Consulting Behaviors
and the Role of Computer Consultants
in Student Learning and Anxiety

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SUMMARY. As computer applications are added to social work, educators are increasingly likely to encounter computer anxiety. This form of anxiety has been well-documented in the literature, including warnings that students attracted to fields that are "people professions" such as social work may be especially prone to problems.

This qualitative study used a naturalistic approach to observe and describe the behaviors and activities of computer consultants that seemed to have an effect on student anxiety. Analysis of the results indicated that some behaviors of consultants may actually have increased student feel-

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ings of anxiety and uncertainty, while others appeared to be quite helpful. *[Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <docdelivery@haworthpress.com> Website: <http://www.HaworthPress.com> © 2005 by The Haworth Press, Inc. All rights reserved.]*

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Social work educators wishing to incorporate computer technology into their courses are often caught on the horns of a dilemma. Some students have considerable knowledge and skill at using computers while others have little, and lack access to computers in either their homes or jobs. To compound the problem, many students are resistant or anxious about using computers. The purpose of this study was to explore and describe the behaviors of computer consultants as they helped students solve computing problems. The focus was on discovering which behaviors seemed most or least helpful in alleviating computer anxiety.

COMPUTER ANXIETY

Computer anxiety is an established phenomenon that has been well-documented in literature reviews by Cambre and Cook (1985), and Mauer (1994). It may be particularly widespread among students in social work. Finn (1990) has suggested a desire to avoid machines and technology may well be one of the reasons students choose a "people profession" like social work. While not all students are anxious about learning that relies heavily on the use of computers, unevenness in their abilities can have disastrous consequences for overall group learning and the quality of the group-dynamics in the classroom (Latting, 1994). Learning for all students is likely to be enhanced if students receive computer instruction in ways that ameliorate rather than exacerbate their fears.

Computer anxiety, which is a situational form of anxiety, is manifested in some people when they are expected to use computers in their work and learning. Feelings of inadequacy and anxiety, particularly among new users, have been discussed often in the literature (Cambre & Cook, 1985; Mauer, 1994). Although there has been little formal research in the

area (Cambre & Cook, 1985; Fisher, 1986; Herkimer, 1985), most empirical studies found that computer anxiety was associated with a lack of direct experience with computers (Mauer, 1994, p. 370).

Mauer (1994) also notes that attempts to reduce this form of situational anxiety by increasing student exposure to computers have produced only mixed results. Similar attempts to change the attitudes of social work students, particularly in cases where they were somewhat resistant, have also produced mixed results (Finnegan & Ivanoff, 1991; Monnickendam & Eaglstein, 1993). Such efforts are based on the assumption that if computer use is increased, the level of anxiety will decrease. Mauer (1994), however, suggests a different hypothesis, namely that a lack of anxiety about computers may be responsible for increased levels of use and experience, rather than the reverse. For many students it may be necessary to alleviate their computer anxiety *first* in order for them to acquire more experiences in which they use computers. It has also been suggested that for students who are particularly resistant to using computers, worthless or unpleasant computer training experiences may actually contribute to greater resistance in the future (Monnickendam & Eaglstein, 1993).

This suggests that *the way* students are exposed to computers may be very important in forming the kind of positive experiences that lead to future computer use. In particular, social work educators may need to help students reduce their anxiety levels in order for them to take full advantage of opportunities to learn about and use computer technology.

At present, almost all research on computer anxiety has focused on the particular personal characteristics of computer-anxious individuals (Cambre & Cook, 1985; Mauer, 1994). As previously noted, however, the most common characteristic, lack of computer experience, turns out to be problematic since no causal connection has been established between levels of computer experience and reduced or heightened computer anxiety.

With few exceptions studies have tended to ignore various other environmental factors that might lead to computer anxiety. However, it is reasonable to posit that environmental factors such as the behavior of educators and consultants, have an effect on computer anxiety and on students' subsequent development as computer users (Rosen & Weil, 1995). If behaviors which reduce student anxiety can be identified, innovative approaches that foster students' acquisition of computer knowledge might be developed. To date, however, there have been no reports of research that explored or described factors related to the behaviors of com-

puter instructors and consultants. Such studies are needed particularly in light of findings suggesting that students' personal characteristics are not the principal problem (Mauer, 1994, p. 374).

