Ethical and Professional Issues with Computer-Related Technology

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Abstract. School psychologists have an ethical imperative to determine the ways computers can facilitate practice because of the potential to improve effectiveness and efficiency. At the same time, psychologists have a parallel imperative to consider carefully ethical and professional practice implications. The aspects of computers that render them most helpful also render them most vulnerable to ethical violations. With the increased use of computer-related technology, conflicts between and among professional ethics, principles of professional conduct, and personal values arise in every arena of practice. Psychologists should not replace traditional practice with technological advancements, but use them to augment practice. Ultimately, responsibility is nontransferable and remains with the psychologist. Fundamental ethical imperatives are the same in the use of computer-related technology as in any professional work.

Computers and their related technology can be an enormous boon to the work of school psychologists. Their power, speed, and flexibility enable one to store, tap, and modify vast amounts of information. They are less prone to computational and clerical errors than humans, save time and energy, and open new methods of communication between professionals and clients. Applications of computers have been developing at an astonishing rate. Today’s software, such as programs that translate from one language to another or that reliably grade student essays (Landauer, 1998), would have been considered science fiction a few years ago.

The integration of computer-based services with existing resources and services can be challenging (Sampson, 1999), but the vision of services, such as counseling on-line (Hampton & Houser, 2000; Maheu & Gordon, 2000) and using the Internet for test interpretation purposes (Sampson, 2001), is increasing enormously. Such practice has the potential to enable school psychologists to reach a broader audience (Harris-Bowlsby, 2000), and to make psychological services more readily available to underserved populations (Hampton & Houser, 2000; Lee, 2000). The Internet has a wide variety of psychological applications, such as providing help in evaluating options for therapy, information about specific psychological services, informational resources, ongoing personal counseling and therapy through e-mail, psychological testing and assessment, real-time counseling through chat and conferencing, self-
help guides, single-session psychological advice through e-mail or e-bulletin boards, synchronous and asynchronous group discussions and supportive counseling, and psychological research (Barak, 1999). Psychologists may participate in these services as providers or may refer clients to them. With increasing regularity, school psychologists will encounter clients, parents, and teachers familiar with these services. In addition, the Internet has the potential to revolutionize the training and supervision of school psychologists, ranging from increasing cultural competence (McFadden & Jencius, 2000) to using distance learning in training.

The National Association of School Psychologists (NASP, 2000), the American Psychological Association (APA) Ethics Committee (1995), and the APA Committee on Professional Standards and Committee on Psychological Tests and Assessment (1986) directly addressed ethical issues involved in psychologists’ use of technology. A number of professional ethical principles are relevant (Heron, Martz, & Margolis, 1996; Hughes, 1986; Jacob-Timm & Hartshorne, 1998; Pryzwansky, 1993). NASP’s Principles for Professional Ethics, in the Professional Conduct Manual (NASP, 2000), stipulate that school psychologists are fully responsible for technological services used. They must ensure confidentiality and privacy, take responsibility for decisions, and use technological devices only to improve the quality of client services. Similarly, a policy statement issued by APA’s Ethics Committee (APA, 1996) addressed ethical complaints regarding services provided electronically, and indicated that psychologists must make decisions about how to use computers and related technology with full consideration of costs and benefits. In using technology to augment services or research efforts, the psychologist maintains primary ethical (and legal) responsibility for outcomes. Psychologists cannot attribute professional responsibility to the software manufacturer, the author of the treatment approach, or the computer programmer. Ultimate ethical responsibility lies with the psychologist and cannot be sidestepped (APA, 1992; APA Ethics Committee, 1995; NASP, 2000; Reynolds, McNamara, Marion, & Tobin, 1985).

Because computers have the potential to improve the effectiveness and efficiency of the work of school psychologists, these psychologists incur an “ethical imperative” to determine the ways in which computers can facilitate practice (Ager, 1991). As hypothesized by McKinlay (1988), with “greater knowledge and power . . . come greater forms and degrees of the use and abuse of tools for psychosocial change” (p. 370). Technology provides multiple, phenomenally facile opportunities for ethical violations (Heron et al., 1996; Mann, 1998). The application of computers to the assessment and treatment of individuals has, by its very effectiveness and efficiency, the potential to gravely violate human rights through both poor design and improper use.

