

## Information and Communication Technologies in Social Work

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**Abstract:** *Information and communication technologies (ICTs) are electronic tools used to convey, manipulate and store information. The exponential growth of Internet access and ICTs greatly influenced social, political, and economic processes in the United States, and worldwide. Regardless of the level of practice, ICTs will continue influencing the careers of social workers and the clients they serve. ICTs have received some attention in the social work literature and curriculum, but we argue that this level of attention is not adequate given their ubiquity, growth and influence, specifically as it relates to upholding social work ethics. Significant attention is needed to help ensure social workers are responsive to the technological changes in the health care system, including the health care infrastructure and use of technology among clients. Social workers also need ICT competencies in order to effectively lead different types of social change initiatives or collaborate with professionals of other disciplines who are using ICTs as part of existing strategies. This paper also identifies potential pitfalls and challenges with respect to the adoption of ICTs, with recommendations for advancing their use in practice, education, and research.*

**Key Words:** *Information and communication technology, ethics, innovation, continuing education*

### INTRODUCTION

Information and communication technologies (ICTs) are broadly defined as technologies used to convey, manipulate and store data by electronic means (Open University, nd). This can include e-mail, SMS text messaging, video chat (e.g., Skype), and online social media (e.g., Facebook). It also includes all the different computing devices (e.g., laptop computers and smart phones) that carry out a wide range of communication and information functions. ICTs are pervasive in developed countries and considered integral in the efforts to build social, political and economic participation in developing countries. For example, the United Nations (2006) recognizes that ICTs are necessary for helping the world achieve eight time-specific goals for reducing poverty and other social and economic problems. The World Health Organization also sees ICTs as contributing to health improvement in developing countries in three ways: 1) as a way for doctors in developing countries to be trained in advances in practice; 2) as a delivery mechanism to poor and remote areas; and 3) to increase transparency and efficiency of governance, which is critical for the delivery of publicly provided health services (Chandrasekhar & Ghosh, 2001).

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With the growth of the Internet, a wide range of ICTs have transformed social relationships, education, and the dissemination of information. It is argued that *online* relationships can have properties of intimacy, richness, and liberation that rival or exceed *offline* relationships, as online relationships tend to be based more on mutual interest rather than physical proximity (Bargh, McKenna, & Fitzsimons, 2002). In the popular book *The World is Flat*, Thomas Friedman (2005) argues that collaborative technologies – i.e., interactions between people supported by ICTs – have expanded the possibilities for forming new businesses and distributing valued goods and services for anyone. Educational theorist and technologist Curtis Bonk recently published a highly insightful and influential book called *The World is Open* (Bonk, 2009). Bonk (2009) argues that, with the development of ICTs, even the most remote areas of the world have opportunities to gain access to the highest quality learning resources. Proceedings from the 2004 International Workshop on Improving E-Learning Policies and Programs also showed that ICTs are helping transform governments through workforce transformation, citizen education, and service optimization (Asian Development Bank Institute, 2004). Innumerable accounts and data sources demonstrate that ICTs have reduced boundaries and increased access to information and education (see Bonk, 2009; Friedman, 2005), which has led the United Nations Educational, Scientific, and Cultural Organization (UNESCO) to focus on assisting Member States in developing robust policies in ICTs and higher education (UNESCO, nd).

Although ICTs and the growth of the Internet are not without problems, a reality remains that both will continue to shape the global community. Other disciplines have recognized the importance of ICT and consider it to be a key part of professional development. For example, the National Business Education Association (NBEA) states: "mastery of technology tools is a requirement rather than an option for enhancing academic, business, and personal performance" (NBEA, 2007, p. 88). Resources are available that speak to the role of technology in the social work curriculum (e.g., Coe Regan & Freddolino, 2008; Faux & Black-Hughes, 2000; Giffords, 1998; Marson, 1997; Sapey, 1997) and in research and practice (e.g., *Journal of Technology in Human Services*). The National Association of Social Workers (NASW) and Association of Social Work Boards published a set of ten standards regarding technology and social work practice, which serves as a guide for the social work profession to incorporate technology into its various missions (NASW, 2005).

