

Information Competence in the CSU
A Report

Submitted to
Commission on Learning Resources and Instructional Technology

Submitted by
Work Group on Information Competence
CLRIT Task 6.1

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Charge to the Work Group on Information Competence CLRIT Task 6.1

The Commission on Learning Resources and Instructional Technology (CLRIT) was charged with developing and recommending policy guidelines to the Chancellor which facilitate the effective uses of learning resources and instructional technology throughout the CSU. In January of 1993, under the umbrella of CLRIT, the Council of Library Directors (COLD), in desiring to create a plan which would take the CSU libraries well into the twenty-first century, began a strategic planning process. This resulted in *Transforming CSU Libraries for the 21st Century: A Strategic Plan of the CSU Council of Library Directors*.

One of the areas identified for needed action was information competency, which is considered by librarians to be a critical skill for all students. The plan states that the CSU needs to “establish basic competence levels in the use of recorded knowledge and information and processes for assessment of student competence.” CLRIT approved the strategic plan of the CSU libraries and identified the area of information competency as a high priority. Accordingly, CLRIT requested the Office of Academic Affairs to form a work group which would address the issue of information competence. The charge to the group is:

This work group is to recommend basic competence levels on the use of recorded knowledge and information and processes for assessment of student competence.

The work should at least consider:

- The level of information competence undergraduate students should have when they enter the university.
- The level of competence undergraduate students should achieve early in their university careers in order to pursue successfully their baccalaureate studies.
- The level of competence these students should achieve by graduation in order to be prepared for employment in their profession or for graduate study.
- The means by which competence should be assessed at these levels.
- In order to assist students in acquiring this knowledge and these skills, the level of competence that should be expected of instructional faculty.

The membership of the Work Group includes:

Ms. Betty Blackman, Dean, University Library, Dominguez Hills
Dr. Susan C. Curzon, Chair of the Work Group, Vice Provost, Information
& Technology Resources, and Dean, University Library, Northridge
Dr. Donald J. Farish, Provost and Vice President for Academic Affairs,
Sonoma
Dr. Patricia Hart, Faculty Director, Institute for Teaching and Learning, Office
of the Chancellor
Dr. Glenn W. Irvin, Associate Vice President for Academic Affairs and Dean
of Instruction, San Luis Obispo
Dr. Kathleen Kaiser, Representative from the Academic Senate CSU
Dr. Roberta Madison, Representative from the Academic Senate CSU
Dr. Lorie Roth, Director of Academic Services & Professional Development,
Office of the Chancellor
Dr. Gordon Smith, Associate Director, Library Policy and Planning, Office of
the Chancellor

Methods Used to Carry Out the Charge

To fulfill its charge, the Work Group on Information Competence pursued four avenues of research:

- canvassing the print literature on the topic;
- contacting individuals and organizations that are prominent in the field;
- reviewing informal and formal surveys that had been conducted; and
- seeking the advice of discipline faculty and library faculty from the CSU campuses.

Print Literature

A bibliography of the most significant books and journal articles dealing with the topic of information competence has been distributed to campus representatives attending a systemwide workshop, as have copies of the most important journal articles and copies of an anthology of essays entitled *Information Literacy: Developing Students as Independent Learners*.

A list of the print literature is included in Appendix A.

Contacts with Individuals and Organizations

The Work Group has benefited from the experience and advice of several individuals and organizations who have been active in the area of information literacy and media literacy. Several of the people contacted

agreed to visit with representatives from the CSU at a systemwide conference held in Long Beach in November 1995. They include:

- Patricia Senn Breivik, Dean of University Libraries, Wayne State University
- Howard L. Simmons, Executive Director, Commission on Higher Education, Middle States Accrediting Association
- Stuart A. Sutton, Director at the School of Library and Information Science, San Jose State University
- Kathleen Tyner, Senior Research Associate, Far West Laboratories
- Ralph Wolff, Executive Director, Commission on Higher Education, Western Association of Schools and Colleges

Organizations which provided assistance to the Work Group include AAHE, Association of College and Research Libraries, the Center for Media Literacy, and the Middle States Association Commission on Higher Education.

Review of Surveys

Three surveys have enhanced the efforts of the Work Group. The first was a relatively informal look at what CSU campuses are currently doing in the area of information competence. Vice presidents for Academic Affairs at all of the campuses were contacted and asked to report on activities pertaining to information literacy. This survey reported little activity.

The findings of this informal survey were somewhat confirmed by two more formal surveys, one conducted by the California Community Colleges through a Joint Faculty Projects Grant and the other by the Association of College and Research Libraries.