Consideration of the ethical dilemmas concerning the use of computers and related technology has generated a considerable commentary both in traditional print media and on the Internet (Bloom & Walz, 2000; Johnson, 1995). The Internet, for instance, provides extraordinary power and autonomy, accompanied by an unprecedented lack of personal consequences (Babcock, 1994). Hauptman and Motin (1994) caution that although computers change the way individuals create and the Internet has changed the way individuals communicate, people should not allow these innovations to change the way they act or to alter their commitments. Conflicts between and among professional ethics, personal values, and principles or laws governing responsible practice arise with the increased use of high technology. These conflicts raise key questions about how to use technology to its fullest while upholding essential ethical and professional practice principles concerning client welfare, confidentiality, competence, responsibility, and integrity.

This discussion centers on ethical and professional issues that accompany the application of computer-related technologies in the delivery of services by school psychologists. Although legal principles have some bearing on this subject, laws are not central in this discussion as they differ from professional ethics and offer less guidance to practitioners and train-
ers. Some behaviors that are clearly unethical are just as clearly legal. Continuing to practice despite a serious emotional condition or illness that precludes effective work with clients is one example of behavior that is unethical but not illegal (Koocher & Keith-Spiegel, 1998). It should be noted that, through their ethical codes, school psychologists are bound to know and adhere to current federal and state laws, statutes, administrative rulings, and local policies and procedures. It has become more complicated to adhere to this ethical principle, however, with the advent of the Internet because psychological services provided on the Internet inevitably cross state boundaries and thereby raise new questions regarding legality and supervision (Hughes, 2000; Love, 2000; Sampson, 2001).

The following sections include discussion of risks and potential risks to major ethical principles that arise from the application of specific computer technologies. Professional concerns addressed include client welfare, confidentiality, professional competence, responsibility, and parameters for using computer technologies in training and supervision. Within each major section are descriptions of issues created by common uses of computer technology and explanations of how these issues call for greater consideration and circumspection to ensure professionally appropriate practice.

A broad survey of professional literature on the topic of ethical practice in the use of computer technology resulted in multiple lists of recommended guidelines. These guidelines for responsible use of computer technology are summarized in Table 1, and grouped by ethical parameters vital to the profession. Specific table entries were generated from numerous sources, indicated in the table footnote.

### Risks to Client Welfare and Confidentiality

School psychologists maintain the child’s welfare as paramount (Jacob-Timm & Hartshorne, 1998). When using computer technology, they must remain aware that computers are only as accurate, appropriate, reliable, and sensitive as the humans who developed the programs (Engels, Caulum, & Sampson, 1984). Currently, computer programs are unregulated. As Carr (1991) observed, “human therapists require a license to ensure they are competent, and the same should apply to computer programs” (p. 73). In the absence of a license, it is incumbent upon every individual psychologist to ensure the appropriateness of the computer programs used in practice by seeking unbiased evaluations of these programs. Similarly, school psychologists should not recommend that others, whether children or educators, use software products that have not been evaluated favorably.

Confidentiality between school psychologists and clients is essential to establish trust and, consequently, influences the effectiveness of assessments, consultation, therapy, and research. Confidentiality is rooted in professional ethics, although in some jurisdictions legal requirements reinforce the need for psychologists to maintain confidentiality (Bersoff, 1995). As always, psychologists must apprise clients about the limits of confidentiality in their initial meeting. They also must remain vigilant regarding potential violations of confidentiality in the use of computers both at home and at the workplace, as violations can occur easily as a result of a school psychologist with a home office leaving client documents unsecured or sharing Internet access accounts with others (Woody, 1999).

### Considerations in Computerized Record Keeping

State and local laws vary regarding the length of time psychologists must keep records—whether these records are computerized is irrelevant. In addition to applicable laws, APA recommends retention for 3 years for the full record, 12 years for a summary, and 3 years past the age of majority for minors (APA, 1993). School psychologists should develop a regular pattern of reviewing computer-based files to consolidate working notes and cull obsolete material. Records kept on computers must be protected by passwords and the use of non-networked computers. According to the APA (1992), when psychologists enter confidential information into databases or systems of records available to persons who lack clearance for access, they should use encoding and avoid the inclusion of personal identifiers. If psychologists keep
### Table 1