COMPUTER CONSULTANTS

Most universities and many schools of social work employ computer consultants to help faculty and students who encounter problems. It may in fact be tempting to turn over some aspects of training and support to consultants. Good consultants are able to intervene and help faculty, students and administrators with problems as they are happening. Unlike instructional staff, consultants are expected to be flexible and able to work with a broad range of people and problems on an "as needed" basis. This can be very efficient in that consultation concentrates knowledge resources where they are most needed for solving and remediation of problems. Moreover, reliance on consultants may be an attractive option for administrators of social work units since they are usually provided and readily available to all faculty and students in public user areas and computer support departments within their universities, at minimal or no direct expense to the unit.

Computer consultants are important to the process of computerization (Flynn, 1994; Hernandez & Leung, 1990; Visser, 1995). Faculty as well as students may well need to rely on the expertise of consultants when they have problems. Access to high-quality consultation may in fact be a necessary condition for widespread technology integration in the social work curriculum. Not all faculty are as knowledgeable about computers as they would like to be. Even those faculty who are positively inclined toward integrating computer technology into their courses may be reluctant to do so if they believe that they are "on their own" if problems arise (Visser, 1995, p. 107).

Finding a consultant with the right expertise and the ability to convey it to others, is often problematic. In part, this is because computer technology changes so quickly that it is only possible for any one person to keep up with a *part* of the developments in the industry. Any mastery that a consultant develops today will be obsolete knowledge by tomorrow. Moreover, no single consultant is likely to possess all the knowledge necessary to advise faculty and administrators on every aspect of computing. This has been put humorously in the form of a riddle:

> **Question:** How many software consultants does it take to screw in a light bulb?
>
> **Answer:** I am sorry, but that is a *hardware* question, you will need to take that problem to a hardware consultant.

Another potential problem is that computer consultants are typically chosen for their knowledge of *computers*, and not for their *user-friendliness*–or a demonstrated ability to convey what they know to others. Users rarely complain about the knowledge of their consultant, but it is very common to hear complaints when consultants do not address users' basic uncertainties and anxieties (Kreuger, 1988). Such uncomfortable feelings can only be magnified when users feel the added pressure of not being able to complete their assignments until the computer question or problem is resolved. It stands to reason that the quality of instruction and assistance that students receive from such consultants and support staff will be of critical importance in school and faculty efforts to integrate this technology into courses.

In spite of the fact that most computer users have had to interact with computer consultants at some point, surprisingly little is known about the nature of these interactions. Consultants have a difficult role to perform. They need to translate complex technical processes at which they are proficient, into simple terms that a lay person can understand. This is often complicated by computer anxiety on the part of the user. It stands to reason that some will have evolved techniques for helping anxious clients. In either case the behavioral styles of consultants have seldom been studied. The primary question that this study sought to address was, what behaviors appear most effective in alleviating users' computer anxiety?

SETTING AND APPROACH

This study utilized a naturalistic observation approach as described by Patton (1987) and Strauss (1987). Computer consultants were observed in a busy, multi-user computer area in a major university. This setting was particularly advantageous for the purpose of making observations since many interactions with a variety of consultants could be easily observed and documented without attracting attention. Moreover, it was felt that computer consultants in such areas would encounter a range of computer anxiety on the part of their clients, and therefore

might have developed a repertoire of strategies and techniques for deal-ing with such feelings.

The study observations were made in an effort to identify the consult-ing behaviors and especially those that seemed most effective in dealing with anxious students and faculty (hereafter referred to as "clients"). The intent was to identify those techniques used by consultants that seemed to be (1) most or (2) least helpful in reducing learners' anxiety. As we began the process of observations, we discovered that it was also important to note whether consultants actually resolved the specific, tangible problems that users presented. No matter how kindly or pa-tiently consultants behaved, their value is questionable if they do not also effectively answer a client's questions.