In 1994-95, The Joint Faculty Projects of the CCC sent a survey to bibliographic instructors at all campuses of the community college, California State University, and University of California systems. The survey had an 82 percent response rate overall, with a 90 percent response rate from the CSU. As part of the survey, 22 percent of the bibliographic instructors from the CSU reported that their institution had an information literacy requirement.

The other formal survey, conducted by the Association of College and Research Libraries explored the status of initiatives to promote information literacy through a survey of 830 institutions of higher education nationwide. Eighty-five postsecondary institutions in the region accredited by the Western Association of Schools and Colleges (WASC) responded, and 19 (22 percent) indicated that their campus had a functional information literacy program.

These surveys confirmed the perception that there are pockets of interest in information competence but few widespread or sustained efforts in the CSU.

Consultation with CSU Campuses

Of all the research done by the Work Group on Information Competence, the most interesting and helpful information was obtained through consultation with campus representatives--conversations which revealed that, in fact, some substantial work on information literacy was being done in the CSU, albeit on an individual, ad hoc basis and not as part of a formal, systematic program.

With support from the Council of Library Directors, Commission on Learning Resources and Instructional Technology, and the Division of Academic Affairs, the Work Group on Information Competence held a systemwide workshop on November 16-17, 1995, at the Renaissance Long Beach Hotel. Each campus was invited to send two representatives to the workshop, one librarian and one disciplinary faculty member. In addition, invitations were extended to representatives of the Academic Senate CSU.

The workshop was attended by 65 people, who spent a day and a half discussing issues relevant to information competence. A copy of the agenda for the workshop is included in Appendix B.

What Is Information Competence

Definition and Scope of the Term

One of the most difficult tasks faced by the Work Group, by the participants at the systemwide conference, or by anyone who wants to ensure that students are able to function well in the Information Age, is to provide a universally agreed-upon definition of "information competence." It is a term that means different things to different people. On one hand, it is used to denote "library literacy" or "bibliographic instruction." Another definition equates "information competence" with "computer literacy." At the other extreme, it is almost synonymous with "critical thinking." At the systemwide workshop on information competence, however, there was general consensus on the broad outlines of a definition. If one needs a concise, one-sentence definition of information competence, it is generally agreed that information competence, at heart, **is the ability to find, evaluate, use, and communicate information in all of its various formats.**

A definition that emerged from the systemwide workshop, and which is recommended by the Work Group, is that **information competence is the**

fusing or the integration of library literacy, computer literacy, media literacy, technological literacy, ethics, critical thinking, and communication skills.

Also emerging from the systemwide workshop were three aspects of information competence that are not always included in definitions of the term, but which seemed to be important to workshop participants. First, there was significant interest in the ethical and legal dimensions of information competence. Many participants emphasized the need for student awareness of issues like access and privacy, intellectual property, copyright and fair use, and the power and influence of information. Second was an emphasis on the “media literacy” component of information competence; that is, as information is increasingly conveyed through nonprint media, universities (which have been very successful at inculcating skills at reading, analyzing, understanding, and writing print materials) must ensure that students are equally successful at evaluating, interpreting, and generating other media as well. Third was an emphasis on the production and application as well as the consumption of information; in other words, in addition to finding, analyzing, and synthesizing information, students must be able to create information and communicate it effectively using various media.

Specific Goals and Objectives to be Achieved in Order for Students to be Information Competent

If a CSU campus chooses to pursue a program to ensure that its students are information competent, the institution will have to determine competencies that students must achieve at three levels:

- when they arrive at the university;
- early enough in their university careers so that they can successfully pursue their baccalaureate studies;
- when they graduate, so that they can be prepared for graduate study or employment in their chosen profession.

Specific Competencies Proposed by Work Group

As a result of the workshop and a study of the literature of information competence, we have identified the overall competencies necessary for student success. The following competencies, outlined in Table 1, provide the core competencies. It must be emphasized, however, that this is not a definitive list. More in-depth work with the competencies must be done than has occurred in the first phase of our project.

TABLE 1

**Information Competence:
A Set of Core Competencies**

In order to be able to find, evaluate, use, and communicate information, students must be able to demonstrate these skills in an integrated process:

1. State a research question, problem, or issue
2. Determine the information requirements for the research question, problem, or issue
3. Locate and retrieve relevant information
4. Organize information
5. Analyze and evaluate information
6. Synthesize information
7. Communicate using a variety of information technologies
8. Use the technological tools for accessing information
9. Understand the ethical, legal, and socio-political issues surrounding information and information technology
10. Use, evaluate, and treat critically information received from the mass media
11. Appreciate that the skills gained in information competence enable lifelong learning

In order for a full list of competencies to be developed, we recommend that a subcommittee of discipline faculty and library faculty be formed. The charge to this subcommittee will be to create a model list of information

competencies which identify the knowledge and skills needed for entering the university and for graduating from the university.

