Faculty Support Services: A Transformer between User Needs and a Changing Technology

Rosann Webb Collins

Academic Computer Center
University of North Carolina at Greensboro
Greensboro, NC

ABSTRACT

A faculty support center at any university must be both reactive and proactive if it is to effectively promote and support faculty use of microcomputers. The support service must provide training in and support of what may be termed "obvious applications": applications such as word processing which are useful to most faculty members. Those faculty which have expertise in the use of computers will request other types of support, such as individual consultation or provision of computing facilities.

In addition to these reactive services, successful end user support must serve as a proactive transformer between faculty and a rapidly changing technology. It is difficult to impossible for an individual faculty member to find out about or use new applications such as desktop publishing, computer tools for preparing slides and other instructional media, and the use new mass storage devices.

There are several strategies for supporting faculty use of new technology. First, the support service should be responsible for keeping up with technological change. This requires selecting from the vast array of new products those which both are appropriate to user needs and support institutional goals, such as improving instruction to students who are increasingly visually sophisticated. Second, demonstration hardware and/or software systems to support new applications must be acquired. Third, other faculty support services, which should be involved in a new application must be identified, educated and involved. And fourth, the large amount of information on these products and their use must be filtered into training materials and classes.

A faculty support center at any university must be both reactive and proactive if it is to effectively promote and support faculty use of microcomputers. The basic function of a faculty support service in any area of computing is to provide services requested by faculty. But in the area of microcomputer applications, there are many new innovations which can be most useful to faculty research and teaching, and these innovations may be unknown to most faculty. Bruner (1983) points out that power emerges from the ability to manipulate instruments, and that such ability is transmitted via education. If one of the roles of user services in a university is to

educate the educators, then that service must assure that the faculty can manipulate both established and newer computer tools.

REACTIVE FACULTY SUPPORT SERVICES

Faculty will request training and support in two main areas. First, they will ask about what may be termed "obvious applications": applications such as word processing which are both known and useful to many faculty members. For example, McHenry and Franklin (1986) designed a faculty training curriculum at Memphis State University which includes the following subjects: microcomputer components and functions, use of disk files, spreadsheets, data base management systems, word processing, BASIC programming, and selection of microcomputer systems. Second, some faculty will request support for less common and often more complex microcomputer applications or systems, such as the use of word processing for ancient Greek text or computer assisted design workstations. While the first type of support can center on training programs for groups of faculty from various disciplines, the latter support usually consists of individual consultation. This consultation ranges from assistance in the purchase of facilities to help in setting up and configuring their system to diagnosing problems when the system fails.

Providing these reactive support services as they are demanded is a challenging, multifaceted task. One cannot assume these services will be provided, even in quite sophisticated computing environments. Surprisingly, no faculty training was provided at Brown University as part of the first phase of the "Scholar's Workstation" project: William Shipp, Brown's associate provost for computing, identifies this lack as "one of the biggest problems we saw in talking to the departments ... We're actually sending people to Johnson and Wales College to take courses about computing, which is insane." (in Tucker 1983-4, p. 16) Not only are reactive services the foundation of the faculty support service, but the effectiveness of the reactive services can promote and validate the proactive services.

PROACTIVE FACULTY SUPPORT SERVICES

In addition to these reactive services, successful end user support must serve as a proactive transformer between faculty and a rapidly changing technology. It is difficult to impossible for an individual faculty member to find out about or use new applications such as desktop publishing, computer tools for preparing slides and other instructional media, and the use of new mass storage devices. These types of applications are difficult to implement, for while there is seemingly an avalanche of information in the microcomputer literature on some of these systems, the information tends to be general in nature. Finding out exactly what hardware and software is needed, how to configure it, and what additional types of expertise are required to operate the system may not be possible from reviews and other descriptions. Providing faculty a computing resource that is relatively new requires several strategies.

First, the support service staff should be responsible for keeping up with technological change and identifying those products which are appropriate to user needs and which support institutional goals. Keeping up with new microcomputer hardware and software products is a huge task, and no one person can hope to follow all developments. One approach is to assign various staff members a type of application/product with which they are most familiar. This segmentation is similar to how new books and materials are purchased in libraries: individual librarians are assigned part of the collection, such as mathematics or education, to develop.