**Summary of Guidelines for Responsible Use of Computer Technology**

<table>
<thead>
<tr>
<th>Guideline</th>
<th>Specific Actions to Ensure Responsible Use</th>
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<tr>
<td>Ensure quality</td>
<td>Use technological advancements to augment, improve, or increase the efficiency of traditional practice&lt;br&gt;Monitor the effect of technology on provision of care&lt;br&gt;Develop methods to monitor and ensure practitioner competence&lt;br&gt;Maintain integrity and therapeutic value of the relationship between professionals and clients&lt;br&gt;Ensure the same quality of services is provided as would be provided in face-to-face encounters&lt;br&gt;Integrate computer-generated findings with other information&lt;br&gt;Augment computer-generated reports by taking into account vital information about the test taker, such as cultural, linguistic, and economic factors&lt;br&gt;Avoid using unadulterated narratives generated by software programs&lt;br&gt;Review and edit computer-generated prose; reject errors and overstatements&lt;br&gt;Receive ongoing supervision or peer support in computer-mediated consultation</td>
</tr>
<tr>
<td>Retain responsibility and safeguard client welfare</td>
<td>Remain aware that computers are simply tools programmed by people&lt;br&gt;Retain full responsibility for computer technological services used&lt;br&gt;Retain full responsibility for decisions based on technological services&lt;br&gt;Fully consider costs and benefits when deciding how to use computers and related technology&lt;br&gt;Receive appropriate training on ethical issues and using e-mail in consultation&lt;br&gt;Limit practice to those areas that are legally or professionally authorized&lt;br&gt;Consult unbiased evaluations of software to determine appropriateness of use&lt;br&gt;Ensure safety of clients through safe software, safe hardware, and practitioner competence</td>
</tr>
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Maintain confidentiality
Inform clients about the limits of confidentiality in computer-maintained records, including information regarding the use and disposal of tapes and disks
Assume e-mail messages are permanent and potentially public
Safeguard the confidentiality of all records of each client’s encounter with all services, both face-to-face and via computer technology
Avoid the use of networked computers
Obtain informed consent for simultaneous or delayed supervision using computer technology
Use the best computer security available or a closed computer network
Use pseudonyms for computer-based consultation and records
Restrict access of confidential computer databases to authorized professionals
Review computer files regularly, consolidate working notes, and purge obsolete confidential data maintained on computers
Minimize inclusion of identifying information in computer-based consultation notes and archival records.

Make data-based decisions
Base professional practice on empirical data and professional consensus
Use only software that has been evaluated favorably
Ensure the equivalence of interpretations derived via computer technologies and those derived “by hand”
Remain aware of professional competencies and be careful to stay within one’s limits
Resist assuming that computer-generated reports and any associated decisions are necessarily accurate
Resist assuming that computer-generated recommendations are necessarily appropriate for the individual client or student being evaluated

Ethical Issues with Computer Technology

Archival computer records as a source of information about diagnostic and treatment strategies, it is vital that they remove identifying information because outdated information, such as diagnoses that are discounted at a later date, could harm clients (Sturges, 1998).

Although computer-based systems offer significant advantages to psychologists because of the ability to store, integrate, search, retrieve, and transmit information, fundamental ethical principles continue to apply (Kat, 1998). Particular areas of concern include the maintenance of confidentiality and security of records. Concomitantly, there is an ethical obligation to document adequately to ensure enduring records of evidence of the psychologist's work. These records facilitate continuity of care across providers, provide for the statutory rights of clients to have records that are accurate and understandable to the client, and provide evidence should the client decide to take civil action for damages. The use of electronic data systems are “inherently outside of the control of the professionals using them” (p. 26). Professionals are not able to make records anonymous, or to delete them due to multiple back-up copies made during the course of treatment. These problems should be handled by restricting access to authorized persons only and informing clients to whom and what they have given consent—that is, to whom their records will be available.

Many ethical and practice guidelines are probably impossible to follow when databases are used for cost containment. Consistently, privacy and confidentiality have been a concern of both computer users in the general population and the courts (Trubow, 1990). The Electronics Communications Privacy Act of 1986 extended the Wiretap Act to cover communications carried by all technologies, and extended the right to privacy to situations in which a person can reasonably expect privacy (Loundy, 1995). It consequently disallows the intentional interception of any communication, whether electronic, oral, or wire, and provides for the prosecution of anyone who does not respect privacy. Exceptions are made for operators of the wire communication service, when the communication pertains to a crime or a search warrant, when consent for monitoring has been given, or when the message is readily available to the public. Similar regulations and exceptions apply to information stored on a computer, although if a search warrant results in seizure of the entire computer a separate warrant does not appear to be necessary for its content (Loundy, 1995).