Competencies for Entering the University

At least two organizations have defined the levels of information literacy that students must have at the point of exiting from high school and beginning university study.

In 1992, the State University of New York (SUNY) defined the information skills expected of incoming freshmen, and they are listed in Appendix C.

In addition, the American Association of School Librarians recently promulgated a statement of what information literacies should be covered by a student graduating from high school. This statement has been endorsed by the National Forum for Information Literacy, an umbrella group of over 65 organizations, and it is included in Appendix D.

Competencies for Graduating from the University

To help campuses trying to implement a program in information competence, the Work Group has assembled a collection of competency statements from other universities across the nation. They include

- Cornell University's Mann Library (see Appendix E)
- Cleveland State University (see Appendix F)
- Arizona State University West (see Appendix G)
- CSU Monterey Bay (see Appendix H)

The Work Group hopes that these sample statements, as well as the competencies outlined above, will form a basis from which the subcommittee of discipline and library faculty can shape the model competencies for the CSU.

Why Is Information Competence Important

The latter half of the twentieth century has been designated rightly as the Information Age. Never has so much information been available in the history of humankind. Consider these facts:

- The average person of today sees as much information in one day as the average person saw in an entire year in the eighteenth century.
- Offices generate nearly 2.7 billion documents per year.

- Nearly 1 million items are published world wide each year.
- The average white collar worker reads documents 24 hours a week. The average blue collar worker reads 97 minutes a day.
- Futurist magazine has predicted that by the year 2000 about half of all the service workers will be involved in collecting, analyzing, synthesizing, structuring, storing, or retrieving information as a basis of knowledge.

Moreover, there appears to be no end in sight. The production of information keeps multiplying exponentially, as knowledge is created, developed, and reshaped at dramatic rates. Of course, the rate of production of information has been greatly encouraged by the emergence of information technologies. The power of automation to store, retrieve, and disseminate information is one of the main forces behind the Information Age. While the issue of information competence has existed for decades within the library community, technology has brought the issue to national attention in the larger community of educators. Today everyone interested in information and knowledge is aware of the explosion of information generated and stored, the unregulated sprawl of the internet, the emergence of on-line databases, the mystique of the personal computer, and the power of words and graphics.

However, in the midst of so much abundance, our faculty face another question: how much information are students' minds storing and retrieving? The answer is, by some accounts, not very much.

As reported in the Bulletin of the American Association for Higher Education (AAHE), "The curve for forgetting course content is fairly steep: a generous estimate is that students forget 50% of the content within a few months A more devastating finding comes from a study that concluded that even under the most favorable conditions, students carry away in their heads and in their notebooks not more than 42% of the lecture content. Those were the results when students were told that they would be tested immediately following the lecture. These results were bad enough, but when students were tested a week later, without the use of their notes, they could recall only 17% of the lecture material."

The convergence of the production of the information age and the growing awareness of the student memory loss of course content leads us to conclude that a vital part of education must be in the students' ability to locate information for themselves. If students graduate from a CSU campus unable to locate, synthesize, and evaluate information, they will not have the skills necessary for survival in any field. Moreover, even if student retention of course content was almost perfect, the rate of change of knowledge is so high

that what students learn today, especially in certain fields, may not be accurate or relevant a few years from now.

This is the world in which our students now live and will live for the rest of their lives. Are we preparing them to navigate successfully through this profusion of print and non-print media? Our challenge is to equip students with the skills and knowledge that will enable them to live satisfying, productive lives in a world awash in information, and this commitment to ensure the information competence of our students forms the basis of the efforts of the Work Group on Information Competence.

Methods for Implementing a Program for Information Competence

Programs to develop the information competence of students have long been undertaken by academic libraries. These programs have introduced the critical thinking skills and awareness of resources that allow students effectively to navigate the wealth of information accessible through libraries, and many library faculty have been zealous and committed in their outreach to the academic community.

It is not as certain, however, that skills promoted by library faculty have been reinforced and further developed in the academic curriculum. As made evident in the CSU workshop, many discipline faculty members do indeed foster students' ability to use information resources and encourage students to develop the skills necessary to be independent, self-directed learners. In general, however, the skills of information competence have not yet been firmly embedded in the academic curriculum. Nor is the collaboration of discipline faculty and library faculty in developing students' information skills widespread.

The research undertaken by the Work Group suggests that isolated, hit-or-miss, ad hoc attempts cannot ensure that students are well equipped for the Information Age. It also indicates that the best programs are integrated into the curriculum and are built on strong alliances between discipline faculty and library faculty. Our report, therefore, assumes that the information competence of students is a responsibility to be shared by discipline faculty and library faculty and should be an integral element of the curriculum.