CONSULTING PROCESSES

Seven consulting processes were identified and described as means of characterizing the behavior of the consultants in their interactions with clients. These processes, which are more fully described below, were labeled *talking, showing, explaining, fudging, documenting, refer-ring,* and *consulting*. They are briefly described and listed along with outcomes in Table 1. It should be noted that some of the behaviors em-ployed by consultants actually seemed to have outcomes quite opposite to what was intended: they seemed to increase the learner's anxiety and uncertainty.

Talking

Talking was the most common process used by consultants. In con-sultations involving *talking* the consultant would either direct the client to do something, make a statement of fact, or direct a series of questions toward clients. This appeared to mitigate anxiety and uncertainty in those instances when clients seemed to have relatively good knowledge about what they were attempting to do and only needed a prompt or an affirmation. For example, a consultant told a client "Bring up your data set." In this particular context her comment evoked a smile and a sense of relief, since the client already knew what a data set was and how to "bring it up." In another similar instance a client asked the consultant how to get rid of a file. The consultant replied with the words: "You put it in the trash can," referring to the small picture of a "trash can" in the corner of the screen. Again, this answer apparently reduced the uncer-

TABLE 1. Consulting Behaviors

Behavior	Definition	Change in Anxiety
Talking	Commands or questions directed toward clients or statements of fact made by the consultant	Mixed changes depending on the knowledge level of the client
Showing	Consultant goes step-by-step through the procedure with the client.	Uncertain
Explaining	Given reasons for going through a particular task or process	Reductions in anxiety usually seemed to follow
Fudging	Misleading or giving erroneous or deceptive advice	Increases in anxiety usually seemed to follow
Documenting	Giving documentation on the process	Uncertain
Consulting	Consultant seeking advice from another consultant	Uncertain
Referring	Referring the client to another source of information	Increases in anxiety usually seemed to follow

tainty of the particular client who was familiar enough with that particular process to recognize, find, and move the file to the "trash can." However, when this same response was given to an ostensibly less-knowledgeable client with a very similar problem, this client was unable to find the "trash can," let alone conceive of moving the file to it. Signs of client frustration seemed to increase, although the consulting behavior itself was virtually identical in both transactions.

Most of the consultants during the initial stages of their interactions with clients seemed to use almost identical language and jargon. It was judged that their choice of wording seemed aimed at clients with at least an *intermediate* level of computer knowledge. It was often well beyond the level that beginners could understand, yet it was almost too simple for the expert. Consultants rarely adjusted for the level of expertise of the person they were speaking with. For example, the statement "I can't help you format an ASCII data set" will be clear to someone with a moderate degree of familiarity with mainframe statistical computing. However, a beginner with only a vague idea of what is meant by "format," "data set," and "ASCII," might well be confused by this statement. The failure of consultants to adjust their language to the level of their various clients contributed substantially to our observation that less than half of the recorded incidents of *talking* actually seemed to reduce client uncertainty or anxiety. *Talking* appeared helpful in those in-

stances where the consultants' language and jargon matched the knowledge level of the client.

Consultants' questions often seemed anxiety-provoking. A question such as "What is the column length of your data set?," however innocently intended, seemed to produce increased levels of anxiety and uncertainty especially among those who appeared not to know what "column length" meant, nor how to assess it. Even seemingly innocuous queries were capable of producing defensive reactions. One consultant asked a client "Why do you want that [program]?" Such a question required the client, who already felt somewhat insecure in his knowledge, to justify the very appropriateness of his question. In one particular case the client displayed an episode of acute stammering before he was even able to begin to try to respond.

Showing

Showing is a process where the consultant actually shows a client how to do something by taking him or her through the process in a step-by-step manner. There were two subcategories of showing: *Hands off showing* describes situations where the consultant performed tasks *for* the client. *Hands on showing* occurred when the consultant "talked" the clients through tasks but allowed the client to perform the actual keystrokes and/or motions with the computer's mouse.