As discussed by Davidson and Davidson (1995), therapists reporting to health maintenance organizations frequently must report detailed information that clearly violates the confidentiality of the client, including details about their sex lives and drinking habits. This information generally is entered in a computer database and, once information has been sent, the therapist has no control over how this information is used or with whom it is shared. This is an example of privacy being sacrificed for “more valued commodities—profits, efficiency, and productivity” (Salvaggio, 1989, p. 129). In many states, school psychological services are reimbursable to the system as Medicaid services, and to obtain these reimbursements the system must relinquish records pertaining to treatment plans and progress reports, which then may be viewed by administrative personnel who have never met the client. Others, ranging from computer technicians who maintain the computers to investigative government or legal entities, also are likely to review records. When reporting to managed care providers, psychologists cannot assure clients that information about them is safeguarded or that it will be used exclusively for their benefit. School psychologists, administrators, and clients tend to ignore the extent of this lack of confidentiality, and they fail to acknowledge the reality that “psychotherapy is no longer one-to-one” (Davidson & Davidson, 1995, p. 460).

Encoding or encryption of passwords and messages represent attempts to render digital information secure so interceptors cannot decipher them. Considerable technical strides are being made in an effort to safeguard communications over a network. The most sophisticated and secure means of encoding or encryption are the use of identification cards and readers (Kosiur, 1996; Pompili, 1996). However, encryption is not a panacea because software programs can decipher many types of encryption, encryption is still in limited use by...
the general public, and it continues to be vulnerable to skilled computer hackers (Petreley, 1996). With material so easily misdirected, privacy cannot be ensured with technological use, making it inappropriate for school psychologists to fax or e-mail confidential information, psychological reports, or Individual Education Plans.

**Considerations in Electronic Communications**

Electronic mail encourages a frequency of contact that is virtually impossible through face-to-face meetings or telephone calls. E-mail is a powerful method of communication, of high speed, high interactivity, low cost, and without regard to time or place. It can extend training, provide peer support, and create a collaborative electronic community in professionals’ quests to help students (Harvey & Kruger, 1998; Macklem & Kruger, 1997).

Communication by e-mail has some negative attributes, however, some of which relate to the semantic content of messages sent electronically. Recipients frequently misinterpret messages due to near instantaneous responses, the lack of feedback during the delivery of the message, the identical appearance of casual and formal messages, and the increased likelihood of the message containing strong emotions (Shapiro & Anderson, 1985). As noted by the APA Ethics Committee (APA, 1996) and the National Board of Certified Counselors (Bloom & Walz, 2000), participants often find the lack of nonverbal and social cues in e-mail to be problematic. Sproull and Kiesler (1991) suggested that the lack of these cues results in more frequent vitriolic messages on the Internet relative to the frequency in paper mail or interpersonal conversation. Shapiro and Anderson (1985) recommended that persons using e-mail assume all messages are permanent, avoid irrelevancies, avoid responding while feeling emotional, clearly label emotions expressed, and clearly label opinions as such. They also recommend that e-mail users identify themselves and their affiliations, limit messages to a single subject, maintain a mental model of the intended audience, minimize the number of addressees, refrain from insulting or criticizing third parties, and respond to misdirected messages to inform the sender of the error. Rereading messages that elicit strong emotions fosters increased understanding.

The subjective experience of using e-mail or other computer-related technologies easily contributes to judgment errors resulting in violations of confidentiality. While composing e-mail messages or sending faxes in the privacy of a home, office, or car, it is easy to believe that the intended communication will be confidential (Sturges, 1998). Unfortunately, others to whom the information was not addressed commonly receive these supposedly confidential communications. Although similar ethical violations occur with traditional forms of communication, confidentiality breaches using contemporary forms of communication occur with extraordinary ease.

As e-mail messages are relayed from one computer to another before reaching their final destination, different individuals can not only read confidential information, but also can forward, alter, and print messages without the psychologist’s knowledge. The original, or an altered version, can be sent and consequently stored on countless computers (Shapiro & Anderson, 1985; Szofran, 1994). Paradoxically, although messages sent by e-mail appear temporary, they are actually more permanent than paper communications as they remain on disk archives even when deleted. Thus, school psychologists must assume permanence and ubiquity, because the sender’s, recipient’s, and intervening mainframe computers permanently save e-mail messages. Furthermore, administrators of computer networks have the capability of monitoring the content of messages and are legally entitled to do so in the interest of service provision, and “hackers” may break into computer networks to steal information, wreak havoc on the network, or simply break the security system of a network for the pure challenge of doing so. Although such practice is illegal under the Electronic Communications Privacy Act (Loundy, 1995), the act is extremely difficult to enforce and offenses often are not prosecuted unless damages in excess of $1,000 can be demonstrated (Nimmer, 1996).