Recommendation of the Work Group on Information Competence

Participants at the CSU workshop considered the strengths and weaknesses of the various models for implementing a program in information competence. It was generally agreed that there are many difficulties associated with implementing ANY program at all; however, there was also strong consensus

that if a program were to be implemented, it must be integrated horizontally and vertically across the curriculum. In other words, almost no one is in favor of a “quick fix,” in which a stand-alone course, taken once in the student’s career, is expected to meet a student’s need to be an informed and ethical consumer and producer of knowledge.

There was a great deal of interest in achieving this goal through a three-stage process, in which the fundamentals of information competence are introduced in a freshman-orientation/transitions course, are further developed by being embedded in general education courses, and are reinforced and amplified in the major area. Several participants noted the possibility of emphasizing information competence in a “cornerstone” class (introduction to the major area) as well as in a “capstone” class (the culminating experience of the university career).

There was also near unanimity in conceiving that the ideal program would integrate information competence through all courses at all levels of the university.

Implement Information Competence in a Freshman Orientation/Transitions Course

Making sure that students are aware of the information resources available to them on a campus is a module often found in the Freshman Seminar/Transitions courses which have become widespread in the past decade. In many ways, this is a likely place to begin a sustained emphasis on the students’ acquiring information skills, but the “orientation” nature of the course and the necessity to cover all student support services and study skills usually dictates that the component devoted to information competence be brief.

Implement Information Competence in General Education

Since the ability to use information effectively and wisely is crucial to a student’s success in higher education, it seems natural to incorporate information competence into the general education curriculum required of all students. It could be added as a stand-alone course dealing with the topic, or it could be added as a component in several or all of the courses included in the General Education curriculum.

Implement Information Competence in the Major Area

It is possible to identify competencies that all students should have, but sometimes additional competencies are needed by students majoring in particular disciplines. In other words, there are some things about information that nursing students should know that are not applicable to a

person studying fine arts. Some aspects of information competence are peculiar to a specific discipline and must, therefore, be integrated into the major area.

Some models for programs in information competence in the major area choose to integrate this subject into an “introductory” or “gatekeeper” or “funnel” course, the one that students take first in their disciplinary sequence. The introductory course in a discipline typically familiarizes students with the methodologies, terminologies, and resources of a discipline, and the nature of this course makes it a clear complement to the topic of information competence.

Other models choose to emphasize information competence in part or all of several courses required in the major. This is perhaps the most common way that information competence is now implemented in the CSU. Many of the workshop participants indicated that students’ mastery of information skills was dependent on the individual professors with whom they had studied. In other words, it appears that many CSU professors have fostered the information competence of their students by integrating information resources in their major courses.

Implement Information Competence as an Add-On to Another Course

Discipline faculty and library faculty at Cal Poly San Luis Obispo are currently piloting a program that treats information competence as an enhancement to an already established course in the disciplines. In this case, students enrolled in an architecture course gain one extra unit of credit for completing the information component, developed by the faculty teaching the course in consultation with librarians.

Implement Information Competence through Competency-Based Mastery

One of the most influential trends of recent years has been the universities’ willingness to award academic credit on the basis of students demonstrating mastery of skills as opposed to their simply taking courses. For example, many nurses who return to college to pursue a baccalaureate degree can demonstrate the skills they have attained during their years of employment, are allowed to receive credit for the mastery of the skills they can demonstrate, and are then placed in the appropriate course in the baccalaureate sequence. Similarly, CSU’s newest campus, at Monterey Bay, is an experimental program through which students, in order to graduate, must demonstrate mastery of host of skills and knowledge--regardless of whether that knowledge was gained through life experience, independent study, regular university courses, or community service.

In a like vein, many have proposed that an excellent way for a campus to institute a program of information competence is to do so by requiring students to demonstrate mastery. Students can be given ample opportunity to acquire the necessary skills (through workshops, workbooks, computer tutorials, classroom instruction, etc.), and when they believe they have mastered the competencies identified, they can apply for an assessment and evaluation. Once the students have passed the assessment, their transcript reflects that they have completed this requirement for graduation.

A common theme among the participants at the systemwide workshop was the possibility of using computer-based instruction to teach some of the skills associated with information competence. Computer-based instruction that could teach these skills might also be a vehicle for assessing them, and if the CSU faculty could develop this kind of software as a teaching aid, it could be shared with colleagues in K-12 and the community colleges.

Methods of Assessing the Information Competence of Students

Methods of assessing students' achievements are as various as the campuses and the ways of implementing an information competence program. Student mastery of the skills of information competence could be assessed through a standardized test or through a performance or demonstration of the skills; the assessment could be course-based or competency-based. (In course-based assessment, if a student successfully completes assignments made in a course, that student is assumed to have mastered the requisite skills. In competency-based assessment, sometimes skills are judged or evaluated apart from student performance in a class, such as is the case with the Graduation Writing Assessment Requirement on many campuses.)