It is logical to assume that *showing* reduces uncertainty at least about whether or not an operation was possible. In showing, the client actually sees the operation, while the consultant performs it step-by-step. However, *showing* seldom seemed to reduce anxiety and may not have had much of an effect on clients' feelings about whether they, themselves could perform the computer task. Going through the steps by rote may not be sufficient to reduce anxiety, or give the user confidence that they will be able to reproduce those steps. In *showing*, consultants usually did not ask about or in any way check with clients to ascertain whether they *actually understood* what they were doing. In fact, in most cases the consultants went through the steps far too quickly for clients to be able to follow along or to read the messages or text that periodically flashed onto the monitor screen. There was little evidence that clients understood what they were doing or why. The rather minimal benefits of *showing* with regard to anxiety reductions suggest that simply knowing that a task can be done may not have actually helped clients believe that *they* were capable of performing the task. It seems reasonable to speculate that clients need to feel more of a sense of personal under-

standing and appreciation of the process, and an acquaintanceship with the procedures and the sequences of steps being taken by the consultants, if they are to overcome their feelings of anxiety and uncertainty.

Explaining

Explaining involved offering clients reasons for going through particular processes, or for the occurrence of a particular phenomenon. *Explaining* has been divided into two subcategories.

Task explaining has to do with giving explanations that were limited to simply explaining the mechanics of the task, process or phenomenon. *Task explaining* went beyond "showing" or "talking" by informing the user *why* certain actions were necessary, *what* those actions did and *when* to do them. In one case where a client was having difficulty running a statistical program, the consultant speculated out loud about the nature of the problem, and a possible solution. She then tried out the "solution" carefully, making sure the client understood the reason for each step. She repeated this same process with the client several times until the problem was solved. While there were similarities to the process of *showing*, as described in the preceding section, this process differs in some marked ways. As the consultant went through the process of solving the problem, considerable detail was offered about the reasons for what she was doing. In *showing,* the consultant merely went through the steps without much, if any, explanation.

Process explaining, by contrast, involved explanations that were of a more general nature and not limited to the task at hand. They seemed more directed to clients' uncertainties about *their* abilities. *Process explaining* seemed more aimed at giving clients confidence by introducing them to general approaches to problem-solving that could be used in a variety of computer situations. For example, one consultant discussed the problem-solving approach that consultants themselves use when trying to find solutions to computer problems. She *explained* that the process used by consultants is one of "trial and error," wherein they keep trying things until something works, noting that this is not so different from what clients do. This type of explanation seemed designed to build clients' confidence in their own problem-solving abilities and demystify how one might go about finding solutions. *Process explaining* went well beyond simply telling someone about the mechanics of a computer process. It was more like offering a model which clients could then use. This appeared to reduce or calm their fear and worries. For example, a consultant offered reassurance to one client by saying that she

would stay with him until they were both sure that *they* had solved the problem. She repeated her problem-solving approach as they worked through several errors in the clients' statistical problem, assuring him that this was normal, and that consultants used this same method. She maintained this dialog until the client's statistical program was running properly.

One consultant who seemed particularly skilled at *explaining* seemed to be doing both *task* and *process* explaining at the same time. This consultant explained the mechanics of the task, taking pains to make sure the client understood each step (*task explaining*). At the same time he modulated the tone of his voice and the affect in his speech patterns in a manner that conveyed confidence that the client could also do the job. In this way he seemed to be using *task explaining* as a principal approach while also addressing the client's fears and anxieties through *process explaining*.

Most cases of *explaining* seemed to be successful in terms of alleviating anxiety and uncertainty. This suggests that explaining may be a particularly effective tool. However, it should be noted that explaining was observed relatively infrequently. Out of the 155 consulting transactions observed in this study, only 10 were categorized as *explaining*. Although in nine of those instances client anxiety or uncertainty seemed clearly to be reduced, it would have been helpful to observe more instances of *explaining*. This is necessary before coming to any more definitive conclusions about the effectiveness of this approach.

