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ABSTRACT

To help new computer users, many college campuses are setting up computer support centers or programs for faculty and staff. Typical services include training, expert help with computing tasks, and assistance with more specialized projects such as instructional software development. This guide highlights some of the issues involved in the development of computer support centers. Training is the first thing most users need. Training faculty must be selected carefully to meet the needs of college faculty who are a critical but appreciative audience. Training needs and the curriculum for training must be carefully assessed. As faculty members become more skilled with word processing and desktop publishing, they will begin to use these tools to produce better materials for students, and ultimately to propose software development for specific purposes. The strategic and resource planning tasks needed to get the center underway are reviewed, and the costs to be expected are explored. Operating a successful support center will require regular and effective evaluation. A successful support center requires the following steps: (1) identifying needed services; (2) matching goals and resources; (3) planning to meet goals; (4) keeping track of progress; (5) paying attention to quality and details; and (6) putting the client first. (SLD)

Institute for Academic Technology

Faculty Support Centers

Mark P. Hale, Jr.

Second in a Series
Technology in Higher Education: Current Reflections
2

Implementing Computing Support Centers

Technology in Higher Education: Current Reflections

Implementing Computing Support Centers

By Mark P. Hale, Jr.
University of Florida

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FOREWORD

The University of Florida Faculty Support Center (FSC) exists to train faculty to use computers and to develop computer-enhanced instructional material. Services include group instruction, help with personal computing, technical consulting, help with software development, and consulting on hardware and software configuration and purchasing.

The FSC was established with the aid of a joint study contract with IBM Academic Information Systems. The goal was to create a prototype support center and training materials and to document the entire process so that other schools could benefit from the University's experience.

The Faculty Support Center has helped many people. At UF, there are 3,400 faculty and post-doctoral fellows, and 5,000 office workers. As of summer 1989, over 3,000 different faculty had visited the center. Hands-on training represented about half of the visits. In the past year, 1,344 lessons were offered for faculty and 922 for office staff.

The Faculty Support Center is jointly managed by two agencies: the Center for Instructional and Research Computing Activities (CIRCA), and the Office of Instructional Resources (OIR). CIRCA provides computer consulting and operates microcomputer and terminal labs for students and faculty. OIR helps teachers improve their teaching and operates the language lab, a tutoring center, and other teaching support facilities.

Many people from both agencies have contributed to the success of the Faculty Support Center. CIRCA technical staff provide hardware and software support to the Center. Many of the lessons have been developed and delivered by Fran Cruse, Cynthia Karle, Diane Nelson Roux, and David Cochrane of the CIRCA consulting staff. OIR has provided managerial experience and guidance as well as production of training materials. Dr. Katherine Steele, an associate director of OIR, produced the first policy and procedures manual and early lessons, and also trained the first manager of the FSC. Tom Cassarly, the manager from 1983 to 1988, established a helpful atmosphere that the faculty now regard as

their right. Dr. Wayne Wolfe supervised material development and packaging during the joint study, worked with faculty in software development projects, and continues to supervise the training activities and materials development for the center. Dr. Jeaninne Webb, the director of OIR, provided essential project management expertise in planning and organizing the center, and continues to keep our efforts focused on meeting the needs of faculty with excellent services.

What is a Computing Support Center?

When truckloads of microcomputers began to appear on campuses in the 1980s, a new breed of computer user emerged. The new users were in non-scientific disciplines, worked with text and images rather than numbers, and didn't want to learn technical details of computing. Some teachers also saw microcomputers as a new instructional medium for visual, interactive learning.

To help these new computer users, many campuses are setting up computing support centers or programs for faculty and staff. Typical services include training, expert help with computing tasks, and assistance with more specialized projects such as instructional software development. Depending on the needs and resources of the school, support programs vary from part-time efforts of one or two staff members using shared equipment to large programs with full-time staff and new facilities.