Most participants at the systemwide Workshop on Information Competence agreed that assessment of students' ability to find, evaluate, use and communicate information should be tested through performance, demonstration, or application of the skills. Some suggested that students be required to create a Web page that displayed a portfolio of the work they produced during their career in the CSU. Others suggested that a hypermedia project or an interactive resume might be a good culmination project to demonstrate the student's information competence.

Another area of general agreement centered on the notion that just as information competence skills should be distributed horizontally and vertically throughout the curriculum, so, too, should the assessments. It was

felt that students' information competence skills needed continual assessment at every level throughout their progress in the university.

Finally, several participants noted that since computer-based instruction could teach certain elements of information competence, so, too, could the software developed for this instruction help to assess students' achievement of the skills.

Aspects of the CSU Culture that Inhibit or Encourage a Program in Information Competence

Although almost everyone agrees that our students need to be information competent, we cannot show that the necessary skills are embedded in our curriculum or clearly and coherently taught in our classrooms. The Workshop on Information Competence made apparent that there were small pockets within the CSU where great attention was being paid in a variety of creative ways to the information literacy of students. Information competence in the CSU is being pursued by an individual professor here, a librarian there, a specialized course here, a localized program there. Workshop participants also indicated, however, that there is no comprehensive, systematic effort underway at any of the campuses, no ability to say for certain that each student who graduates from a particular campus has the information skills to allow him or her to pursue independent lifelong learning or to maximize success on the job or in graduate school.

It is not surprising that information competence is receiving increasing attention but that it has not yet taken firm root in the CSU. For one thing, the notion of information competence is a fairly recent one. Only with the information explosion of the past decade has the need to be information literate been seen as crucial to an individual's chances for success. When one considers how long it took English composition or computer literacy or critical thinking to become part of the curriculum, it comes as no surprise that information competence is still in its infancy as a discipline. Aside from its novelty, however, there are several reasons (identified by workshop participants) why the CSU has not yet fully embraced this nascent field.

Factors that Inhibit

Need for Faculty Development

First of all, if CSU faculty are to foster information competence skills in their courses, many of them need to have their own skills enhanced. Before a professor can teach students to do a hypermedia project or understand the provisions of the copyright act or discuss the ethics of email, he or she must

have considerable faculty development opportunities. With the rapid pace of technological change, skills need continual updating and renewing. Many faculty would likely profit from development in the technological aspects of information competence, although many faculty have indeed mastered, as well as masterfully taught, the critical-thinking components of information competence.

Clearly, the need for faculty development is paramount. Yet funds for faculty development are limited; the ability to get released time is even more limited; and faculty interest in information competence, although genuine and deep, must also compete with a variety of other faculty development needs in assessment, collaborative learning, multiculturalism, internationalization, recent developments in the discipline, and so on.

In short, before we can ensure the information competence of our students, we must ensure the information competence of our faculty, and we must provide the time and money needed to do this.

Need for Collaboration between Discipline Faculty and Library Faculty

Second, an information competence program depends upon a close collaboration between discipline faculty and library faculty. As was shown in the systemwide workshop, there is real evidence of productive synergy when cooperation of discipline and library faculty occurs. However, in the CSU, most of the time discipline and library faculty exist in separate and distinct spheres, and there are no incentives or rewards to encourage collaboration.

Need for a Strong Information/Knowledge Infrastructure

In order for students to obtain a good education, they must have access to a wide variety of knowledge that challenges their minds, encourages them to read and research broadly, and makes them aware of the range and breadth of the knowledge developed by many people and many cultures. This means that the library's collections, including the material within its walls and the access to materials beyond its walls, must be strong and vital. The significant decline in the CSU budget has greatly affected libraries and has reduced access to knowledge for students, whose education has been diminished as a result. The information infrastructure of the CSU must be restored in order for students to be exposed to the broad range of information and knowledge necessary for a university education and necessary for the full development of skill in information competence.

Need for Strong Technology Infrastructure

Fourth, a strong program in information competence is dependent upon a strong technology infrastructure, and the CSU campuses vary widely in this

area. Some campuses offer a computer on every faculty member's desk, well equipped and well staffed labs for students, and a large professional support staff in information resources. Other campuses have considerably less. If, as some workshop participants suggested, all students might be asked to produce a Web page before graduation, we must have the technology to support this ambitious endeavor.

A significant portion -- but by no means all -- of information competence is tied to technological literacy (the ability to use a computer to conduct a Boolean search, to create hypermedia, to write email). Obviously, then, students who have ready access to computers tend to be more successful at using information. Thus, requiring information competence of all students could possibly widen the gap between the information haves and have-nots.

