

COMPUTER LITERACY AMONG COLLEGE OF EDUCATION FACULTY

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How often in the past year have you read or heard the following points made concerning the future of education:

The United States is rapidly moving from an industrial society into one dependent upon information and communication.

If tomorrow's citizen is to be able to use the knowledge and information available, skills must be developed that will expand the individual's capacity to reason and analyze.

A critical role in this new age will be the ability to use and understand the role of the computer. This ability will be as basic and necessary to a person's formal education as reading, writing, and mathematics.

It is the charge of the public school to insure that all citizens have equal access to computers.

The classroom teacher, therefore, must have the skills to use the computer as an instructional tool and the knowledge of how the computer is changing society.

Such statements appear regularly in many educational and computing journals. Hundreds of speeches are made concerning the need for computer literacy among teachers and students. But what about college of education faculty? Are they not the ones responsible for the training of both inservice and preservice teachers? They are, but where do they fit in the scheme of things? What can be done to assist these individuals as they enter the educational computer age? Answers to these questions provide the focus of this article. Before answering them, a definition of computer literacy needs to be established.

Computer Literacy: Educational Definition

A variety of definitions exist for computer literacy. Drawing upon several of these, the College of Education of the University of Minnesota has adopted the following definition. Computer literacy is:

the skills, knowledge, values and relationships that allow teachers to comfortably use the computer as an

instructional tool to prepare students to be productive citizens in a computer-oriented society.

If such teachers are to be trained, two important assumptions need to be accepted. First, such a broad understanding of computers as tools and their impact on society cannot be accomplished by simply adding another course to the curriculum. Such an approach has often been the downfall of too many colleges. For example, the important concepts of mainstreamed education are often taught in a special course with minimal carryover into specific methods courses. Consequently, the basics taught in the specific course are not applied in the actual teaching of content. If computers are to be used and studied in the elementary and secondary classrooms, a three-credit course taught by an expert will not be sufficient.

Second: If the first assumption is to be achieved, college of education faculty need to have the same computer-literacy skills that are expected of preservice and inservice teachers. How can faculty train teachers to do something if they do not model the specific behavior? College faculty often argue that they must model basic principles of good teaching. Few people would disagree with the statement — some might suggest that such modeling is often not the case and too many education faculty say "do what I say, not what I do!" — and thereby suggest that faculty must be computer literate.

If one accepts these basic assumptions, what can be done to assist faculty in becoming computer literate? In truth, there are a variety of things that all colleges of education can do that do not entail significant extra costs.

Developing Computer Literacy: An Example

Ask many college of education faculty what they think of when someone says "computer" and you get responses such as "mainframe," "number cruncher," "statistics," and, for some, "pain." For these faculty, the computer belongs to the statisticians and individuals who use flow-charts and write programs in strange languages such as

Fortran and Cobol. Other faculty are comfortable with SPSS and running the "big" computer but view the microcomputer as a toy that serious researchers really wouldn't want to use. For many methods instructors, the computer is something that faculty in instructional technology teach about in their courses. The microcomputer technology, however, has changed the world for all faculty. While some faculty think only of fruit when they hear the word "apple," most realize that it also means computer and computer means change in education. But, many are confused and somewhat scared of these rapid changes and what they mean for them.

The College of Education at the University of Minnesota has adopted a general strategy to increase the computer literacy of its faculty. The Dean, William Gardner, created a technology task force whose goals are to coordinate and foster computer literacy in the college for faculty and students. The task force is composed of faculty members from across the college and represent a variety of views about the role of computers in education. The task force has sponsored specific activities for the college and has reviewed the status of computer education in the college. It reports directly to the Dean and makes suggestions concerning future needs for the college.

In attempting to meet its charge of increasing computer literacy among faculty, the task force chose to follow the basic assumption: if a person is to adopt a new piece of technology, he must view this technology as meeting an important need in his professional life. If something helps one do a job better, the probability of using the technology increases. Using this assumption as a guidepost, the task force sought to provide additional education in three important areas related to faculty life — the writing of manuscripts and related class materials; the analysis of data as a result of research, and the teaching of instructional uses of the computer. One of the first all-college training sessions using the computer, then, focused on training faculty to use the computer as a word processor.