Benefits of a Computing Support Center

A computing support center is a productive place to get work done. Consultants can help users overcome initial fears and get around specific problems while trying new tasks. It is more efficient to learn new software through well-constructed lessons than to struggle with a manual and self-teaching materials. Having consultants nearby is comforting, particularly when trying something difficult.

A well-run support program can have a significant effect on faculty and staff morale. One University of Florida faculty member wrote that our Faculty Support Center was the best thing the University had done for him in 15 years. Of course, the hoped-for long-term benefit is instructional improvement, which is difficult to measure. At many campuses, faculty who participated in development programs continue to use computing in their courses. In some cases, major

changes in curriculum can be traced to the influence of support centers.

Support centers help set hardware and software standards. Faculty will adopt the computers and software for which training and support are available. As a result, there will be fewer kinds of hardware and software to support. Students and faculty across campus will share a common set of computing tools rather than a hodgepodge of incompatible environments.

Essential Roles for Computing Support Centers

Most support centers offer some mixture of three kinds of help:

- training in computer use,
- help with specific computing tasks, and
- support of instructional software development.

Support Center Services

Training is the first thing most users need. Most training programs start with introductions to microcomputer packages such as word processors, spreadsheets, graphics packages, and data analysis packages. Electronic mail and specific programs such as on-line library catalogs or student records are common subjects for mainframe lessons.

A training program has several specific needs:

- appropriate curriculum and training materials,
- a training room with uniform, reliable equipment,
- well-prepared trainers, and
- procedures to assure quality.

Training can be provided for faculty, support staff, students, or any combination. It can be a free service or offered at low cost to recover some expenses. Training for the local

community is also much in demand and might be an appropriate activity.

Once they are trained, users need a workroom where they can try specific computing tasks with expert help close at hand. Most of the work involves producing documents or working with data files. Users need help with fancy formatting and printing and creating manuscripts and papers with graphics and text. They will want to transfer data from one computer to another, one diskette format to another, or one program to another. Effective workroom consulting requires appropriate equipment, reference materials, and skilled consultants.

Helping faculty use or develop instructional software is difficult. Interactive computing is a new teaching medium, combining visual values of television and traditional instructional ideas. Faculty members are usually unfamiliar with the capabilities, standards, and production methods of the medium. They are experts on the subjects they teach but will need help on design, implementation, testing, improvement, and documentation of software. They might not be familiar with much instructional software, even in their own field. Many are new to computing or at least to instructional computing. The support center might have to provide equipment, basic software, reference materials, examples, production support, consulting, programming assistance, and help getting software into student labs.

Training Faculty

Faculty like to teach but aren't used to being taught. They are a critical but appreciative audience. Most are goal oriented, so training should be relevant to their goals. They are busy; training must be brief enough for them to attend, and good enough to justify coming back. Faculty are independent learners, so training to exhaustion is not necessary. However, many are technically timid, don't like abstract technical nonsense, and don't want to learn computer science just to write a memo.

Successful lessons for such an audience are highly interactive and down to earth. Don't lecture — get to the keyboard

doing something as soon in the lesson as possible. Show meaningful examples of what a new command does before teaching it. Explain the theory afterwards, if at all.

Office workers and students can take the same lessons used for the faculty. Some examples should probably be changed. (Students rarely get to make up grade reports, for instance.) Larger training programs tend to separate faculty, staff, and students into different classes. Faculty are happiest when not competing with secretaries or students, who might learn faster and type better.

Two hours is a reasonable length for a lesson. In a two-hour lesson, you can completely cover such simple tasks as editing, printing, and saving a letter or spreadsheet, without exhausting the trainer and class. Some centers report that they conduct training in all-day marathon sessions with success. Such sessions are harder to schedule during the academic term but might be effective for a special audience such as faculty attending a departmental retreat.

Since training is offered in short individual modules that might be taken a long time apart, it helps your audience if your materials are consistent from lesson to lesson and presentation to presentation. At the FSC, we have devoted a lot of energy to making lesson style and layout similar, even across different topics. This minimizes the trainees' effort: they know what to expect from our handouts and lecture style, so they can concentrate on the ideas being presented. Consistency is hard to achieve with commercial materials from different sources. Unless they are produced by a single publisher, lessons are likely to differ in style and notation.