Despite this interest in technology, the attention that the field of social work has given to ICTs in research, education, and practice does not match the efforts of other national and international organizations that view ICTs as critical to improving the lives of disadvantaged and disenfranchised persons, and necessary for all forms of civil engagement. The Council on Social Work Education (CSWE) calls for the integration of computer technology into social work education, but there are no explicit standards for integration or student learning (CSWE, 2008; see also Beaulaurier & Radisch, 2005). Asking other social workers, social work students, and social work educators can easily reveal that many are unaware of the NASW technology standards. A review of syllabi of social work courses will also show that ICTs, beyond e-mail communication, are generally not present in the educational environment. Consequently, social work students

are not being adequately prepared in the use of ICTs, which are integral in the workforce today and will become even more important over time (Parrot & Madoc-Jones, 2008).

In this paper, we argue that ICTs are of critical importance to advancing the field of social work. Specifically, they provide efficient and effective ways for organizing people and ideas, offers greater access to knowledge and education, and increases the efficiency and collaboration of our work. This paper takes the position that many aspects of the NASW Code of Ethics (1999) can be advanced through careful and thoughtful application of ICTs. Thus, competencies with ICTs and ICT literacy should be required learning outcomes in social work education and continuing education. This includes having the knowledge and skills to understand and use ICTs to achieve a specific purpose (i.e., competencies), in addition to knowing the major concepts and language associated with ICT (i.e., literacy). Within this framework, this paper identifies specific aspects of the Code of Ethics (1999), showing how ICTs play a critical role in achieving the desired values and principles. Recommendations on how ICTs can be more strategically incorporated in the classroom, along with potential pitfalls, are discussed.

## OVERVIEW OF ICTs

### ICTs in Society

Computer technology is becoming more efficient, productive, and cheaper. Advances in technology are producing more powerful computing devices to create a dynamic virtual network that allows people all over the world to communicate and share information with each other. The growth and importance of the technology and the virtual network are underscored by two important laws. First is Moore's Law, which states that "integrated circuit technology advancements would enable the semiconductor industry to double the number of components on every chip 18 to 24 months" (Coyle, 2009, p. 559). Essentially, this means that the speed and productivity of a computer increases two-fold every 1.5 to 2 years. While such growth may not be sustained indefinitely, the exponential growth of technology realized thus far has reshaped our society and will continue to be a dynamic force in future generations. It is important that social workers understand the role that technology plays in shaping the lives of clients and the services that are delivered. The second law, Metcalfe's Law, states "the value of a network increases in proportion to the square of the number of people connected to the network" (Coyle, 2009, p. 559). These rapidly developing technologies, and the individuals that utilize them, are producing virtual networks of greater size and value.

At the time Granovetter published his classic study on networks and employment (Granovetter, 1973), ICTs played almost no role in developing and maintaining network relationships. Today, Internet sites such as LinkedIn ([www.linkedin.com](http://www.linkedin.com)) produce vast social networks that provide opportunities for professionals and employers to advertise and communicate. To effectively use social networks, whether for obtaining employment, securing resources, or obtaining information, social workers need to understand the capabilities of these networks, and how they can be effectively understood, managed, and utilized within a digital environment.

### **ICTs in Higher Education**

Applications of ICTs for institutions of higher education have grown tremendously and will continue to shape the delivery of social work education. This is already realized through emerging distance education courses and other strategies for using technology in the social work classroom (e.g., Stocks & Freddolino, 1999; Wernet, Olliges, & Delicath, 2000). Courses offered online greatly assist students who are long distance commuters or students with disabilities. In both distance and local learning, many educators utilize course management systems (e.g., Sakai, Moodle, and Blackboard) for managing virtually every aspect of a course. These course management systems often provide students with tools to assist each other in learning the course material (e.g., synchronous and asynchronous communication). Largely because of these opportunities, some have even predicted that ICTs may eventually eclipse the traditional college classroom (see Bonk, 2009).

Within colleges and universities, ICTs serve both administrative and academic functions. Students are able to accomplish a variety of tasks using computer networks that save the institution time and money, such as facilitating billing and payments to the school, requesting and obtaining financial aid and/or scholarships, class scheduling, requesting official transcripts, selecting housing locations, etc. With regard to social work research, ICTs are part of an infrastructure for newer research methodologies (e.g. Geographic Information Systems, computer simulations, network modeling), making it crucial for universities to harness technology to advance their research missions (Videka, Blackburn, & Moran, 2008). ICTs have the potential to help facilitate a more productive and effective learning environment for both social work students and professors.