Writing is a difficult task for most. By using a word processor, a professor can edit, revise and update a manuscript with relative ease. If the writing process can be made easier, the productivity of a faculty member may increase — a hypothesis yet to be tested. A series of workshops for faculty interested in increasing their ability to write using a better method was sponsored. Workshops were run by our faculty and provided them with hands-on experiences using a popular word-processing system. The demand for repeated workshops has been great.

The next workshop focused on using the microcomputer to conduct research. Another faculty member conducted the session in which he explained how to link the microcomputer to the mainframe computer. The session,

although demanding more knowledge of the computer and of statistical analysis, was well attended and created more awareness about the potential of the computer. Because of these two workshops, some faculty members now have the ability to conduct data analysis and to write the final report while working in their office or home.

The final area of attention was that of instruction. The task force utilized the informal network of faculty members existing in the college to foster a better awareness of how to use the computer in the content area. Short sessions on using microcomputer filing systems and gradebooks were offered; however, most of the work was done informally through the sharing of materials purchased for specific content areas. For example, because of a close working relationship with the Minnesota Computing Consortium (MECC), software materials have been made available to the staff. The computer lab in the major classroom building for teacher instruction has been reserved for methods teachers to bring their classes into the lab. Because of these efforts, each of the content areas offering teacher certification now has a professor using the computer during the methods course.

An additional activity has been sponsored by the task force that has provided continued discussion throughout the year. An informal microcomputer group has been organized for the faculty. The group meets once a month during the lunch hour to discuss selected areas and to see demonstrations related to specific computer projects. For example, interactive videodiscs were demonstrated during one session, while at another a variety of new machines were available for faculty use. In addition, a field trip was taken to a local development firm to see how interactive computer programs were being created for training. The group has provided faculty with a forum for the discussion of relevant software and hardware. Simple and difficult questions may be asked during these sessions and someone will probably know the answer.

As a result of these activities, a significant number of faculty members in the college have increased their awareness of the sum of the potential of the computer as a tool in their lives. Several faculty have purchased computers and are actively using them in their work. Faculty and undergraduates have both benefited from these efforts which have cost a total of \$1,000 in financial support from the Dean's office. Of course, hundreds of hours of volunteer time have been contributed.

Where does all this leave the College of Education? In some ways, a significant distance down the road of increasing computer literacy among faculty. The task force chose to try to meet real faculty needs and to work with those faculty who showed a real interest in becoming



more aware. But, there are still some who feel the computer will go the way of the language lab, others who are still frightened by the machinery, and a very small number who still insist on using stone tablets because they have always done it that way!

What can be concluded from our activities as they relate to increasing computer literacy in other colleges? Several useful points may be offered.

Some Practical Suggestions

Increasing the computer literacy of the faculty need not take a large grant from some foundation, the state or the federal government. It will take commitment on the part of the administration and some faculty members. Here are some low-cost, high-commitment suggestions. They are based on the fact that microcomputers are available within the college for use by faculty and students. The number and type will vary; however, computers and computer labs are not cheap and require long-term financial and personnel support. Given the availability of a set number of computers, a college may increase faculty computer literacy by:

Having the support of the administration. This is not a new idea but it is critical to the success of any program. The chief administrator must support the various activities related to computer literacy or it will not succeed.

Establishing a committee or task force to guide activities. Action cannot take place without the guidance of someone or some committee. Committees are the bane of education but once again this committee is needed to keep things going. The committee should be short on meeting time and long on activities.

Training faculty to meet their own personal needs.

Conduct workshops that meet the needs of faculty. The three workshops described above are excellent places to start. Make these sessions as nonthreatening as possible. No faculty member wants to be embarrassed. Keep those bright computer whizzes from the undergraduate and the graduate student bodies away!

Forming an informal users' group. All this takes is someone to get the room and establish an agenda for the first several meetings. Someone in the college undoubtedly belongs to a similar group in the "outside" world. Use this person.

Working with the people who are interested. Go with the people who really are interested first. If you wait for everyone to get excited about using computers, nothing will get done.

These are really not profound suggestions because they do not need to be. Staff are available to train faculty. Use that staff. There must be someone within the college or department who will take charge and who has an interest not in just machines but in the content related to these machines. Why? Because colleges and divisions of education are not institutes of technology but are there to train teachers for a new society in which the knowledge of the computer will be critical.

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