Effective Training

Training is not the same as teaching. In most computer training programs, the audience is only available for training a few hours on a given subject. There is no time to improvise, wander, or investigate unplanned topics, as there would be in a semester of teaching. Training is more like theater than typical teaching. The trainer's explanations should be outlined in detail or even scripted, not improvised. Theoretical material and long lecture segments are almost never appropriate or popular in a training lesson. Look for materials that

use good concrete instances of appropriate tasks for the audience. It helps keep training consistent if the materials guide the trainer rather strictly, so that there is little temptation or opportunity to invent topics to cover.

During training sessions there should be assistants to keep trainees on track. The assistants watch from the back of the room. When someone gets lost, the assistants slip over and help without disrupting the rest of the group.

Curriculum for Training

Trainers from many campuses, large and small, offer the same basic classes. Many faculty need a simple introduction to the microcomputer, one that shows simple examples of important programs. The FSC introduction includes word processing, a spreadsheet, a database, and a sample of color graphics. The tone is reassuring: computers are useful and won't break when you use them. Word processing is overwhelmingly the most popular subject, since most faculty produce text as a main part of their daily work. There is interest in beginning and advanced word processing and lesser but intense interest in desktop publishing and complex document production. Many people want to master fonts and laser printing. Spreadsheets are widely used for simple manipulation of numerical data. More sophisticated analysis requires a statistical package such as *SAS* or *SPSS*. There appears to be less general interest in databases, except for departmental office applications such as mailing lists. Graphics packages that produce handsome graphs and charts of data are a form of document and presentation development that interest some. Few faculty members start out by taking a DOS lesson. The need for operating system training arises after experience and frustration. Most DOS students have already been working with a word processor or some other program and have reached the point where they need help managing their files.

Mainframe training on campuses connected to networks often starts with introductions to using the mail system, BITNET, and the Internet. Some faculty need help even with simple applications such as library catalogs or student advising systems. Statistical analysis courses will attract fac-

ulty on research intensive campuses. Few faculty members are interested in learning programming languages.

Training Materials

A complete training package should include handout notes for the audience, showing all the content covered. These should match the overhead transparencies used by the trainer and show what the audience will see on their screens. Suggested exercises might be part of the lesson. The trainer's materials will include transparency masters, an outline or script, and details on sample files and special software installation instructions, if needed.

Commercial training materials can turn out to be inappropriate for faculty audiences. There is a tendency, particularly in word processing training, to include a lot of mere typing. (One word processing lesson we examined began with instructions to type a one-page letter. It makes more sense to load the file containing the letter, and go from there.) When adapting commercial materials, choose replacement examples taken from real faculty or academic staff settings. Good examples include recommendation letters, student grades and other academic records, simple budgets for equipment and student help, and additional everyday examples.

Consulting and Workroom Help

A center should provide a workroom where clients can work on their own projects and get help from consultants. Most workroom questions are about text production. Topics include advanced word processing features related to text formatting, laser printing, and graphics output. File transfer and media conversion are the next most common problem. If mainframe access is supported, questions about mainframe electronic mail and system problems will show up, along with difficulties in moving data between the mainframe and microcomputers. Users are often converting from old packages to new ones and trying to move their documents and data with them. Users might request specific training on arcane system or product commands. Questions about unfamiliar parts of a familiar program, such as data import,

graphics in a spreadsheet, or use of columns or graphics in a word processor are common. Printing has its own set of difficulties: installing printer drivers and adjusting to differences between home, office, and workroom printers.

Workroom consulting differs from traditional computer "help desk" consulting in several ways. Interpersonal skills can be more important than technical skills. Helping beginners requires tact and the ability to think of and explain simple conceptual solutions to problems. Consultants often provide tutoring rather than answers, since the goal is always to make the users independent. Users often camp out in the workroom until their project is finished. A consultant might be tempted to just step in and do the client's work (and the client might not mind). Try not to.