### **Continued Growth of ICTs**

Technology innovations are encouraging a trend towards the digitization of the world's information and knowledge, essentially creating stores of the accumulated human experience (Coyle, 2009). Computer technology has become integrated into the modern global society, serving a wide range of functions and purposes. With such growth are extensive arguments that Internet access is a human right because it is necessary to fully participate in today's society.<sup>1</sup> The Federal Communications Commission (FCC) announced plans, in conjunction with the US Department of Agriculture and Rural Development, to create a national broadband internet policy to help ensure all United States citizens have equal access to high speed internet (Federal Communication Commission, 2009). This policy, made possible through the Recovery and Reinvestment Act of 2009, is specifically tailored for citizens who live in rural or underserved areas (Federal Communications Commission, 2009).

As the use of ICTs continues to grow, it is important to realize the importance of convergence, and how convergence shapes the transmission of information and service delivery. This concept refers to “the coming together of information technologies

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<sup>1</sup> During the preparation of this manuscript, a search on Google using the following expression resulted in 35,100 hits: "internet access" and "human rights".

(computer, consumer electronics, telecommunications) and gadgets (PC, TV, telephone), leading to a culmination of the digital revolution in which all types of information (voice, video, data) will travel on the same network” (Coyle, 2009, p. 550). The creation and utilization of *smart phones* (e.g., BlackBerry, iPhone) is a key example of convergence, where one device has multiple functions and different applications, bringing technologies such as social networking, email, videorecording, and traditional cellular telephone service into one's pocket.

Individuals of all age ranges are heavily involved in maintaining social connections through internet networks. For example, social networking websites, such as Facebook and MySpace, are used widely and boast highly active visitor populations. Facebook and MySpace each reached over 100 million active visitors by April of 2008 (Schonfield, 2008). The Internet and other telecommunication networks have an enormous impact on defining the future of human interaction, and to date, these changes have largely been positive across social contexts (Bargh, 2004). The field of social work needs to understand how these changes are influencing and will continue to influence all aspects of social work. As it relates to social work, it is critically important that such a research agenda builds an understanding of both the positive and negative impacts of human interaction.

### **ICTs AND SOCIAL WORK ETHICS**

The growth of the Internet and use of ICTs has changed how we interact with each other and how we work (Bargh & McKenna, 2004). As the millennium generation (also known as generation Y) is raised in an environment with highly complex networks that make use of technology, their importance will continue to grow (Weller, 2005). The field of social work faces a critical need to incorporate ICTs into training social workers, delivering social work services, and the conduct of social work research. It is clear that ICTs, when thoughtfully and effectively used, can improve the various practice methods of social work (i.e., delivery of services, education, and research). Although the potential uses of ICTs have been well defined, to date there has been little discussion of the impact of ICTs on the principles of social work ethics. Provided below are specific examples of how ICTs appear necessary for ensuring the delivery of ethical social work practice. We highlight relevant aspects of the NASW Code of Ethics (1999) and provide specific examples.

*Ethical Principle: Social workers recognize the central importance of human relationships.* ICTs play a major role in human relationships, which has implications for social work practice. More specifically, increasing numbers of people are engaged in relationships that are mediated by some form of ICT, including electronic messages (e-mail), SMS text message, social networking (e.g., Facebook), instant messaging service, or video chat (e.g., Skype). Social workers need to have an understanding of the roles that such ICTs may play in the lives of their clients. This may involve understanding how communication processes are different compared to face-to-face interactions; such as the use of emoticons – that is, characters and symbols use to express non-verbals.

Social workers also need to understand that many relationships develop and may occur exclusively online. For example, the Internet allows groups to convene around a common purpose, including the provision of self-help, social support, and psychoeducation. Depending on their format, such groups may be referred to as electronic groups, listservs, forums, and mail groups. The proliferation of these groups can be attributed to anonymity and their ease of access, particularly for persons with mobility problems, rare disorders, and those without access to face-to-face groups or professional services (Perron & Powell, 2008). A number of studies have tracked the patterns of communication within online groups, and have found that many of the processes used are the same as those used in face-to-face self-help groups (Finn, 1999; Perron, 2002; Salem, Bogat, & Reid, 1997). Given the prevalence of online relationships, social workers and other human service professionals must be aware of the positive (e.g., social support, see Perron, 2002), and negative effects (e.g., cyber-bullying, see Hinduja & Patchin, 2008) they have on their individual clients, with a clear understanding of how relationships are mediated by ICTs. Currently, the social work curricula emphasize the importance and development of in-person relationships, while little attention is given to understanding the role of online relationships and computer-mediated relationships.

