Introduction

In April of 2001, the Academic Senate established a task force to examine the issues associated with research instruction at Glendale Community College. This action came at least in part in response to the California State Academic Senate's resolution regarding the importance of such research skills (Rose et al), termed "information competency" in the language of the state senate report and as follows in this report. The task force has examined and evaluated the current forms of information competency instruction at Glendale as well as a wide variety of information from the field as a whole. Our goal was not only too evaluate the efficacy of current methods but to determine the best course of action for the future. The goal of the task force has been to examine a wide range of options as systematically a possible and to base our recommendations not only on our own analysis but on the conclusions available to us from outside sources. A bibliography is attached to this report as is a report detailing the most current results of an ongoing internal study of information competency instruction at the college.

Information Competency and the Current Need

Information competency is an ability consisting of three primary skills: 1) The ability to **recognize the need** for information. 2)The ability to **locate** appropriate information. 3) The ability to **evaluate** information that has been collected.[1] While these skills have always been an important part of a sound academic foundation, they are particularly relevant now in an age when recent technology as well as conventional resources combine to offer an almost incalculable volume of immediately available information. Fifteen years ago, the New York Times published a statistic asserting that a person would encounter as much information in a single day by reading that paper as the average person living in the Renaissance would encounter in a lifetime. Amazing until one considers the amount of subject-specific information a person can access currently through the Internet without even bothering to leave his or her home. Take, for instance, a recent internet search for information on civil rights, which took .04 seconds to perform and yielded 3,270,000 results. This overwhelming accessibility of electronic information in the form of both content and cataloging necessitates an unprecedented level of skill in processing and evaluating.

The question then of the current relevancy of this topic has less to do with what we, as educators, ask of ourselves and our students as with the ways in which fulfilling

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[1] A complete definition is available on the State Academic Senate website: http://www.academicsenate.cc.ca.us/Academic%20Senate%20Web/Publications/Papers/Info_ competency.html

those demands have changed. In the last fifty years, research assignments have changed very little; however, students no longer deal with college or even regional information resources, but rather with an intricate global network of resources. Further, this global network is not something that exists solely for the purposes of academic research; it is a part of our students' daily lives. Our responsibility, then, is not to turn away from the task of helping our students manage this information, even if doing so would simplify our lives and the lives of our students in the short run. To do this is to remain entrenched in the view that because we are asking nothing new of our students, we can ignore the fact that a vastly changed informational landscape has reshaped the boundaries of research demands. Information competency is not about requiring something new of our students but about providing the necessary tools to allow our students to successfully fulfill the requirements we already make of them.

The significance of the need to address this situation is still being evaluated, but a number of studies show disturbing results. A recent article from an academic review documents studies at both UC Berkeley, on the graduate level, and UCLA, on the undergraduate level, in which competency tests were administered to groups of students who considered themselves more than competent researchers. Despite their confidence, which seems to have been based primarily on their knowledge of and skill with computers, the overwhelming majority of both groups failed the test. (Maughan) From this we must conclude that students may be very adept at using computers but that they have relatively little skill where gathering information is concerned. The confusion between computer literacy and information competency is extremely widespread, and while we must acknowledge the importance of computer skills in the information age, we must recognize the essential difference between a machine and the information to which it gives us access.

Further, we see an increasing awareness on the part of academic institutions of the necessity of addressing the needs of students in this area. At Glendale College, our mission statement now includes the phrase "The need to address information and technology issues." Our Master Plan Task force has added a discussion of information competency to the agenda for its upcoming retreat. The Research Across the Curriculum Task Force was created in response to a State Academic Senate resolution addressing the importance of information competency and the need to address it in a substantial way in the California Community Colleges. (Rose et al) The Chancellor's office has provided support, in the form of grants, two of which have gone to Glendale College, to conduct research on effective methods of providing information competency instruction. Most significant, however, are considerations on the part of Cal State and UC schools to adopt an information competency requirement, and of requiring that students pass an assessment test in their junior year. This would mean that, in order to adequately prepare students for transfer, community colleges would need to address information competency instruction in a systematic and demonstrably effective way. Additionally, recent indications are that the Chancellor's office will also mandate some form of

information competency instruction for all the colleges under its jurisdiction. While neither of these situations is imminent, the discussion itself indicates that addressing the needs of students with regard to information competency is not just pedagogically sound but will almost certainly become necessary in terms of accreditation and articulation.

After a careful study of the background that is summarized here, the Research Across the Curriculum Task Force recommends that Glendale College commit the necessary resources to continue and develop programs already in place to address the needs of its students with regard to information competency and that these programs be of sufficient scope to address the necessity of a systematized preparation of all Glendale students.