A new support center is likely to compete with existing sources of consulting, particularly on big campuses. Lots of effort and coordination will be required to keep advice consistent and avoid presenting clients with a more confusing consulting environment.

The best consultants are programmers who like to work with people. (Not all programmers qualify.) What traditional programming they get to do will be in support of users' problems: writing batch files and small utilities, installing and learning new software, and figuring out documentation and software bugs. Students can consult, if they are carefully selected and trained. Interview first for personality, but you must expect to develop their technical skills. All workroom consultants should be trained. It is best to organize technical training on paper so that you can keep track of who has learned which skills.

The workroom consultants can also support software development projects and be called on to give advice on configuring and purchasing microcomputers. This is specialized consulting and belongs in an office, by appointment.

Supporting Use and Development of Instructional Software

As teachers become skilled with word processing and desktop publishing, they will use these tools to produce bet-

ter lecture notes and student handouts. This will probably be the most widespread way that faculty computing affects instruction. However, a small but significant group of faculty will want to use computing in more ambitious ways to improve teaching.

Instructional Strategies

Faculty should be encouraged to start with simple projects that will improve instruction with relatively little effort. The simplest, most productive strategy is to adapt generic software tools for instruction. Exercises and classroom demonstrations are easy to create with spreadsheets and databases. Commercial publishers in business, engineering, and other disciplines are beginning to provide such materials with many texts. Presentation aids and graphics packages can be used to prepare effective lecture materials rapidly.

Specialized software packages such as graphic design programs, project managers, bibliographic and database search programs have become professional standards in some disciplines. In such cases, a common strategy is to provide all faculty and students with these tools and to base assignments on using them as a matter of course.

English and foreign language departments are beginning to teach with writing aids such as grammar checkers and networked group writing programs. Many academic tools, such as test generators and drill and practice packages, have appeared.

Faculty on many campuses have developed courseware, i.e., programs that address specific instructional problems. A number of universities participated in large instructional software development projects sponsored by IBM and other computer companies. The programs produced are often available at little or no cost from the authors, through professional societies, or from clearinghouses such as WiscWare. A few have also been published commercially. Databases such as ISAAC and TASL can be used to locate packages for specific interests.

Support Center Services for Instruction

A center can best support instructional innovation by providing the following: resources faculty can't get otherwise, advice and assistance on adapting software, and support and recognition for faculty who try to improve their teaching.

Begin by collecting examples of instructional software from other campuses. This will help local faculty understand what might be practical to attempt. If center staff members keep up with developments in instructional computing, they can help locate pre-existing software for specific purposes and avoid reinventing the wheel.

Many centers distribute enabling grants or loans of software, hardware, or money to buy release time so that a faculty member can pursue instructional development. The center can also provide consulting in project design and programming.

Once software is found or developed, it must be made available. The center might also help license and purchase software and can help install it in student labs. Some campuses have installed special computer classrooms with projection equipment to show a computer demonstration, classrooms where a group of students can receive hands-on instruction, or portable display setups that can be taken to any regular classroom.

Faculty engaged in instructional computing often feel that their institutions do not support or appreciate their efforts. A support center can help dispel such feelings by providing encouragement and recognition. Brown-bag lunches, demonstrations, and workshops on instructional software can provide contact between faculty in different departments who are working on instructional projects.

Software Development

If no appropriate materials can be found or adapted, faculty members might propose developing software from scratch. Before undertaking such efforts, they should understand that interactive computing is a complex endeavor. It is harder to write good instructional programs than good texts. Current software development tools such as

authoring languages are either difficult to work with, limited in results, or both. Team production, with faculty member, programmer, and instructional designer working together, is too expensive to sustain on non-subsidized projects. Most successful original programming projects are testaments to the dedication of one or two people who used several years of weekends to produce one instructional episode.

Since it is so expensive, original courseware should be aimed where it can do the most good. Two productive strategies were identified in a recent study of software development projects sponsored by FIPSE grants: produce tools of general value in one or several disciplines, or attack a particular instructional bottleneck.