Fudging

Fudging refers to actions by the consultants that included any of the following: communicating misinformation, misleading the client, or performing actions with the computer which seemed either counterproductive or to serve no discernible purpose. Fudging had two subcategories which have been labeled as "Pseudo-task" and "Pseudo-process" fudging. *Pseudo-task fudging* occurred when the consultant appeared to be working knowledgeably on the task at hand, but was either misleading the client, or was not able to successfully complete the problem-solving task. For example, when asked a question about how to download a computer program available from the university, one consultant went into a flurry of keyboard activity which produced no discernible result, and which appeared to the observer as the same, unsuccessful, action repeated over and over. This is characteristic of *pseudo-task fudging*; the consultant works "diligently" at a task that appears to be

addressing the client's problem, but is in fact something else. In this case, an activity that looked as though it were highly technical, actually may have been stalling for time or guessing. The client may not even be aware that the consultant is fudging, but only that the problem is not being solved. In some cases this may even compound anxiety, if watching clients conclude that the task is so difficult that even the consultant, with all his/her furious and mysterious activity, seems unable to generate a solution to their problem.

Another kind of *pseudo-task fudging* occurred when consultants seemed to become so involved with technical tangents of the client's problem that they lost track of the actual question the client had asked. One client, for instance, presented a problem involving uploading files from a PC to one of the mainframe computers. The client could get the file to appear in the mainframe account, but although he could see it, he was not able to access it. The client wanted to know how to upload the files in such a way that they could be used. The consultant, however, seemed to become fascinated with the file itself and set about trying to work with and fix its problems. The client repeatedly informed the consultant that he was not interested in how to *fix* the file. What he was interested in was how to *upload the file* in such a way that it would not *need to be fixed*. The consultant was, in this case, *pseudo-task fudging* because, although she was focused on an interesting technical *aspect* of the problem, she was not working on the *client's* problem and may not have even understood how to help the client.

Like *process explaining*, *pseudo-process fudging* seemed on the face of it, to address either clients' anxieties or general problem-solving processes. In the case of *pseudo-process fudging*, however, the consultant was actually misleading clients or giving them a false sense of security. For example, one client sought help in downloading library information from one of the university mainframe computers. The client asked whether he would be able to download this information from the mainframe to one of the Macintosh PCs. The consultant informed him that indeed he certainly would be able to do so. In fact, however, the computers the client was using were not equipped with the necessary software to download library information. Since the consultant was misinforming the client about a basic computer task, he was engaging in *pseudo-task fudging*. However, when the client expressed worry about not knowing how to download the information, the consultant replied by saying "Don't worry, I'll be here [for the next hour]." The comment was apparently designed to address the client's anxiety. However, since

this incident resulted in a total loss of the library information, the client's worries were reinforced or exacerbated.

A different type of *pseudo-process fudging* occurred when a consultant would give misinformation that seemed designed to get the client to give up on what would otherwise be a productive activity. In one case of this type of *fudging* a client asked about the availability of a particular operating system tutorial. The consultant informed the client that no such program existed. The implication was rather clear: the client should abandon the search for the program. In fact, however, the program about which the client was inquiring was available on some of the PCs in the user area.

It was quite surprising to find that *fudging* was one of the more prevalent consulting behaviors that were observed. Nearly one-quarter of all of the recorded consulting processes involved one or another type of *fudging*. This is unfortunate since it almost always seemed to provoke or stimulate heightened levels of anxiety or uncertainty. Moreover, clients exited the consultation transaction with incorrect or misleading information.

Documenting and Consulting

Three consulting activities, *documenting*, *consulting,* and *referring* seemed to have little effect on anxiety or may have actually exacerbated it. However, they were not observed very frequently. However, each of these behaviors was observed at least a few times, and may be of interest to authors thinking of conducting research in this area.

Documenting occurred when the consultant used and/or gave out handouts, manuals or other documentation prepared by the computer services department in order to answer a question. *Consulting* refers to the consultant seeking consultation with another consultant. Neither *documenting* nor *consulting* seemed to have much of an effect on clients' anxiety and uncertainty.