*Ethical standard 1.07: (c) Social workers should protect the confidentiality of clients' written and electronic records and other sensitive information. (l) Social workers should take reasonable steps to ensure that clients' records are stored in a secure location and that clients' records are not available to others who are not authorized to have access.* Increasing amounts of information are being saved and shared electronically (Rindfleisch, 1997). While training social workers in all aspects of information security would be impractical, it is necessary that they have requisite knowledge for raising fundamental questions about electronic security, and to know when and where to seek additional information. This is particularly true in agencies that lack funding and resources to support information technology specialists. Without this basic knowledge, social workers can compromise the confidentiality of their client records or other important organizational resources, resulting in significant legal consequences and ethical violations.

*Ethical standard 1.15: Social workers should make reasonable efforts to ensure continuity of services in the event that services are interrupted by factors such as unavailability, relocation, illness, disability, or death.* Natural disasters and personal factors can easily disrupt the continuity of social work services, and clients living in highly rural areas experience lack of services. ICTs provide options to help maintain or re-establish services during times of personal or community crises, which is described in numerous disaster management reports (e.g., Government of India, National Disaster Management Division, nd; United Nations, 2006; Wattergama, 2007). For example, if a service can be delivered electronically (e.g., psychotherapy) the only service barriers are ensuring that the client and service provider have computers or a mobile device with an Internet connection. Furthermore, the utility of virtual services such as remote psychotherapy (or more generally, "tele-mental health") is not limited to times of disaster. In fact, tele-mental health is used nationally for routine care in the Veterans Health Administration, in order to provide services to veterans in underserved areas (Department

of Veterans Affairs, 2008.) To further illustrate the opportunity to deliver clinical services over ICTs, recent surveys estimate that about 60% of Americans used the internet to access health information in 2008 (Fox, 2009), and about half of all healthcare consumers endorsed that they would be likely to seek healthcare through online consultations if these services were made available (PriceWaterHouseCoopers Health Research Institute, 2009).

*Ethical standard 2.05: Social workers should seek the advice and counsel of colleagues whenever such consultation is in the best interests of clients.* ICTs offer greater flexibility and support for seeking professional consultations, and numerous states permit online supervision. The sheer size of the online world suggests that no matter how specialized one's area of focus, like-minded colleagues can be located, and communities of practice may be established. For example, hoarding behavior is a fairly rare event in mental health services, particularly in comparison to other expressions of psychopathology (Steketee & Frost, 2003). Thus, issues on treating this problem and working with family members are rarely covered in the classroom. In the absence of ICTs, few training or consultation opportunities exist, but a simple search of hoarding as a mental disorder can reveal a wide range of potentially useful resources (including, but not limited to): contact information for experts and directories on hoarding behavior; video lectures on treatment; extensive collection of YouTube videos on providing information and personal accounts; and online support groups. Similar searches of other highly specialized areas such as disaster planning in social work, forensic interviewing of abused children, and inhalant abuse have also revealed a wide range of resources that are unlikely to be available to social workers in their local area.

*Ethical standard 3.07(a): Social work administrators should advocate within and outside their agencies for adequate resources to meet clients' needs.* Creative uses of the Internet are emerging to support advocacy. For example, the online service GiveAnon (<http://givinganon.org/>) uses the powers of ICT to allow donors to connect with recipients, contributing financially, directly, and anonymously. ICT's ability to mask the identity of an online person or entity is creatively used in this case to help donors to provide assistance without revealing their own identity. Thus, they can serve as a powerful organizing and advocacy tool. Social workers are positioned to use this tool, and many others like it, to address various needs and solve problems. Further integration of technology in the curriculum on organizing and advocacy with ICTs can have potentially significant payoffs. A recent article in a leading health services journal, *Health Affairs*, Hawn (2009) describes how Twitter, Facebook, and other social media are reshaping health care. At the time this manuscript was written, it was reported that Chicago's Department of Human Services began using a system that enabled human service providers, agency coalitions and the community to manage client and resource data in real-time (Bowman Systems, 2008). Having real-time knowledge of available resources is critical for making effective and efficient referrals, particularly for crisis issues, such as psychiatric and substance use conditions, and housing.