Supporting development places additional responsibilities on a center. Center staff might help deisgn software, manage projects, supervise programmers, and maintain standards for good documentation.

Planning

If you just open your doors and announce a new program, you might find that people expect services you cannot deliver or that you cannot afford the services you have announced. Two kinds of planning are needed: strategic planning to decide what your center should do, and resource planning to determine whether you can afford your aspirations.

Strategic Planning

There are six important steps in strategic planning for a new support center:

- assess needs,
- write a mission statement,
- determine services,
- identify supported computing hardware, software, and services,
- develop policies and procedures, and

- choose measures for evaluation of the program.

Meet needs, don't invent them. Don't do what you think is good for the audience; ask them what they want. You must also pay attention to the goals of the central administration for your project. Sources of information can include questionnaires, surveys, samples, interviews, and advice gleaned from consulting logs.

Any support program will benefit from an explicit mission statement. The statement should be understandable by anyone who reads it. In no more than a page, it should explain whom the center will serve, how, and why. In saying how, it should be specific about your services and set priorities. Your statement will be used to separate appropriate from inappropriate activities and to keep the center on track. You might want to compare it to the mission of other related support agencies to see how it is similar or is different.

Determine services. From the needs you have identified and the mission you have chosen, you will be able to determine what services are essential, desirable, optional, or unnecessary. Defining services should include estimating how much service will be needed, and defining what limitations you will impose.

Most campuses have more kinds of computing activity than one center can support. Identify in writing what hardware, operating systems, and application programs you intend to support. It is useful to identify what kinds of support are planned for each item. Will you provide training, consulting, access, and purchase information?

As you plan the center, you will make many decisions about what policies and procedures to follow. These should be written down. The resulting manual will become your most valuable reference. It should contain the mission statement, a definition of services to be provided, description of the roles of the people involved in the center, and statements of all policies and procedures. The FSC's policy and procedures manual is about 90 pages long. It is useful to anyone (including the FSC staff) who wants to know how the center is intended to work.

To evaluate the center's effectiveness, gather appropriate

data. Decide beforehand what information you need and collect data from the beginning. Data can't be reconstructed later. Analyzing the data will provide information needed to improve daily operation and to plan for the future.

Resource Planning

Resource planning is an iterative process. Start with some idea of what minimum and maximum resources are. Use that to pare down your list of proposed services to an affordable level, and then make a better budget approximation. You will need to plan for staff, facilities, equipment, and the resulting costs.

Staff

Since programs will vary w dely in scope and resources, we can only identify roles that might need filling. Some of the roles are manager, consultant, trainer, clerk, receptionist, and instructional design consultant. The number of people needed to fill these roles depends on the number of your clients. Outside help might include accounting, graphics, engineering, and repair services

In a large center, a full-time manager will be required. Our current manager was formerly a school librarian. She doesn't have time to be both manager and consultant, a common mixture in smaller programs.

The computer consultants should be fairly experienced computer analysts who enjoy working with people. Trainers can be computer consultants, graduate students, or other people associated with the center. Not much technical knowledge is required, except when delivering mainframe lessons where recovery from user errors or system glitches can be harder.

Student assistants can answer the phone, greet clients, and handle routine preparations for lessons. With some technical training and some coaching on dealing with faculty, they can also assist during lessons and in the workroom. Student consultants like to spend time learning new software if you let them. In so doing, their technical skills will

develop rapidly. They need guidance and supervision to make sure they learn the skills the center needs.

A center that supports development of instructional materials will need help from an instructional designer. The designer provides knowledge of how effective teaching materials are put together and awareness of instructional software in other disciplines. Few computer consultants have the required experience to play this role effectively.

Facilities and Equipment

Space is always hard to come by on campuses. A support center will function best in its own properly prepared space, but not every school can afford this. All the functions of a support center can be supplied using only labs and offices shared with other campus activities. Equipment used in a support center should be similar to equipment available in campus labs and offices, or the training and support will be irrelevant.