Referring

Referring occurred in two forms: (a) a referral to another source (i.e., another consultant or the manufacturer); or, (b) to a later point in time. Most often the consultant would refer the client to another consultant or would promise to have an answer for the client at a later time. Most often *referring* seemed to promote client anxiety and uncertainty. This may be because *referrals* were usually given at a point and in a manner

by which it was unclear as to which consultants were responsible for answering clients' questions. This is a common experience for users of telephone support lines who, after waiting on the telephone for what seems to be forever, are told that they have called the wrong support line. A common example we observed involved using a PC to access a mainframe computer. It sometimes appeared that the consultant was not sure whether the question was more appropriate for mainframe or PC consultants. It seems reasonable to speculate that for some clients learning that even the computer "expert" is not able to help may be quite anxiety provoking. Further, if the consultant seems unsure about where to refer the client, that might compound client uncertainty.

It is, of course, quite possible that *documenting*, *consulting* and *referring* may be effective in reducing anxiety and uncertainty in ways we were not in a position to note. These behaviors were not frequently observed in this study. It seems reasonable to speculate that such activities by consultants might reduce anxiety or uncertainty in the long run, even if they did not seem to have much of a positive effect on clients in the user room. Consultations with and referrals to people outside the user area could not be observed. Future studies of the effectiveness of handouts, other types of documentation, and referrals to outside consultants need to be conducted.

DISCUSSION

The methods used and the population observed in this study do not allow for broad generalizability. Even so, it is unsettling to note that nearly 40% of the consulting processes observed in this study seemed to have exacerbated or provoked client anxiety and/or confusion. Only one-third of these consulting transactions clearly appeared to reduce client anxiety. This suggests that it may not be feasible for social work educators to assume that computer consultants will have developed appropriate and effective techniques that help students deal with their fears about using computers.

Processes such as *talking, explaining, showing, documenting, consulting,* and *referring* all appeared to have somewhat questionable or indeterminate effects. *Explaining* seemed to have the clearest potential for alleviating both anxieties and uncertainties, as does *talking*. Future researchers may be interested in whether *explaining* behaviors when combined with *showing*, can overcome some of the limitations observed

when *showing* was used alone. *Showing*, all by itself, appeared to have surprisingly little effect on anxiety.

Documenting, *referring*, and *consulting* seemed to have had almost no influence on reducing clients' anxiety and uncertainty. These activities may be necessary in some situations (after all, no consultant can be expected to know everything!) but it is important that both consultants and educators remain aware of the limitations inherent in these approaches. Since this study was not able to assess the longer-term effects of consulting behaviors, future researchers also may want to examine which behaviors are helpful over time. It is quite possible that some of these observed behaviors actually helped clients but this research did not allow for this to be documented.

The most consistently destructive process observed was *fudging*. Such behaviors are probably used to mask a lack of appropriate knowledge or to allow additional time for the consultant to come up with an actual solution to client problems. A full understanding of these behaviors will require further research. In any case, consultants should probably be made aware of the potential dangers inherent in their use of *fudging*.

Using Computer Consultants

There is mounting pressure to add computer content to social work curricula. The workplace that social work students will enter increasingly features a variety of computerized information systems, electronic record keeping, telecommunications, as well as the (by now) routine word processing and spreadsheet applications. Students need to have a basic understanding of the utilization of these technologies in order to be able to function effectively. This is reflected in CSWE requirements for master and bachelor programs in social work that require students to be exposed to new technologies during their professional education (Commission on Accreditation, 1994, 2003).

There is a burgeoning agreement that what most social workers need is a level of basic "computer literacy" (Ezell, Nurius, & Balassone, 1991; Finn, 1995; Flynn, 1994; Reinoehl & Mueller, 1990). For most social work students, as well as for most faculty, an understanding of how to use basic operating systems and programs on processors, spreadsheets, databases, telecommunications, and statistical programs will suffice. Most social workers do not need the level of technical competence necessary to create specialized software applications, although some social workers can and do have these competencies.

Many social work educators see "user rooms" and computer consultants as at least a partial solution to the problem of increasing students' access to and knowledge of basic computing. There is inherent efficiency in the approach. Those students who do need help are able to receive technical assistance that applies the specific problems they are having. Those students who do not need help are not forced to sit through exercises and classroom experiences they do not need or want. The use of computer consultants to help students who are having problems with basic computing skills also has the advantage of freeing social work educators from the burdens of remedial instruction of students regarding computer basics. For example, the instructor can announce that students will need to be proficient in using such applications as an Excel spreadsheet or the Netscape Navigator web browser. Students who need help or instruction in how to use these applications should report to a computer laboratory at a specified time where consultants will be available to help them. This may allow faculty to concentrate on how specific computer technologies relate to their course material rather than forcing them to spend all-too-limited class time on the rudiments of computer use.

