information literacy skills that the student brings to the classroom may relate to the course content.

Phase 2: Teaching Students to Find and Evaluate Sources

Pedagogical approaches to teaching students to find and evaluate sources are as distinct as individualized teaching styles, as varied as the disciplines involved, or as common across disciplines as interdisciplinary relationships permit. However, the basic principles can be addressed in formal lectures, discussion sections, library visits, writing workshops, computer labs, or via distributed learning technologies such as WebCT™ or Blackboard™.

Phase 3: Teaching Students to Evaluate and Understand Content

Becoming information literate is a pattern of learning that builds to a climax each time it is invoked, and the pattern reoccurs throughout a person's lifetime with each learning experience. It starts when the student frames the research question, then identifies and accesses information sources, evaluates the information, and finally uses the information effectively to accomplish a specific purpose.

The multi-stage process of pursuing understanding begins when the student summarizes and synthesizes information, then explains and interprets it. Having achieved understanding, the student then selects the information that she will incorporate into her knowledge base and makes a conscious determination whether this "new" information affects not only her beliefs about what is or is not true but also her underlying values that shape her attitudes toward other aspects of life. The ability to use information becomes the evidence of understanding, and the effective use of the information is one basis for the student's final grade.

Phase 4: Producing New Information

Students gain critical insights about information literacy through their own production of information which is likely to be the result of some form of active learning opportunities—those that go beyond lectures and require students to make critical decisions about the information they evaluate and produce, especially as they try to formulate a response. Active learning assignments in research,

Phases in the Process of Teaching Information Literacy

I: Preparing Students for an Information Literacy Experience
- Defining Information Literacy and Learning Goals
- Surveying Student Preparedness

II: Teaching Students How to Find and Evaluate Sources
- Navigating the Library and Identifying Other Resources
- Providing Structure for Student Assignments
- Exploring examples of Collaboration
- Considering Active Learning Assignments

IV: Teaching Students to Evaluate and Understand Content
- Summarizing and Synthesizing Information
- Pursuing Deeper Understanding

V: Encouraging Students to Produce New Information
- Enhancing assignments in Writing, Oral Presentation, Visual Arts Projects or Artistic Performances, Service Learning, Empirical Research, and Digital Media

writing, oral presentation, constructions for engineering or the visual arts, performances, service learning, and digital media have the potential to challenge students to engage in critical analysis and the evaluation of information.

Chapter 3
Information Literacy Assessment:
A Reflective, Integrative, and Iterative Process

The assessment of information literacy is an essential element of overall curricular evaluation. Three of the most important purposes of the assessment of student learning are to ensure that students are learning what the institution considers essential to their education, to provide a basis for improving learning, and to satisfy the public's need for accountability by explaining clearly the institution's goals and accomplishments. This applies no less to information literacy.

Assessment of any type is a reflective, integrative, and iterative process:

> It is *reflective* in that it provides concrete feedback for critical reflection about instructional design, and it enables students to reflect formatively on their own development.

> It is *integrative* because of it can help to incorporate the larger institutional goals for information literacy within the disciplines and in the classroom, it provides data on student learning that faculty members can share with students, and it can be used to revise assignments or to develop follow-up quizzes, surveys, or additional lectures.

> It is *iterative* in that an institution may at any point in this process find it necessary to return to an earlier point and retrace its steps in order to refine the breadth and depth of its self-examination. Once all the steps have been completed and improvements have been made, the process begins again.

The Commission does not suggest that there needs to be a separate unit of assessment or a distinct assessment instrument labeled "information literacy." The various elements of information literacy already may be assessed across the curriculum. Some are integral parts of teaching specific courses in the disciplines, some may be incorporated within the institution's general education objectives, and some are unique to teaching library and other research skills. When making the case that students who graduate are information literate, it is the institution's responsibility to ensure that information literacy goals are defined and that the various elements scattered across the curriculum are identified as part of a coherent whole.

The most effective approach to assessment is to take an inventory of the extent to which information literacy is reflected in curricula, programs, and existing assessment measures at the institution, to consider institutional constraints, to develop or refine a plan for implementation, to measure the effectiveness of that plan, and to make any necessary improvements.

After the institution has reviewed its current assessment efforts, examined its institutional mission and goals, and identified the educational values it wishes to promote through information literacy education, the institution should take an initial inventory of where the institution currently stands in its assessment efforts and whether expertise is available on campus. Then the institution should consider any financial or other constraints on the initiative. It may even be possible to combine information literacy assessment with other efforts already underway.