Training requires an appropriately equipped private or shared computer classroom. This means enough identical workstations with matching software must be available for the trainees along with appropriate presentation equipment for the trainer. Tables should be big enough to let trainees spread out notes comfortably. A table less than four feet wide is rather cramped for a microcomputer with printer. Tables five feet wide can accommodate two people per computer, in a pinch. The room should have adjustable lighting and be cool and quiet enough for trainers to be heard.

It is difficult to train more than 20 in a group, even with two helpers in the room. A classroom for 20 requires about 1,400 square feet, a common size on many campuses. A smaller room means training is less efficient; more sessions must be offered to serve the same number of people.

Computers used for training need enough speed, memory, and storage to run lesson software effectively. Since word processing is the most common training topic, printers must be provided. They could be shared through switchboxes or a network. The center should have a spare workstation so that no one is turned away because of a malfunctioning machine.

If your center will teach classes on mainframe use, your

microcomputers should be attached to the host in whatever way is standard, most common, or most recommended for your campus. (These three choices might conflict.) It is likely that the center will be better connected to the mainframe than most faculty offices, so this is a chance to demonstrate a preferred communications arrangement.

The trainer will need a way to show screen dumps and instructions to the class. A short-throw overhead projector and a screen for showing transparencies is the simplest alternative. Some trainers use video projectors, multiple computer monitors, or liquid crystal displays with overhead projectors. Some centers are experimenting with networks for this purpose.

Ideally, the workroom should be adjacent to the training area and have its own equipment. Allow more space per station in a workroom so that two people can sit comfortably at each station and spread out their work. Workrooms need storage cabinets, shelves, and magazine racks. Private office space where consultants can meet with clients by appointment is also desirable when services include extended consulting. In small programs, the training room might have to double as the workroom. Some additional equipment such as laser printers will still be needed.

Use your best equipment in the workroom. This makes it an efficient and attractive place to work. Your computers will need as much memory as possible, big hard disks, network links, good printers, and lots of software. To support advanced work on documents, you will need image scanners with text recognition and graphics software, and laser printers with many fonts. Users will also want software and hardware to convert files between different diskette and document formats. Color printers, plotters, and slide-making equipment are used in some centers.

The manager will need some office space private enough to meet with clients or employees. A reception area where people check in as they arrive for training or to use the workroom is needed. To help get technical work done, find private staff workspace away from the center.

Some renovation or remodelling might be needed. Space preparation requires attention to floor covering, ceiling and

lights, walls, doors, windows, locks and security, power, air conditioning and heating, and noise level. Utilities that serve the center also figure in space plans. These include power and cooling, phone, data service, security, copier, mail and package service, vehicle, technical assistance, repair, construction and renovation. A room for a large computer requires special cooling, power distribution, and communications links. Designing a room for a larger computer is specialized work. Call on your campus computer center and the vendor's marketing team for help.

Costs

There are one-time, periodic, and annual costs to consider. The one-time costs are space and authorization to hire full-time employees of the program. Equipment and software are both periodic costs, since most computer hardware and software lasts for two to four years. Annual costs includes operating expenses for services, materials, and salaries for students and other employees paid from annual operating funds.

Equipment won't wear out; it just gets too far behind current standards to be worth using or becomes too limited for newer software. A microcomputer in a training room is useful for about three or four years. The first microcomputers at the FSC were PC/1s with dual diskette drives. We upgraded once to add hard disks and then again to add faster processors and better graphics displays. Computers for a training room should be similar to those the trainees are likely to find in their offices or labs, neither the newest nor the oldest machines on campus. Use your newest and fastest computers for consulting and in the workroom. Workroom computers will have to be replaced more often than those in the training room.

Software needs replacing when new versions come out or when the new standards appear approximately every year or two. (Keep a few copies of old software so you can consult with people who refuse to learn newer versions.) Software costs for twenty training microcomputers can be kept to $500 each by buying limited-function student editions and using quantity discounts. In the workroom, expect to spend

significantly more, perhaps as much for software as for hardware.