Ensuring adequate resources to meet clients' needs must be considered within the overall budget of an organization. ICTs are a necessary part of most social work service agencies. Many agencies have large expenses related to their ICT needs, especially

software upgrades. However, organizations can take advantage of the benefits of open source software to decrease costs related to information technology. Open source software "is a development method for software that harnesses the power of distributed peer review and transparency of process. The promise of open source is better quality, higher reliability, more flexibility, lower cost, and an end to predatory vendor lock-in permits users to use, change, and improve the software, and to redistribute it in modified or unmodified forms" (Open Source Initiative, nd; see also Lakhani & von Hippel, 2003). From a user's standpoint, this software is freely available and can be modified to meet a given need. Many agencies use Microsoft Office but cannot afford expensive software or hardware upgrades that are required over time. As an alternative, the same agency could use an open source software package (freely available), such as OpenOffice (www.openoffice.org), which is compatible with the Microsoft Office suite.

Cloud computing alternatives are another option – that is, software services that are provided over the Internet. The premise of cloud computing is that full software packages (e.g. Office suites, database applications) are provided over the internet, eliminating the need for expensive equipment to be purchased and maintained locally (e.g., intranet servers; Hayes, 2008). Google, for example, provides an entire set of office-related applications called Google Docs (<http://docs.google.com>) that can do word processing, spread sheets, and presentations. These applications do not ever need to be installed on a local computer or upgraded by the user. These applications are compatible with other proprietary software, most notably Microsoft Office. Although not typical, this major Cloud computing service is freely available to anybody with a Gmail email account (also free), and the programs and files can be accessed from any computer with an Internet connection. Social workers should have knowledge of such resources and understand how they may be a reasonable alternative to address existing agency needs, in addition to understanding the legal issues of remote data storage and security.

*Ethical standard 3.08. Social work administrators and supervisors should take reasonable steps to provide or arrange for continuing education and staff development for all staff for whom they are responsible. Continuing education and staff development should address current knowledge and emerging developments related to social work practice and ethics.* A growing body of research shows that distance education can be as effective or more effective than face-to-face education (Bernard et al., 2004). Moreover, the educational literature is pointing to the changing characteristics of our students. For example, students of the Net Generation and Millennial Generation, who are the largest age group of consumers of social work education today, have different learning expectations and learning styles that will require social work faculty to change how they teach (see Diaz et al., 2009). Distance education is also increasingly relying on and innovating with ICTs, to facilitate student-to-teacher and student-to-student interactions, and collaborations. The field of social work could enhance its overall educational infrastructure through the effective use of ICTs. This would allow access to opportunities that would not be available or affordable using traditional face-to-face formats. The use of ICTs undoubtedly gives greater access to higher quality educational opportunities (Asian Development Bank, 2004; Bonk, 2009).

*Ethical standard 4.01. Social workers should strive to become and remain proficient in professional practice and the performance of professional functions. Social workers should critically examine and keep current with emerging knowledge relevant to social work. Social workers should routinely review the professional literature and participate in continuing education relevant to social work practice and social work ethics.* Social workers have a daunting task of remaining current with the research in their area of practice. The reality is that the majority of research findings are disseminated and accessed electronically via the Internet. Many of the barriers that social workers face in accessing and even understanding the research may be overcome, in part, through the efficient and effective use of ICTs. For example, while many journals require expensive subscriptions, a growing body of journals are available online in an open access format. This is an important and complex philosophy; the immediate relevance is that open access gives social workers free and unlimited access to scientific articles (e.g., [www.biomedcentral.com](http://www.biomedcentral.com)) which have been traditionally been available on a subscription basis (see Suber, 2003). Social workers have access to a wide range of electronic video and audio recording, also known as videocasts and podcasts, that discuss recent research developments. For example, social workers interested in psychiatric issues can easily find collections of grand rounds lectures archived by departments of psychiatry at medical schools throughout the United States. Many journals and other science-related newsrooms offer scientific findings in the form of emailed newsletters and electronic news feeds. Social workers can identify and subscribe to specific news feeds using real simple syndication (i.e., RSS feeders) that link to news articles in their area of practice. These resources, and many others, are freely available. However, social workers must have competencies with ICTs in order to identify and use quality resources.