The first decision to make when deciding how to assess information literacy is whether to assess at the institutional, program, and/or course levels; in the instructional activities of the library; or at various combinations of these. However, all assessment efforts should be part of a coherent plan for

systematic data collection and linked to the institution's overall plan for assessing student learning outcomes. The second decision is to select the best type of assessment strategy for the level at which information literacy assessment will be conducted and match it with an assessment tool that is meaningful for the information literacy goal to be examined.

Assessment data on students' information literacy skills may come from many quantitative and qualitative sources as well as direct and indirect measures of students' skills. Examinations, quizzes and essays, portfolios, direct observation, anecdotal accounts, and peer and self-reviews are some of the potential data sources on students' information literacy. Institutions should review Chapter 3 of *Student Learning Assessment: Options and Resources* for a discussion of direct and indirect measures, quantitative and qualitative evidence, other methodological considerations, and key questions to consider when choosing evaluation instruments.

It is important to test the instrument and to refine it to ensure that it is measuring is what the institution seeks to learn about student attainment of information literacy. Once the instrument is in use and there are sufficient data to understand what it measures effectively, it is appropriate to consider opportunities for improvement.

Chapter 4
Improving Teaching and Learning

One of the most important steps in the assessment process is what happens after the data are collected (*Assessment of Student Learning: Options and Resources*, Chapter 5).

Analysis of assessment results consists of three complementary activities: (1) an examination of the data from a particular instrument or other source; (2) a reflection on the context in which the particular instruction and testing in question occurred; and (3) a description of the implications of the findings, along with recommendations for action.

The final question for the institution is: Can it be stated with confidence that, upon graduation, students have achieved the institution's standards for information literacy?

The institution's recommendations are a call for actions that will further develop students' information skills. They should be supported by evidence that is credible, and specific recommendations make it easier for faculty and librarians to accept the challenge and to make changes in their information literacy instruction.

Improving the Curriculum

After the initial development of courses or programs for information literacy, applying the knowledge gained through assessment to improve student learning begins to bring the process full circle. Most institutions will take what they have learned and progress to the next level, improvement, to assure the vitality and relevance of the course and its role in institutional effectiveness.

Faculty and librarians who analyze assessment findings may suggest the need for specific types of professional development opportunities, such as how to improve the design of assignments or effective teaching techniques for different learning styles. Their discussions also may reveal underlying assumptions about how students and faculty apply information skills, and further discussion may test those assumptions.

The summary and analysis of the assessment results, along with the implications and recommendations should be discussed with a broad audience, including colleagues at other institutions. The specific form of communication and reflection will depend on the campus culture at an institution.

Chapter 5
Sustaining the Momentum of Information Literacy: An Overview

As explained in Chapter 3, the various elements of information literacy may be taught and assessed across the curriculum, in the general education requirements, in the major fields of study, and in the library. Therefore each institution will want to assure itself that the various elements of information literacy that are scattered across the curriculum form a coherent whole. Even after the "perfect" student learning plan is in place, each institution will continue to review the status and success of its information literacy program and to plan for the future.

- ¤ Are the curricula part of an obviously-integrated plan for learning?

- ¤ How has the institution defined the characteristics of an information literate graduate and communicated them to students and faculty?

- ¤ What is the evidence that the institution produces graduates who are information literate?

- ¤ Is there evidence of improvement based on what the institution has learned?

Many of the skills included in information literacy are not new. Framing the research question and finding, evaluating, using, and communicating information ethically and legally are basic elements of higher education. Once the need for educating students about information literacy is accepted, the means to achieve that objective may be diverse. The challenge for each institution is to define its own mission-driven path to producing information literate graduates.

Middle States Commission on Higher Education
3624 Market Street, Philadelphia, PA 19104. Tel. 215-662-5606. Fax: 215-662-5501

Publications Order Form

Please send me _____ copy(ies) of *Developing Research & Communication Skills: Guidelines for Information Literacy in the Curriculum* (118 pgs) at the following rate:

q 1 to 5 copies @ $19.95   q 6 to 10 copies @ $17.50   q Over 10 copies @ $16.50 each

Please send _____ copy(ies) of the *Executive Summary* (8 pgs) at the following rate:

q 1 to 5 copies @ $1.00   q 6 to 10 copies @ $0.85   q Over 10 copies @ $0.70 each

Amount Enclosed: $_____ Purchase Order No.:_____

Charge to my: q Amex;   q Visa;   q Master Card A/c #_____

Signature:_____ (Required for credit card charge   Expires: _____

Shipping:
   q First Class Mail, no additional charge   q 2nd Day Delivery by __ US Postal Service; __ FedEx
   q Overnight PM Delivery by Federal Express
   q Bill our ___ Federal Express; ___ USPS A/c #_____

***Ship to** Name:_____

Institution/Organization:_____

Address:_____

City:_____ State:_____ Zip:_____ Country:_____

Phone:_____ E-mail:_____