Because of these threats to privacy, some Internet authorities liken communication on the Internet to publishing on the front page of the
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newspaper (Szofran, 1994). As indicated by Koocher and Keith-Spiegel (1998), “Psychologists and what they have to say are of interest to the public . . . every time we contribute our thoughts and identify our profession on line, we may be making a statement to a large public audience even though we are completely alone in our office” (p. 305). Until a high level of e-mail security is more widely available, ethical principles regarding public forums seem relevant in safeguarding client welfare. In this regard, both APA and NASP guidelines address the importance of removing identifying data from public lectures or publications so that individuals are not identifiable.

Risks to Professional Competence and Responsibility

When psychologists use computer technology, it affects their ability to practice within the domain of professional competence for several reasons. Given the rapid and ever-expanding development of computer-related technology, it is essential that training programs include computer technology in their curricula. Similarly, practicing psychologists must maintain and update their knowledge of computer-related technology on an ongoing basis. Besides acquiring knowledge about and skill in using computers and related technology, school psychologists must be sensitive and responsive to the ethical demands inherent in applying technology throughout the broad base of their professional roles in assessment, counseling, consultation, and research.

Issues in the Use of Computer Technology in Assessment

Computer-assisted test scoring, interpretation, and report writing can be quite beneficial to psychologists as they complete assessments. It is imperative that psychologists considering computer applications for assessment practices also consider and address the inherent ethical issues. Some authors (Jacob-Timm & Hartshorne, 1998; Ownby, 1997) question the appropriateness of using narratives, or portions thereof, generated by software programs, rather than by the psychologist himself or herself. Others (Eyde et al., 1993) neither proscribe nor endorse the practice, but offer guidelines for responsible use that include the integration of computer-generated findings with other information, and the detection and rejection of errors and overstatements in narratives produced by a computer program.

Several authors have described the potential benefits of computer scoring and interpretation (e.g., Kamphaus, 1993; Snyder, 2000). Apart from the obvious speed and clerical accuracy, advantages of computer interpretation include increasing divergent thinking and providing “virtual” access to expert clinicians from whom the algorithms underlying software development were derived. The average psychologist would not have daily access to such persons. Tapping into their collective knowledge, at will, can provide enormous and immediate expert guidance. Even some advantages, however, must be presented with a cautionary note. For instance, error trapping (Kamphaus, 1993) will flag impossible values among test or subtest scores, but this cannot be taken to mean that one cannot commit a scoring error that is within the “possible” range. Clearly, this benefit does not obviate the need for careful scrutiny of data input. A more complete discussion of ethical issues, benefits, and liabilities involved in the use of computers for assessment purposes is provided elsewhere (Carlson & Harvey, 2003).

For nearly two decades, lack of sufficient validity evidence has been problematic in terms of establishing empirically the equivalence of interpretations of test data derived via computer technologies and those derived “by hand” (Butcher, Perry, & Atlis, 2000; Garb, 2000; Moreland, 1985, 1992; Sampson, 2001). Of further concern is the inability of computer-based test interpretation programs to offer data-driven interpretations and interventions that take into account vital information about the test taker, such as cultural, linguistic, and economic factors to the same extent as interpretations and interventions that are derived without computer software (Carlson, 2002; Harvey, Bowser, Carlson, Grossman, & Kruger, 1998; Ownby, 1997). A persistent concern, first noted by Matarazzo (1985) and later reiterated by Jacob-Timm and Hartshorne (1998), relates to the illusion of accuracy prompted by techno-
logically ordained reports, and the potential for practitioners to misread their own competence in the face of the false sense of security that often accompanies automation.