## **FUTURE DIRECTIONS**

### **Developing ICT Competencies and Literacy**

Given the growth and impact of ICTs in society and their implications for social work ethics, it is critical that social workers have both competency and literacy with ICTs. While competency refers to being able to use a given technology, literacy refers to the ability to access, manage, integrate, evaluate, and create information (Chinien & Boutin, 2003). It is beyond the scope of this paper to provide a coherent and comprehensive strategy for developing social worker competencies and literacies with ICTs. However, the literature on ICTs and educational innovations in higher education provide extensive resources that are generalizable to the field of social work. Social work educators will need to be proficient with ICTs in order to design assignments, activities, and projects that reflect the real-world use of ICTs. Beyond higher education, continuing education opportunities that respond to recent technology advances are also necessary in order to help social workers stay current with the most relevant and useful technologies. For example, by having basic competencies and literacies, social workers and social work students who want further introduction to ICTs can review the complete curriculum materials for a course entitled *ICTs in Everyday Life* through the Open University (<http://www.open.ac.uk/>), in addition to having access to materials for other courses. This is part of the open education movement that views education as a public good, and

Internet technology provides the opportunity to share, use, and reuse knowledge (Creative Commons, nd). In absence of ICT competency and literacy, social workers will miss important educational opportunities for themselves and their clients.

### **Challenges and Pitfalls of ICTs**

Despite the continued growth and expansion of technologies, many disenfranchised and disadvantaged persons still do not have access to ICTs or the Internet. While initiatives in the United States, and other respective countries around the world, are attempting to provide access to everybody, significant disparities within and across countries exist, particularly in African regions that have low Internet market penetration (Alden, 2004). By developing a stronger focus and infrastructure around ICTs in social work education, social workers will be better prepared to participate in a range of policy initiatives to support activities that seek to address these disparities in social, economic and political participation.

In the training of social workers in ICTs, it is also important to recognize that not all technologies have resulted in added value to education. For example, Kirkup and Kirkwood (2005) argue that ICTs have failed to produce the radical changes in learning and teaching that many anticipated. This underscores the importance of ensuring ICT literacy among social workers – that is, having the ability to access and evaluate information using ICTs (Chinien & Boutin, 2003). This will help social workers select the optimal tools from a wide range of options.

In the provision of clinical services, social workers must be aware that clinical needs can be (and currently are being) met through technologies such as telehealth and e-mail consultations (McCarty & Clancy, 2002). Recent surveys also suggest that clients welcome these new treatment options (Fox, 2009). Further research is still needed to better understand the effectiveness of Internet-mediated services. For example, the effectiveness of online psychotherapy shows promise but the existing research to date remains inconclusive (Bee et al., 2008; Mohr, Vella, Hart, Heckman, & Simon, 2008). The social worker using such technologies must consider how legal, ethical, and social principles apply, in addition to the advantages and disadvantages of online health services (see Car & Sheikh, 2004). Currently, the social work curriculum focuses almost exclusively on relationships in the absence of ICT mediated exchanges, but the growth of technology within the health care system makes these matters a priority in social work education. If such issues aren't addressed, the field of social work is at risk of not remaining competitive in the provision of health and psychosocial services. Moreover, without proper training, social workers in this arena of practice are at risk of delivering poor quality services or facing legal or ethical issues.

Social work researchers and practitioners should work in earnest to document both the successful and unsuccessful initiatives involving ICTs in the field. Case examples can provide the basis for understanding how ICTs can be integrated to enhance various aspects of the process. Unfortunately, the current method of disseminating new information and practice is primarily through professional journals, where the general timeline of an article (the time it takes to have a manuscript submitted, reviewed, and

subsequently published) will likely not be quick enough to keep up with the advances in technology. It behooves the field of social work to explore options to connect with other researchers and practitioners to share knowledge, particularly with social media.

## CONCLUSION

The field of social work education, research, and practice is surrounded by rapid developments in ICTs. In order to ensure that social work practice upholds the standards and values of social work ethics, it is necessary that social workers are competent and literate in ICTs. This will position social workers at all levels of practice to help advance the lives of disenfranchised and disadvantaged persons through greater access to education, knowledge and other resources. While numerous ICTs have failed to realize their expected potential, the ongoing rapid growth of ICTs has created a context in which social workers cannot resist technology, but must understand the role it plays in everyday life.

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