Annual costs include salaries, computer supplies and repair, and administrative expenses. We pay student clerks minimum wage, and a little more for student assistants. The main supplies are paper, ribbons, laser toner cartridges, and diskettes. Copying lesson materials and printing schedule announcements are a big part of the budget.

Many training programs charge at least enough to pay for training materials and wages of the trainer and student assistants. When a center is used for special events such as private training for a particular department, customers are not surprised to be asked to pay a fee. It might be possible to hold special training days, community education programs, or "leisure courses" for students and faculty spouses. Costs for this kind of training will be lower than standard commercial training programs.

Operating a Successful Support Center

There is only one sure formula for running a successful service agency—pay attention to business. Worry about meeting your clients' needs and your institution's goals. Successful operation requires continual planning and evaluation. The manager is the most important person in your center. Our manager has ultimate responsibility for providing good service. She coordinates all activities, supervises the staff, acts as host to clients, provides answers to policy questions, and keeps the records of center activities. In small programs, the manager is frequently the main trainer and consultant as well.

The manager's main daily duties are to see that training materials are ready for each lesson, that client reservations and records are maintained properly, and that problems with hardware or software get fixed. Publicity for lessons and communication with clients over policy questions also take up much time.

No manager should have to run a support program alone.

A policy board of people not involved in the daily operation should meet with the manager regularly. The board represents the interests of the faculty and the rest of the institution. This protects the program from focusing exclusively on the problems of the day or from making choices that are easy to live with but offer poor service to the clients. At the FSC, six people meet weekly as a policy board to discuss both current and long-term questions: the manager; the directors of the two parent agencies; and the staff members responsible for supervising training, consulting, and system support. Our manager maintains the policies and procedures manual for the board.

Operating within established policies, procedures, and practices is an important part of quality control. Having written policies and procedures means that there is no question how things should be done. In a large program, written plans are essential. When new situations arise, having well-documented policies simplifies making new decisions. It also removes the influence of personal feelings and personalities.

Ongoing planning is a major concern. Talk with your clients regularly to find out what changes they want in your program. We use surveys of users and non-users to assess changing needs. Each year or academic term, write down a description in one or two pages of any changes planned in services or activities. Since it takes time to make changes, you might lose sight of your goals because of daily preoccupations unless you have written them down.

Evaluation

The simplest way to evaluate your center is to keep track of what happens there. Faculty vote with their feet. Counts of the number of people attending each lesson session and the number of visits to the center will help determine which lessons are good and which aren't, and whether the center is meeting its goals. Keeping track of what software users ask for helps make purchase decisions. Networks and mainframes can record individual uses of each program. User surveys once a semester can also provide useful data.

Training lessons and trainers' performance should be evaluated regularly. New lessons and new trainers should be evaluated at each performance, until results are uniformly good. Student consultants should receive a formal evaluation once a semester.

Once or twice a year, the policy board of the FSC reexamines the policy and procedures manual to see whether we are following our own rules, and to see what conditions have changed or new situations have arisen. This is a long-term evaluation which reinforces the value of the manual.

Closing

In the final analysis, the formula set out here is obviously the basis for most successful service organizations:

- identify needed services you can provide,
- match your goals to available resources,
- plan thoroughly to meet your goals,
- keep track of what you are doing to stay on course,
- pay fanatical attention to quality and details, and
- always put the client first

If you can do most of this, your computing support program will be successful.

About the Author

Mark P. Hale, Jr. has over 20 year's experience in academic computing. He has developed computer-based instruction and testing packages in mathematics. Dr. Hale has a BA in mathematics from Harvard College and MS and Ph.D. degrees in mathematics from the University of Illinois. He has been a faculty member in the University of Florida's Department of Mathematics since 1970. In 1981, he become the director of the Center for Instructional and Research Computing Activities, the principal campus agency responsible for supporting faculty and student computing. He has been one of the co-directors of the UF Faculty Support Center for Computing since its inception in 1983.

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