Issues in the Use of Computer Technology in Direct Interventions

School psychologists and special educators have used computers as intervention tools for children with physical disabilities, communication disorders, learning disabilities, attention deficit disorders, and social skill deficits (Douglas, 1991). These programs are highly individualized and responsive to the individual child (Sturges, 1998). Many psychologists include individual counseling in their repertoire of direct interventions, and computers can be used to assist in this role. Computer-assisted counseling has been hailed as a potentially effective method to train psychologists, interview clients for historical information, enhance test interpretation, and treat specific types of psychological problems for which a well-defined treatment strategy is available (Carr, 1991; Reynolds et al., 1985; Sampson, 2001; Sturges, 1998; Wagman & Kerber, 1984). Computer-assisted interviewing and counseling via software programs are thought to increase accuracy in clinical judgments, reduce transference, facilitate training, and increase flexibility. Some research has demonstrated computer-assisted interviewing and therapy to be as or more effective than human interviewing or therapy. Lewis (1994) found computerized interviews to be equivalent to personal interviews, while Kobak, Reynolds, and Griest (1994) found interviewees were less embarrassed, and thus more truthful, during computer interviews. Gustafson, Griest, Stauss, Erdman, and Laughren (1977) found computer interviews successfully predicted 70% of inpatient suicide attempts, compared with the 35% accuracy rate of human clinicians. Computer-assisted therapy has been found to have equivalent outcomes to standard therapy with depression (Selmi, Klein, Griest, Sorrell, & Erdman, 1990), parent training (Armstrong, Munneke, Sim, Purtan, & McGrath, 1995), phobias (Carr, Ghosh, & Marks, 1988), weight loss (Burnett, Taylor, & Agras, 1985), cognitive rehabilitation (Skilbeck, 1991), and cognitive-behavioral group treatment (Dolezal-Wood, Belar, & Snibbe, 1998), with less therapist time required. Computer programs also have been used to facilitate successful negotiation and mediation (Shell, 1995), and to establish on-line support groups that provide opportunities for individuals to network with others who experience similar issues (Page et al., 2000).

On-line counseling raises a number of very serious ethical issues, many of which remain unresolved. Humphreys, Winzelberg, and Klaw (2000) explored psychologists’ ethical responsibilities as facilitators, advisors, and peer members in Internet-based groups, and indicated that the growth of Internet technology and on-line groups has outpaced the development of formal ethical guidelines for psychologists. The loss of face-to-face contact can be a serious issue, as can the loss of confidentiality, and difficulty complying with the duty to warn due to distance and anonymity on the Internet. In addition, Internet counseling jeopardizes practices within one’s domain of competence, state regulation of counseling, and complicates the need for malpractice insurance (DuMez, 2000). Because of anonymity and physical distance, serious questions regarding proper roles and responsibilities are brought forth by ethically enigmatic situations such as rational and assisted suicidal communication on the Internet (Richard, Werth, & Rogers, 2000). The ability of a psychologist to conduct an adequate assessment, formulate an appropriate treatment plan, and intervene effectively in life-threatening situations based solely on the use of computer technology cannot be assumed (APA Ethics Committee, 1995). Another ethical complication stems from the lack of regulation around the provision of on-line counseling services. According to Maheu and Gordon (2000), little information exists about the hundreds of individuals who provide on-line counseling services.

The interdisciplinary Joint Working Group on Telemedicine, convened by the U. S. Secretary of Health and Human Services, developed relevant overarching ethical guidelines (Reed, McLaughlin, & Milholland, 2000) to address
what may be perceived as the driving force behind the practice of telehealth—commercialism. Principles to help psychologists, nurses, and other professionals ethically use technology and telecommunications to provide services included: (a) ensuring that the same quality of services be provided as would be provided in face-to-face encounters; (b) safeguarding confidentiality and integrity of information, particularly when using e-mail, electronic data transmission, electronic records, and videoconferencing, all subject to third party observers; (c) informing clients fully about the process, risks and benefits, and their rights and responsibilities so they can provide informed consent; (d) adhering to professional standards for service quality, maintaining the integrity and therapeutic value of the relationship between the professional and the client, and limiting practice to areas that are professionally authorized; (d) developing methods to ensure practitioner competence; and (e) ensuring the safety of both clients and professionals through safe software, safe hardware, and practitioner competence.

Issues in the Use of Computers in Consultation

Consultation is one of a school psychologist’s major responsibilities, and computer-related technology can be used to augment both the process and products of consultation. A successful consultation process requires ongoing monitoring and evaluation if it is to result in successful implementation of appropriate interventions (Zins & Erchul, 1995). Team consultation software (Aldrich, 2001) can be used to guide school-based teams through the steps of problem identification, understanding the issues underlying student difficulties, following through with interventions, and monitoring student progress. School psychologists and teachers participating in computer-mediated consultation should use e-mail to supplement, not replace, face-to-face consultation sessions. E-mail can facilitate the necessary ongoing monitoring with classroom teachers, collaboration with parents, and the functioning of school-based teams (Macklem & Kruger, 1997; Macklem, Kruger, & Struzziero, 2001).

It is essential for psychologists using computers to facilitate consultation processes to be sensitive to the possibility of violations of professional ethical standards. No matter how secure a network appears, it is impossible to guarantee that all messages will remain confidential. Consulting school psychologists should not share confidential information leading to the identification of a client or other person or organization with whom they have a confidential relationship unless they have obtained the prior consent of the person, or when disclosure cannot be avoided (APA, 1992). Further, psychologists share information only to the extent necessary to achieve the purposes of the consultation. To avoid a false sense of expertise, individuals who use team consultation software must have training in consultation and interventions and use the software to augment their already established expertise (Aldrich, 2001).