Inherent Difficulty in Changing Degree Requirements

Fifth, curriculum has always been a field on which fierce territorial battles have been waged. Current requirements in general education or in the major area--seemingly a reification of the natural order of things--are actually temporary constructs. Historically, they are the result of uneasy truces, compromises, and negotiations among colleges, schools, departments, and individual faculty. Veterans of past discussions over General Education requirements are understandably not anxious to take on the question of who or what department might teach information competence. The politics of General Education make this a challenge.

No Specific Departmental Affiliation for Information Competence

Sixth, information competence has many natural departmental affiliations and simultaneously no specific departmental affiliation. Therefore, it has no obvious champion to forward its cause among discipline faculty.

Factors that Encourage

Despite all these factors that militate against the development of a program in information competence within the CSU, there are, however, equally strong counter-balancing factors. In several ways, in fact, the CSU culture is particularly well suited to and conducive to ensuring that all graduates of the CSU are information competent.

CSU as a Teaching Institution

Of over-riding importance is the fact that the CSU is a teaching institution. Whereas other universities privilege research and construct a reward system built on numbers of books published and grants obtained, the CSU has always placed a premium on teaching and has dedicated itself to the enrichment of

the lives of students. Having a mission and a tradition so clearly focused and defined, the CSU, moreso than other institutions, is in tune with student needs and more adaptable to changes in curriculum that will prepare students for greater opportunities in the future.

CSU as a Student-Centered Institution

Second, California State University prepares a workforce for the largest state in the union. The CSU makes this contribution to California by preparing well-rounded, well-educated students who have learned how to learn, and professionals who can enrich the economic, social, and cultural life of the state. The CSU prepares two-thirds of California's teachers, more computer scientists than all the other California universities combined, and a significant number of engineers and other professionals. Because it is one of the engines that drives the state's economy, the CSU has always been responsive to the needs of students who will enter the world of work upon graduation and must also be prepared to change careers several times in their lifespan. Just as information has changed the workplace, the need to be information competent will affect students entering the world of work.

Strong Teaching/Learning Infrastructure

A third reason why CSU is appropriate for a program in information competence emerges from the previous two reasons. Since the CSU has a faculty committed to teaching and students earnest about learning so that they can enrich their lives, the CSU has developed a fairly substantial teaching/learning infrastructure. Support for teaching and learning is evident at the system level in the CSU Institute for Teaching and Learning, a unit that sponsors conferences and workshops for the enhancement of faculty systemwide. Nearly all the campuses, likewise, feature some kind of center for teaching and learning, although some are embryonic and others full-grown. These centers can serve as an origination point for the faculty development that must accompany any serious program for information competence.

History of Building Consensus

Finally, the history of curriculum and consensus in the CSU provides models that might well be emulated by a program for information competence. For example, when the faculty of the CSU agreed that all students must have mastered skills in English and mathematics, it persuaded the Trustees to adopt a policy requiring that students be proficient in these areas, and it developed courses to fulfill these goals. Likewise, after concerns arose about the writing skills of college graduates, the CSU adopted a policy mandating a graduation writing assessment requirement. These past actions indicate that the CSU, as an institution, can recognize a need, define competencies to be

mastered, devise assessment instruments, and create a variety of models for implementing a policy. This tradition augurs well for a program in information competence.

Issues to be Considered in Implementing a Program in Information Competence

The information-gathering conducted by the Work Group on Information Competence suggests that there are several other important topics to be considered if the CSU campuses choose to integrate information competence into their curricula. They are:

- Forging connections among the CSU, CCC, and K-12
- Conducting a needs assessment
- Connecting to employers and alumni
- Considering transfer students
- Promoting a sustained emphasis on information competence

Forging Connections Among the CSU, CCC, and K-12

K-16 in California is an interdependent, interconnected system. The CSU relies on the K-12 and community college sectors to prepare students ready for university study, and K-12 and the community colleges depend on the CSU to prepare qualified teachers for their classrooms.

This same interdependence is crucial in information competence. Due to the severe budget cutbacks of recent years, California is now last among all the states in the nation in the resources devoted to libraries and media in elementary and secondary schools. Fifty percent of the school libraries in the state have closed, and the American Library Association has labeled California among the worst in the nation in terms of the state of the libraries.

CSU must work in concert with colleagues in the schools and the community colleges to make sure that information competence skills are emphasized (and funded) from elementary school through graduation from the university. In addition, CSU must make sure that its programs to prepare future teachers are educating these prospective instructors to be information literate themselves as well as able to teach the skills of information competence to others.