However, the findings raise some cautions about turning social work students over to computer consultants. Social work educators inclined to rely on the use of computer consultants may wish to screen these consultants for their "people skills." Since social workers may actually be somewhat less computer literate than their counterparts in other disciplines (Finn, 1990; Lamb, 1990), it may be necessary to do some special preparation and training with consultants to make sure they are aware of those behaviors which are particularly helpful in instructing social work students and which have the potential to exacerbate their fears and anxieties. When possible, social work educators may be inclined to consider whether consultants are really necessary, or whether there are students, doctoral students or others who already have good "people skills" who might be recruited or trained to fill positions as consultants.

In many cases, however, the use of such consultants is likely to be unavoidable, since the expertise that they bring may not be available from other sources. While this study raises several serious questions about the efficiency of some interactions with computer consultants, it is important to note that such support personnel have a vital role to play as social work units increasingly computerize parts of their curriculum (Flynn, 1994; Hernandez & Leung, 1990; Visser, 1995). This becomes even more important at a time when many software and hardware manufacturers cut back on their offers of free and available technical assis-

tance and documentation. At one time it was common for most software packages to come with telephone book-sized manuals and toll-free telephone numbers for technical support; such "free" assistance is less usual these days. Social work programs increasingly need to rely on "in-house" sources of support. In selecting in-house consultants, however, it is important to remember what early Apple Computer commercials so effectively pointed out: that what makes computer technology efficient and effective is not so much its cost or sophistication, but whether it *actually gets used*. This adage is probably even more applicable to the role of computer consultants. The consultant will have to be able to actually come up with and communicate solutions to computer problems as presented by social workers. Just as important, however, effective consultants have to competently deal with fears and anxieties that many users continue to have in order for their technical expertise to be put to good use.

CONCLUSION AND RECOMMENDATIONS

Further research using more focused and rigorous descriptive and explanatory methods will, of course, be necessary to determine the effects that various behaviors have on computer anxiety. This study was designed as an initial exploration and effort at categorization of consultant behaviors. It would be beyond the purview of this study to suggest that these behaviors are widespread or even to speculate on how intense an effect they may have on anxiety.

Even so, the findings suggest that interpersonal skills may be very important in exchanges between consultants and computer users. This is important for a variety of reasons. First, this supports the notion that *how* students are exposed to computers is important in terms of reducing their anxieties. If Mauer (1994) is correct in suggesting that positive attitudes affect the degree to which students use computers, then this study's suggestion that there may be a direct link between learners' positive and negative attitudes about computers and the quality of instruction they receive, is especially critical. If subsequent researchers, for example, find that behaviors such as *fudging* exacerbate negative attitudes, it may well be that such instructional encounters actually tend to raise anxiety levels and even drive students away from future computer use.

This initial, exploratory study also raises the interesting notion that the effectiveness of such encounters could be enhanced if consultants

received some rudimentary training in fundamental *social work* skills such as critical listening and interviewing. It seems reasonable to expect that social work educators might help prepare consultants to *start where their clients are*, by sensitizing them to the anxiety levels and knowledge gaps that may characterize many of the social work students they are likely to work with.

While this study was primarily concerned with consultants, subsequent researchers may want to investigate whether the behaviors encountered in consulting situations also appear in more mainstream computer training and learning environments. If so, educators may wish to reexamine their communication approaches and styles when teaching about the use of computers.

This study also has implications for subsequent research on computer anxiety. The findings of this study suggest that external factors such as the behavior of computer consultants very likely influence the anxiety levels of users. More rigorous descriptive and experimental designs utilizing the consultant behaviors identified in this study, may yield more knowledge as to which behaviors are ultimately most and/or least effective for reducing students' computer anxiety.

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