The Global School Psychology Network has applied ethical principles to the use of computer-mediated consultation specifically (Harvey & Kruger, 1997; Kruger & Struzziero, 1997; Macklem & Kruger, 1998; Macklem et al., 2001). In keeping with ethical principles, the Network uses a closed computer network and pseudonyms, and avoids including identifying information. They also obtain informed consent before linking identifiers with consultation notes, and train participants in how to compose messages and how to minimize mistakes when using the system.

Psychologists must attend to additional ethical considerations relevant to computer-mediated consultation. With increased instructional technology, personal computers, and Internet connections in classrooms, students easily can access challenging and exciting instructional methods. It is necessary for school psychologists to receive ongoing training and increase their knowledge of these programs to be able to recommend appropriate instructional interventions and modifications. The use of computer-related instruction should be recommended as a learning support, rather than as a replacement for teacher-pupil interactions critical for “healthy emotional and social growth and school success” (Jacob-Timm, 2000, p. 44).
Issues in the Use of Computer Technology in Research

The APA ethical principles (APA, 1992) regarding research are supported in the NASP ethical principles (NASP, 2000). Ethical guidelines specifically addressing research with human participants are provided by the Office of Protection from Research Risks (1993). These guidelines stipulate the review of proposed research by an Institutional Review Board that carefully scrutinizes proposals for evidence of informed consent, an assessment of risks and benefits to research participants, and methods to ensure confidentiality (Houser, 1998). In addition, psychologists who undertake research are obligated by their ethical code to practice within the realm of their professional competence and responsibility, consider the welfare of the client, provide freedom from coercion, ensure minimal risk, and provide post-data collection debriefing and desensitization.

Maintaining research participant confidentiality is more difficult with the advent of computer-related technology (Akeroyd, 1991). It is challenging to obtain enough information about participants to satisfy research needs, while at the same time maintaining enough ambiguity that other individuals who know the participants and obtain access to the data will not be able to identify them. It is crucial to bear in mind that many aspects of computers are beyond the control of the researcher, however, even when only those with appropriate clearance have access to the system (e.g., systems operators). If the data contain enough information, participants may be identifiable. The use of microcomputers, not networked, provides some additional security but is not absolute.

When psychologists conduct research via the Internet, a large number of ethical principles become imperiled, including informed consent, confidentiality, post-research debriefing, and desensitization. Some researchers have studied conversations on computer mediated communication networks without the permission of the individuals to participate in the research study (Bordia, 1996). Although presumably these are public forums, the question remains whether or not such research conforms to the guidelines of the protection of human participants mandated by the Office of Protection from Research Risks (1993). Thus, conducting research using computer and related technology calls into question several basic ethical principles, including the maintenance of privacy and confidentiality (Engels et al., 1984), as well as ensuring informed consent. On the other hand, medical research using large databases available on the Internet has made important contributions to epidemiology and has improved the effectiveness of genetic treatment and health policies. Restricted access to computerized medical data may preclude the use of such data for legitimate research to improve the quality of treatment of psychiatric disorders (Simon, Unuetzer, Young, & Pincus, 2000).

Using Computer Technology in Training and Supervision

Computer-related technology enables psychologists to have faster and easier access to resources. School psychologists who are remote from other practitioners can use the World Wide Web to join on-line discussions and electronic listserv mailing lists. They may subscribe to on-line literature databases, such as PsycInfo, and obtain easy access to current literature. On the negative side, the Internet and World Wide Web have no mechanisms for assessing, much less assuring, the validity of the information they contain. Frequently material on the Internet has no citations, and any unqualified person can pose as an expert without detection. In addition, the ease with which users obtain and subsequently download information from the Internet expands the opportunity to plagiarize the work of others. This may increase the temptations to violate ethical principles by school psychologists in training, while simultaneously making it difficult for professors to monitor the integrity of their students’ work.

Minimally, training programs need to ensure that their course curricula and training experiences provide ample coverage of technology-related issues, beginning in the earliest portion of the training sequence and continuing throughout the trainees’ preparation. Technical considerations should be incorporated into a wide variety of courses because,
as shown throughout the foregoing discussion, computer technology influences all of the major professional functions of a psychologist—assessment, intervention, consultation, research. Thus, courses that cover these domains must have substantial coverage of technology, including the ethical cornerstones of appropriate use. In addition, courses about professional ethics, issues, or role and function, should include ample coverage of this material.