Finally, a major initiative in information competence has been funded in part through an Intersegmental Joint Faculty Project sponsored by the Chancellor's Office, California Community Colleges. Bibliographic instruction librarians from all three postsecondary systems in the state have

been involved in numerous phases of this study, the most recent report of which was released in September 1995, and is entitled "Basic Library and Information Competencies: A Unified State-Wide Approach." Whereas an earlier phase of this project attempted to increase awareness among the segments of higher education in California, the current report tries to identify skills which should be part of a comprehensive program of bibliographic instruction in the first two years of college. The ultimate goal of this project is to develop a strategy for presenting a unified library/information literacy program to all levels of state-supported higher education.

The CSU must continue as an integral part of this effort, and individual campuses should be encouraged to expand their relations with local schools and colleges to include the topic of information competence.

Conducting a Needs Assessment

Concern about the information competence of students is so widespread and strong that one assumes that the concern is legitimate and is based on an accurate perception of the needs and abilities of students. However, little empirical research has been done to evaluate the information skills of students. Although there is a relatively large body of research about the information literacy of elementary and secondary students, very little assessment has been done with postsecondary students.

An important first step in a program in information competence is an assessment of the current state of students' information skills. We cannot measure progress until we have a baseline from which to work.

Connecting with Employers and Alumni

The universities which have developed systematic programs to ensure the information competence of students often have done so as a result of contact with employers who hire their graduates. A program in the Colleges of Business and Engineering at North Dakota State and a program in the College of Natural and Mathematical Sciences at Towson State, for example, were instituted after interviews with employers highlighted the need for greater skills at managing information.

The CSU could profit if campuses which regularly communicate with alumni and employers would include information competence as a topic to be covered.

Considering Transfer Students

Trying to ensure that all CSU graduates are information competent is particularly difficult because two-thirds of all graduates are transfers from

community colleges. Thus, if information competence is added as a component of a freshman orientation/transition course or as a component of a general education course, two-thirds of the CSU graduates (the transfer students) will not have experienced this part of the curriculum.

Furthermore, given that almost half of these students' education is obtained at another institution, the CSU has a short period of time to influence what students know and can do. It would appear, therefore, that if the CSU is serious about ensuring the information competence of all its graduates, it must look towards implementing such a program in the major area, in upper-division general education, or through a competency-based mastery. In addition, CSU must work with the community colleges to develop an integrated program of information competence.

Promoting a Sustained Emphasis on Information Competence

To a certain degree, all curricular changes are transient and temporary--some, perhaps, more faddish than others. Two movements to which the emphasis on information competence are most frequently compared are Writing Across the Curriculum (WAC) and Internationalizing the Curriculum. In both of those past efforts, the focus was on adding a component to all courses instead of creating stand-alone, self-contained courses. Both were successful, but Writing Across the Curriculum has had a much greater impact and has persisted longer. Undoubtedly, there are many reasons for why WAC has succeeded to a greater degree, but certainly one of the reasons is that the WAC movement was spearheaded, championed, and sustained by a group of ardent supporters. The movement to ensure information competence could profit by this example.

Conclusions

Based on the information derived from a review of the literature on information competence, interviews with experts in the field, results of informal and formal surveys, and consultation with the discipline faculty and library faculty in the CSU, the Work Group on Information Competence has drawn conclusions about (1) the nature of a successful program in information competence, and (2) the environment that will allow such a program to take root and flourish.

An Effective Program in Information Competence

- Is diffused throughout the curriculum.
- Uses a wide range of information resources in problem-solving strategies.

- Makes effective use of instructional technologies to teach information competence.
- Encompasses finding, evaluating, and using information, and it emphasizes the ethical and legal issues connected to information, media literacy, and students as producers as well as consumers of information.
- Is built on a needs assessment, which evaluates the current state of students' competence in information skills, as well as on-going assessment of students' achievement of the skills that make them information competent.

An Environment that Will Encourage the Growth and Development of Programs in Information Competence

- Respects the individuality of different CSU campuses.
- Is built on a collegial partnership of library faculty, discipline faculty, and media and instructional technology professionals.
- Is founded on collaboration and articulation with the community colleges and the K-12 sector.
- Promotes the professional development of library faculty and discipline faculty.
- Provides necessary human and fiscal resources.
- Provides the necessary information and technology resources.
- Emphasizes initiatives at both the system level and the campus level.

Recommendations for Future Action

The Work Group on Information Competence recommends the following actions to ensure that students who graduate from the CSU are information competent:

1. Undertake a systematic assessment of student information competence to develop a benchmark.

2. Develop a model list of information competence skills for students entering the university and graduating from the university. Establish agreements with K-14 on these skills.
3. Develop pilot information competence programs or courses on several campuses.
4. Develop a “teaching the teachers” program so that faculty development in information competence can occur.
5. Develop computer software that enables the teaching of information competence.
6. Develop faculty workbooks and checklists for K-16 to assist faculty with the teaching of information competence.
7. Work with the California Superintendent of Schools to ensure that information competence is on the agenda for K-12.
8. Work with the community colleges and support their on-going information competence initiative.
9. Collaborate with SUNY-CUNY to see what initiatives in information competence can be developed together.
10. Collaborate with textbook publishers to help with the integration of the concepts of information competence into textbooks.
11. Pilot a distance-learning effort with information competence.