Addressing the Need

Having identified the need for information competency instruction, the task force then began to consider methods of implementation. Current models for this implementation include:

- ➢ *Stand-Alone Classes* are those whose sole purpose is to instruct students in the skills necessary to make them information competent. These classes may be offered on their own or paired with classes from other disciplines. The advantages of this model are clear: the curriculum of the class specifically addresses information instruction and those who are recruited to teach such classes have specific knowledge in the field. The primary disadvantage of such a model is in the ability of a class outside the existing curricular structure to reach a significant number of students unless that class is made part of the required curriculum for all students, a solution that presents its own set of complications.

- ➢ *Selected Infusion* is a model in which certain existing classes are targeted as those that will provide instruction in information competency. The structure of those classes is then altered to meet the demands of this instruction. Selected infusion has the advantage of adapting to an existing curriculum and minimizes, to some extent, the need for additional staff to support a program. The primary disadvantage, however, stems from this last assumption. Unlike the stand alone model, instruction is not provided by experts in the discipline of information science. Furthermore, because information competency instruction is such a new field, we cannot count on all existing faculty to be equally versed in its implementation. As a result, the unevenness of such instruction will likely present difficulty.

- ➢ *General Infusion* is a model that requires all classes to address information competency on some level, much the same as classes are now required to

address critical thinking. This model has the advantage of unparalleled access to the student body and of demonstrating the need for information competency in a wide variety of contexts. However its disadvantages are a diffusion of focus in terms of instruction, an increased difficulty in insuring a consistent level of instruction, and the difficulty of assessing and adapting the program effectively.

It is important to note that it is not necessary that an institution choose a single model of instruction. Indications are, in fact, that addressing the needs of students on a variety of levels is most effective.

Currently, Glendale College is a leader in the field of information competency instruction, having begun implementation on a number of levels in both the stand-alone and infusion models. Library 191, now in its fourth year, is a one unit course, conforming to the stand-alone model, that provides instruction in all aspects of research technique. In its fourth year, the course has produced demonstrable results in terms of student success as evidenced by internal statistical studies (see attached) and anecdotal evidence from students and faculty interviewed by the task force. Faculty has attempted to address the difficulty, identified above, of reaching a significant portion of the student body by vigorously informing students and faculty of the existence of the class and of its advantages and by pairing the class with existing classes in other disciplines. Currently one section of English 101 is being paired with Library 191 in an effort to determine the effectiveness of such an approach. **The task force recommends that efforts to develop and promote this class be increased in coming years.** In addition to its demonstrated value to student success, this class, with adequate support and resources from the college, could be developed into a program that would effectively address the need for an information competency requirement. As it seems likely that there will be such a need, it would be advantageous for Glendale to devote the necessary resources to a program in response.

Additionally, falling somewhere between the stand-alone and infusion models, Glendale College provides a workshop program offered through the library. This program consists of six different one-hour workshops, each addressing a different aspect of information competency. These workshops are offered on a rotating basis throughout the semester and are open to all students. The ability of these workshops to reach students has been significantly increased by the support of faculty from a wide variety of disciplines who have either required that students take a certain number of workshops over the course of the semester or offered extra credit for the same. Here again, internal studies indicate dramatically improved student success in classes which use workshops are a part of the required curriculum. (See attached.) While not providing the same level or continuity of instruction as LB191, the increased accessibility of the workshops is an important consideration. Additionally, the development and expansion of workshops

provides an opportunity for library faculty to experiment with different and more effective means of information competency instruction independent of a semester-long curricular structure. **The task force recommends that the workshop program receive funding from the college to continue its instructional program – previous funding has come in the form of grants from the state. In addition, the task force recommends that the program be expanded in order to develop more and more complete methods of instruction and that the infrastructure of this program be developed, in terms of equipment and personnel, in order to prepare for the eventuality of information literacy requirements.**

In recent years, an informal infusion program has developed as a result of collaboration between library faculty and individual instructors from a variety of disciplines. This collaboration has taken a number of forms but involves the development of research assignments, location of appropriate resources, and the instruction of students in research technique. Some of these efforts have involved the direct participation of library faculty while others have used library faculty for informational support only. While statistics are not yet available with regard to these efforts, individual faculty members involved in such collaborative projects have been enthusiastic. This infusion also has the advantage of increased consistency with regard to information competency skills because of the direct involvement of information specialists in the process. **The task force recommends that resources be allocated to allow this collaboration to continue and to develop a program involving a formal structure and established goals.**