The potential for the use of technology in the training of psychologists is immense. Many core courses including interviewing, interventions, mental status examinations, and test administration could be offered in a self-paced fashion on CD-ROMs (Belar, 1998). Even more interesting is the idea of using a virtual reality component to augment courses in test administration and psychotherapy. These would have the benefit of increased efficiency and the ethical benefit of reducing the possibility of damage to human “guinea pigs.” The opportunities for improved training using computer-related technology is appealing not only from the perspective of graduate preservice training, but also for the possibilities in continuing education, particularly given that rapidly advancing technology may render the knowledge obtained in graduate schools obsolete in a dozen years or so (Koocher & Keith-Spiegel, 1998).

On the other hand, if such programs result in the reduction of personal contact and relationship depth between professors and students, the education of psychologists may be compromised. This could result in unethical training procedures. Before using computer programs or virtual reality training programs, trainers would need to carefully evaluate the appropriateness of the content to ensure that the use of such software would be expected to enhance their work with trainees.

Technology offers new opportunities for supervision of school psychologists (Casey, Bloom, & Moan, 1994). Because self-reporting is frequently inaccurate, direct observation of supervisees facilitates supervision and has become the norm in supervising trainees. Direct observation may take the form of live supervision, as when a supervisor observes a supervisee while sitting either in the same room or behind a one-way mirror. It also can be delayed, as when supervisors review audio or videotapes of counseling, consultation, or assessment sessions. The use of telephones, “bug in the ear” devices, and networked computers to provide instantaneous feedback during live supervision has long been a common practice in counselor training (Bernard & Goodyear, 1998; Froehle, 1984) and could certainly be adopted by school psychology training programs. This type of immediate feedback enables supervisors to intervene during sessions. Future technologies, such as two-way wireless communications, may result in methods even less intrusive. However, issues of confidentiality are still of paramount concern. Before psychologists adopt new technologies, they must address concerns regarding possible broadcasting of messages and the permanence of client files on computers.

School psychologists also must take into account issues of confidentiality with delayed supervision by obtaining informed consent before any audio or video recording of sessions with supervisees, and this consent must include information regarding the use and disposal of tapes and disks. Sharing computer disks between supervisees and supervisors could result in paperless submission of case notes and case studies that augment the student’s portfolio, but also must be carefully safeguarded. Alternatively, peer supervision among school psychologists can take the form of participation in professional listserves. Casey et al. (1994) found that such participation increased feelings of connection, resulted in more frequent and thoughtful contact between supervisees and supervisors, expanded opportunities for collaboration, led to enthusiasm regarding topics of “conversation,” and increased satisfaction with efficient exchange of information. Finally, supervision in remote locations can be augmented via video-conferencing. Again, the difficulty of guaranteeing confidentiality will limit the utility of this method.

Essential ethical principles—involving welfare of the client, confidentiality, competence, responsibility, integrity—that undergird practice generally apply specifically to the use of computer technology. Just as it is impossible, today, to teach students about as yet un-
published instruments, it is not possible to teach them how to use future technology responsibly. Therefore, in training and supervision, it is vital to teach conceptually and to instruct students in ways of reasoning that prepare them to evaluate new and evolving technologies or applications. The pace of technological innovations is not likely to slow down.

**Summary**

School psychologists maintain the child’s welfare as paramount, and this extends to all computer applications. Psychologists should not replace traditional practice with technological advancements, but should consider using these advancements to enhance their practice or to work more efficiently. Computers are simply tools, and psychologists must be highly selective in choosing software, fully cognizant that the ultimate ethical responsibility lies with them.

Psychologists also must take measures to maintain confidentiality as they establish procedures to deal with computerized student records and reports, or use computers to communicate. Psychologists must be aware of and take steps to deal with the likelihood that computer technology will expose clients to unscrupulous and unqualified “therapists” and potentially inaccurate information on the Internet. Training programs should take advantage of computer technology’s potential for improving training procedures while simultaneously ensuring that graduates have a solid grounding in the critical use of technology in Internet communication, Internet information sources, test scoring and report writing, and computerized academic and socioemotional interventions.

In all areas of practice, it is of utmost importance to bear in mind that responsibility is nontransferable and resides with the psychologist, regardless of the technology involved. Fundamental ethical imperatives are essentially the same in the use of computer technology as in any professional work performed by psychologists.

**References**


Petroley, N. (1996). Cracking "secure" data is all too easy, even for inexperienced hackers (encryption schemes are not enough). InfoWorld, 18(4), 96.


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