Appendices

Appendix A:

Selected List of Print Resources on Information Competence

Appendix B:

Agenda for November 1995 CSU Workshop on Information Competence

(Appendices C - H may be obtained by contacting Gordon Smith, (562) 985-9591; e-mail: gordon_smith@calstate.edu)

Appendix A

permissions to Reprint Granted

1. Stuart A. Sutton Information Literacy Initiative, part I, San Jose State University
2. David Considine, "An Introduction to Media Literacy: The What, Why, and How To's" in Telemedium, The Journal of Media Literacy, Vol. 41, No. 2, Fall 1995.
3. National Information Infrastructure, "Common Ground: Fundamental Principles for the National Information Infrastructure" First Report. Feb. 15, 1995.
4. SUNY, College Expectations: The Report of the SUNY Task Force on College Entry-Level Knowledge and Skills, October 1992.
5. Lawrence J. McCrank, "Academic Programs for Information Literacy: Theory and Structure" in RQ (Reference Quarterly), Summer 1992, pp. 485-497
6. Commission on Higher Education - Middle States Association of Colleges and Schools, "Characteristics of Excellence in Higher Education"
7. Ralph A. Wolff
 - Using the Accreditation Process to Transform the Mission and Functioning of the Library
 - Rethinking Library Self Studies and Accreditation Visits
8. "Bill of Rights and Responsibilities for Electronic Learners"
9. "Passages to Information Literacy: Your Keys to Success," Cleveland State University Library
10. Sonoma State Library, "Information Literacy: What Is It?"
11. Arizona State University West, Phoenix AZ, "Information Competencies for Students"
12. CSU Monterey Bay, "General Education: Common Undergraduate Requirements"
13. American Association of School Librarians, "Information Literacy: A Position Paper on Information Problem Solving"
14. Jan Kennedy Olsen and Bill Coons, Albert R. Mann Library, Cornell University, "Information Literacy Program: Encompassing Goals & Subordinate Objectives" in LOEX-89.

15. Patricia Senn Breivik and Dan L. Jones, 'Information Literacy: Liberal Education for the Information Age' in Liberal Education, Vol. 74, No. 1, Winter 1993, p. 2429.
16. "Model Statement of Objectives for Academic Bibliographic Instruction" -ACRL Bibliographic Instruction Section
17. Shirley J. Behrens, "A Conceptual Analysis and Historical Overview of Information Literacy"

Appendix B

Agenda Workshop on Information Competence November 16 - 17, 1995 Renaissance Long Beach Hotel Long Beach, California

Thursday, November 16

7:30 -10:30 am Registration - Second Floor

7:30 -10:30 Continental Breakfast - Second Floor Foyer

10:30 -11:00 Workshop Overview

Dr. Susan Curzon, Vice Provost

Information & Technology Resources, CSU Northridge

11:00 -12:30 General Session: What is information competence?

Dr. Patricia Senn Breivik,
Dean, Wayne State University

Dr. Kathleen Tyner
Senior Research Associate, Far West Laboratories

Dr. Howard Simmons
Executive Director, Commission on Higher Education
Middle States Association of Colleges and Schools
Moderator: Dr. Patrick McDonough
Associate Vice Chancellor, Academic Affairs
CSU Office of the Chancellor

12:30 - 1:30 Lunch

1:30 - 3:00 Breakout Sessions

Information competence in undergraduate education - definitions,
issues, obstacles, opportunities

3:00-3:30 Break

3:30 - 5:00 Breakout Sessions

Information competence in the disciplines

5:00 - 5:30 Break

5:30 - 6:30 Dinner

6:45 - 8:00 - General Session
Groups present results of breakout sessions

8:00 Coffee Hour

Friday, November 17

7:30 - 8:30 am Continental Breakfast

8:30 -10:00 General Session: How can an information competence requirement be implemented in the CSU? What are the various models ?

Dr. Stuart Sutton
School of Library and Information Science
San Jose State University

Dr. Luz Mangurian
Department of Biology
Towson State University

Dr. James Clements
Department of Computer & Information Science
Towson State University

General discussion and question-and-answer

10:00-10:15 Break

10:15 - 11:30 Breakout Sessions
Implementation, student learning outcomes
methods of assessment, need for faculty development

11:30 -12:30 General Session
Groups present results of breakout discussions

2:00 pm Hotel Checkout