Finally, as a college, we must address the question not only of educating our students but of responding to the needs of faculty to become information competent. Because this is a new field of study, we find ourselves in a unique position as to the impact that information competency or the lack of it has on our ability to provide effective instruction to our students. While we may have a great deal of specific knowledge in our fields and be skilled at imparting that knowledge in the classroom, we must also, in many cases, be able to help our students pursue knowledge and information outside the classroom, and be able to effectively design research assignments based on the resources available to our students. This requires that we have knowledge of and the ability to use those resources. We must, ourselves, explore the world of information into which we send our students. The reluctance of faculty to acknowledge this need is understandable. Some are unaware of the degree to which the world of information has changed; others are overwhelmed by the task of learning new skills. Unquestionably, the task of acquiring information competence is challenging on a number of levels, from a mastery of sophisticated electronic equipment to a knowledge of a vast array of information systems and sources. However, the necessity for competence is clear. Many of the challenges we face at this point with regard to providing effective information competency instruction, stem from a lack of ability on the part of faculty outside the information sciences to guide students through the research process. In particular, the

difficulty of implementing the selected infusion and general infusion models in terms of the unevenness of instruction are a direct result of the faculty's varying degrees of skill where information competency is concerned. The question then is not of the need to address this situation but of the method. Because it is difficult, if not impossible, to require that existing faculty seek the necessary training, and the specific needs may vary significantly from one faculty member to another, it seems best that requirements be addressed within the hiring process and that existing faculty be encouraged rather than required to seek competence. At Glendale, we have addressed faculty instruction primarily through staff development workshops for which faculty are credited flex-time. This is an effective avenue of instruction for information competency for faculty who already have a substantial understanding of the skills and subject matter as it is an ideal forum for review and discussion of new developments in the field. However, given the limitations of the scope of workshops, the forum is not suited to gaining the necessary foundation of knowledge to become information competent. This foundation requires a sustained and systematic investigation of the subject. In short, information competency, for those with limited exposure, requires that which only a class can provide. Given that the investment of time and effort necessary to successfully complete a class is substantial, the encouragement for faculty to undertake such a task must be equally substantial. The reward of flex time alone seems less than adequate. **Based on these factors, the task force recommends:**

- ➢ **That divisions be encouraged include in their list of desirable qualifications skills demonstrating a knowledge of information competency practice and theory and to consider these as an integral part of the hiring process for positions in which information competency skills would have substantial bearing on an instructor's ability to effectively serve his or her students.**
- ➢ **While the exact terms of evaluation and demonstration of skills should be determined by the divisions themselves, the Library and Information Competency Governance Committee would be available a resource to consult with divisions as necessary.**
- ➢ **That existing faculty be encouraged to seek instruction at the level necessary to achieve and maintain information competence.**
- ➢ **That the Senate encourage Staff Development to provide workshops to assist faculty to develop and maintain information competency skills.**
- ➢ **Additionally, appropriate faculty (those whose classes demand a knowledge of research practice and theory) should be offered the opportunity to enroll in a class that would provide the skills necessary to become information competent (LB191 or the equivalent at another institution).**
- ➢ **We feel as well that the college should offer sufficient encouragement for faculty to undertake such a project. This encouragement might take the**

form of released time or extra pay in the amount equal to the number of units of the class or similar incentives deemed appropriate by administration and governance.

<u>Oversight</u>

If anything, it is clear that further study as well as a locus for oversight and development of programs is necessary. The complexity of the issue as well as the complexity of implementing a response to the need for information competence require a centralized mechanism for both oversight and action. If we are to substantially address the question of information competence, faculty, administration, and governance must work together to create not a single solution but a network of solutions. Orchestrating this network, both in terms of an overall mission and the details of implementation, will require both broad participation and centralized focus. The existing governance structure at GCC provides for just such a mechanism, establishing committees that set, implement and oversee policy. Where information competency is concerned, such a committee exists in the form of the Library and Information Competency Committee. **The task force recommends that the existing Library and Information Competency Governance Committee be charged with the tasks of oversight and implementation of matters relating to information competence and that this committee work with administration, faculty, and governance to develop resources and address issues as they arise.**

In conclusion, it is the considered opinion of the task force that should the recommendations set forth in this report be followed, Glendale College will remain a leader in the development of information competency instruction, and, perhaps more importantly, we will be sufficiently prepared for any large-scale curricular adaptations necessitated by mandates from outside the college.

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**RESEARCH PROJECT ON INFORMATION COMPETENCY AT GLENDALE
COLLEGE
STATUS REPORT MARCH 2002**

In Spring 2000, Glendale College's Institutional Research Unit began a long-term study of the impact of the library's information competency classes and workshops. The study now includes data from Spring 2000, Fall 2000, Spring 2001, and Fall 2001. Results so far show a positive relationship between information competency instruction and student outcomes.