Another tactic is to allocate staff time and resources for acquiring information. Essential sources of information on new products include the microcomputer journals such as InfoWorld and Byte, retail computer stores, report compendiums such as Data Sources and the DataPro Reports, exhibits at conferences, and in particular, people. In higher education, many new applications are mentioned first or only in discipline specific publications or conferences. For example, the Romance Language Department at the University of North Carolina at Greensboro identified the word processing program Note Bene, which is widely used for its ability to handle foreign language characters and is recommended by the Modern Language Association, at an MLA conference. The department head then asked the faculty support service to evaluate the package and to list hardware requirements and alternative systems. A network of computer aware faculty in various departments will serve as an excellent information resource; faculty input in this area should be solicited and encouraged.

Once products are identified they must be evaluated on the relative maturity or stability of the technology. While no piece of hardware or software which is used to good purpose can be thought of a mistake, some purchases are made before the products are standardized, made truly usable for the average faculty member, or significantly improved. While such purchases most often lead to "good learning experiences" for the user support staff, attempting to be on the cutting edge of too many developing applications can exhaust a staff already stretching to meet user demands.

The most important factor in new product selection should be to match the application with user needs and institutional goals. Some faculty will ask for information or advice on specific new products they see as useful for their work, as in the Note Bene example. More often the faculty support staff must maintain an inventory of the faculty research and teaching which can be matched against new product information. This unstructured and on-going task can be extremely rewarding when a match is successful: faculty are pleased, their work is enhanced in some way, and the faculty support service establishes or reinforces its image as a central resource of technological expertise.

Matching applications against institutional goals (such as improving instruction or retention of students) can be even more unstructured. Sometimes this kind of support can be achieved through a hidden agenda in the training on an application. For example, one of the broad institutional goals of the University of North Carolina at Greensboro is excellence in undergraduate instruction. A recent change which impacts this goal is in the learning styles of students, who are more visually literate (they are used to high quality graphic images) and who require visual as well as verbal instruction. The faculty training seminar on microcomputer tools for producing overhead transparencies was intentionally designed to support this broad institutional goal. The session focuses on how to design and use overhead transparencies to improve instruction and make it more visual, and then training moves to the use of programs such as MacDraw and Overhead Express.

A second strategy in providing proactive services is to provide demonstration hardware and/or software systems for the new applications. A microcomputer based desktop publishing system was made available for use and training at the University of North Carolina at Greensboro in early 1986. Since then it has been widely used as a resource, and two of the heaviest users, the Learning Resource Center and the Office of Continuing Education, have subsequently purchased their own systems for this application. As Plautus said, "seeing is believing".

A third strategy is to involve other faculty support services in new applications as it is appropriate. Several of the newer applications require not just the microcomputer facility and the ability to use the system, but some other skills or knowledge. Two examples which require skill

in design are computer assisted design and desktop publishing. While desktop publishing results in a camera ready text and graphic layout, the typeset quality of the output does not automatically result in a pleasing image. In fact the ease of changing type fonts, sizes, and styles can facilitate the untrained user's production of a very amateurish publication. At UNCG, the graphics design group was educated and involved in the desktop publishing project from its inception. The graphic artists combine their design and computer skills to produce high quality images for faculty quickly and without typesetting charges. This educational effort also served as professional development for the graphic artists, who are proud of their new computer skills.

The fourth strategy is at the heart of proactive faculty support: filtering the large amount of information on new technology into training materials and classes. In order to successfully involve faculty in a new application, one does not need to have or claim expertise with the new application. In Spring 1986 at UNCG, a seminar on PROLOG was advertised as an opportunity to "come learn with us"; the result was a dynamic interchange between the computer center staff and the faculty participants. The application those faculty had heard and read about was transformed into an experience with one implementation of the tool; that experience could then be expanded upon for future use, understanding, and integration into the curriculum.

CONCLUSION

The traditional types of reactive support services: training and consultation, are the foundation of faculty support in the use of microcomputers. But proactive services, which transform the mass of new and innovative microcomputer products into useful applications for faculty is both challenging and rewarding. Bruner (1983) says that "education is the sole agent of evolution". Faculty support services should be one of the agents of change: improving faculty awareness of and productivity with innovative microcomputer tools.

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