Between Spring 2000 and Fall 2001, approximately 100 students took Library 101 or Library 191, the credit courses in information competency. During the same period approximately 10,000 students attended a library workshop, and 3500 students received a library instruction as part of a class orientation.

LIBRARY WORKSHOPS AND STUDENT OUTCOMES IN ENGLISH & ESL
To evaluate the impact of the workshops, Institutional Research compared all students in ESL 151, English 120 and English 101 on the basis of both course retention and course success. Retention is defined as the percentage of students enrolled at census who received a grade other than W. Success is defined as the percentage of students enrolled at census who received a grade of A, B, C, or Credit. Statistical significance for these comparisons is determined by chi-squared tests.

Those students who participated in library workshops had significantly better course outcomes. These findings were statistically significant. For example:

In Spring 2000:
➢ ESL 151 students who took library workshops had a pass rate of 84.2%, compared with 48.7% for the ESL 151 students who did not take the workshops.
➢ For English 120, the pass rate was 70.3% versus 53.5%.
➢ For English 101 the pass rate was 74.2% versus 55.1%.
In Fall 2000:

1) ESL 151 students who took library workshops had a pass rate of 88% versus 68% for those who did not take the workshops.
2) English 120 students had a pass rate of 66% versus 57%.
1. In English 101 the pass rate was 81% versus 65%.

<u>In Spring 2001</u>:
3) ESL 151 students who took library workshops had a pass rate of 72% versus 64% for those who did not take the workshops.
4) English 120 students had a pass rate of 73% versus 54%.
5) In English 101 the pass rate was 71% versus 59%.

<u>In Fall 2001</u>:
6) ESL 151 students who took library workshops had a pass rate of 75% versus 56% for those who did not take the workshops.
7) English 120 students had a pass rate of 67% versus 49%.
2. In English 101 the pass rate was 77% versus 59%.

The Library workshops include Research Strategies, the Online Catalog, Journal and Newspaper Databases, Government Information, Beginning Internet Research and Intermediate Internet Research. Each is repeated at least once a week on a rotating schedule. There are also special workshops combined with self-paced research exercises as part of the PACE English 101 course.

LIBRARY 191 AND LIBRARY 101: INFORMATION COMPETENCY CREDIT COURSES
To evaluate the impact of these courses, Institutional Research used a matched-samples design. Students who took Library 191 were matched with a randomly selected control group of students who were comparable on a series of theoretically relevant measures (enrollment status, prior GPA, primary language, and units attempted). These two groups of students were then compared on a series of outcome measures, including semester GPA, units completed, and persistence to the next semester. Statistical significance was determined by a matched-pairs t-test.

The study showed a positive relationship between having taken Library 101 or Library 191 and GPA. In all cases the sample was too small to provide statistically significant results.

➢ In Spring 2000, Library 101 students had a semester GPA of 2.42 compared to 1.94 for the matched sample comparison group.

➢ In Fall 2000, Library 191 students had a semester GPA of 3.23 compared with 3.29 for the matched sample comparison group. However, the following semester, Spring 2001, their GPA was 2.20 compared with 1.81 for the matched sample.

> ➤ In Spring 2001, Library 191 students had a semester GPA of 3.03 compared to 2.60 for the matched sample comparison group, and their GPA the following Fall 2001 was 2.68 versus 2.17.

> ➤ In Fall 2001, Library 191 students had a semester GPA of 2.83 compared to 2.53 for the matched sample comparison group.

Library 191 is a one-unit introductory course in information competency involving lecture and lab. Library 101 is a two-unit intermediate course in information competency that requires a term paper. Both courses are transferable to the UC and CSU systems.

PAIRED AND INFUSED INFORMATION COMPETENCY MODELS

Under a new Fund for Instructional Improvement research grant, the research project will evaluate student outcomes for other models of information competency instruction – paired courses or learning communities and infusion in discipline courses -- in addition to the standalone and workshop models. Library 191 is being paired with discipline courses, beginning with English 101, and specialized information competency components are being developed for discipline courses, beginning with Nursing and History. Initial data regarding the impact of these models on student outcomes will be available after July 2002.

8) Nursing Science 200 and 217: in Winter Session 2002, a series of short information competency segments were included in NS 200 (Nursing Perspectives) and NS217 (LV/RN Bridge Course). This process is continuing in Spring 2002 for NS 210 (Fundamentals of Nursing). The goal is to build skill levels throughout the Nursing sequence.
9) History 136 (War History and Causes): three specialized orientations are being prepared for this course in Spring 2002.
10) Pairing Library 191 with other courses: In Spring 2002, one section of Library 191 is being offered as a paired course with a section of English 101. This means that students must concurrently take both courses. A large number of students from three other English 101 sections are concurrently taking another section of Library 191. This process of pairing will continue in Fall 2002.