



Technology for Social Work Interventions

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Introduction

The growing trend of using technology in social work interventions is rapidly increasing. The impact of technology goes beyond increased efficacy, as new technologies urge practitioners to expand their abilities and change how they design and implement interventions. While on a global scale technology has evolved quickly in just a few decades, social work interventions are also becoming more sophisticated and evidence based. In the context of “technology for social work interventions,” “technology” primarily refers to information and communications technology (ICT). In the 21st century there are newly developed academic references, research studies, competency standards and ethical guidelines, which make “technology-supported social work interventions” an emerging practice domain. There are various types of technology-support interventions, some are merely technologically adapted, and some are driven by artificial intelligence systems. Overall, many technology-supported interventions indicate good outcomes and have internal validity, but there is much room for improvement in both evaluation designs and theorization. There are also emerging challenges and opportunities arising from technology-supported interventions, such as digital divides, practitioners’ competence issues, jurisdictional boundary issues, and various ethical issues.

Introductory Work

In the discourse of technology for social work interventions, “intervention” generally refers to any activity designed to produce changes, and “technology” is an evolving construct, which mainly refers to information and communications technology (ICT). Schoech 2014, the founding editor of the *Journal of Technology in Human Services*, noted that there were different technology paradigms in the late 20th and early 21st centuries, including the statistical analysis era in the 1960s, the information systems era in the 1970s and 1980s, the Internet era in the 1990s, and the mobile era after the 2010s. These different technology eras, however, are not simply replaced by one another, but they have evolved and co-existed together. As Ballantyne, et al. 2017 points out, we are in an age of technology fusion, which blurs boundaries between different disciplines and even between physical and cyber domains. ICT is used as an umbrella term, referring to the convergence of audio-visual broadcast systems, telephones, and computer networks through a single cabling or linking system, which is an extended synonym for information technology (IT); however, it stresses the role of unified communications and the integration of telecommunications. This does not mean that other forms of technology are not relevant or applicable to social work, as the essence of social work is about social relationships, and recent technologies related to social networking and information exchanges have occupied a more central position in all of our lives than other forms of technology. Despite the 21st-century reality of increasing uses of technology in social work, the status of such use in social work has been variegated. Parrott and Madoc-Jones 2008 perceives that ICT has been viewed with reluctance and has been minimally used in social work for primarily managerial purposes. West and Heath 2011 notes that social work theories and models are outdated and that the profession has difficulty understanding and responding to current issues of globalization and ICT. It is not until the 21st century that technology uses in social work interventions have a more positive reception among a growing circle of social work practitioners and scholars. This momentum has gradually consolidated as an identified theme of the Grand Challenges for Social Work initiative led by the American Academy of Social Work and Social Welfare in 2015 (see online), which is a call to action for people in the United States to work together to tackle their nation’s social problems. Berzin, et al. 2015, authors of one of the Grand Challenge papers, almost universally promote the positive potential of using ICT in social work practice and discussed how these could benefit society overall. Yet Goldkind and Chan 2017 notes that new and emerging technology brings both risks and opportunities, pointing out that technology has been reshaping the landscapes of social work administration, practice, education, and ethics daily; they contend that as a result, new research is urgently needed.

Ballantyne, N., Y. C. Wong, and G. Morgan. 2017. Human services and the fourth industrial revolution: From husITa 1987 to husITa 2016. *Journal of Technology in Human Services* 35:1–7.

This editorial overview reviews the history and development of technology use in human services in the past decades, and presents articles selected from the husITa 2016 conference.

Berzin, S., J. Singer, and C. Chan. 2015. Practice innovation through technology in the digital age: A grand challenge for social work. *Grand Challenges for Social Work Initiative Working Paper No. 12.*

This paper describes the potential and various challenges of using ICT in social work practice and discusses how these benefit society. Suggests ways to achieve progress.

Giffords, E. D. 2009. The Internet and social work: The next generation. *Families in Society: The Journal of Contemporary Social Services* 90:413–418.

Describes Web 2.0 technologies such as blogs, social networking sites, and discusses how the Internet is changing social relationships. Stresses the importance for social work practitioners to understand this new medium.

Goldkind, L., and C. Chan. 2017. The *Journal of Technology in Human Services* turns a new page. *Journal of Technology in Human Services* 35.4: 271–276.

Summarizes the state-of-the-art of technology in human services in a concise manner, and it introduces how the fast-changing domains have already disrupted service admin, practice, education, research methodology, and ethics in no small measure.

Goldkind, L., and L. Wolfv. 2015. A digital environment approach: Four technologies that will disrupt social work practice. *Social Work* 60:85–87.

This overview discusses the implications of a technology-supported culture for designing social work curricula and training and also how to make these innovations more tangible and available to both agencies and practitioners.

Parrott, L., and I. Madoc-Jones. 2008. Reclaiming information and communication technologies for empowering social work practice. *Journal of Social Work* 8:181–197.

Points out that ICT has been viewed with suspicion and is somewhat used in social work, primarily for managerial purposes. It contends that using ICT in social work will help address issues of service user powerlessness and economic and social exclusion.

Schoech, D. 2014. Human services technology, 1980+: Retrospective and perspective. *Journal of Technology in Human Services* 32:240–253.

Reviews the author's experience as the editor of the *Journal of Technology in Human Services* and offers future directions for research and practice with technology.

West, D., and D. Heath. 2011. Theoretical pathways to the future: Globalization, ICT and social work theory and practice. *Journal of Social Work* 11:209–221.

Points out that social workers are faced with challenges such as speed of response, the use of the Internet, accountability and cost effectiveness but that many of our social work theories and models are outdated.

Textbooks

There are some textbooks introducing the ways that technology can be used in social work. Most of them focus on online counselling, such as Barnard 2010, Jones and Stokes 2009, and Kraus, et al. 2004. However, only a few specifically focus on technology use in social work, such as Hill and Shaw 2011 and Watling and Rogers 2012. These “technology in social work” textbooks are mainly concerned with technology application in general practice processes, administration, or education. Applications in interventions usually occupy a smaller part of their subject matter and basically cover examples in North America and the United Kingdom.

Barnard, J. 2010. *Online counselling: A guide for therapists*. MTC.

This very short booklet provides guidelines for practitioners who are using the Internet to provide therapeutic services and discusses important topical issues regarding online counselling services.

Hill, A., and I. Shaw. 2011. *Social work & ICT*. Thousand Oaks, CA: SAGE.

Describes various ICT skills, explains why ICT is used, and illustrates how this affects practice and service users in the social work profession.

Jones, G., and A. Stokes. 2009. *Online counselling: A handbook for practitioners*. New York: Palgrave Macmillan.

This focuses on many technological and therapeutic aspects of online counseling and provides practical step-by-step exercises and candid advice for practitioners.

Kraus, R., J. S. Zack, and G. Stricker. 2004. *Online counseling: A handbook for mental health professionals*. Boston: Elsevier Academic.

Provides an overview of current research on the use and effectiveness of online counseling and discusses the characteristics of behavior and communication. It also illustrates practical skill sets required for mental health counselling professionals.

Watling, S., and J. Rogers. 2012. *Social work in a digital society*. London: SAGE.

Illustrates how the Internet impacts social work education and practice and how the core value-base of social work may have a positive effect on service users, who engage clients with services empowered by current technologies.

Journals

Technology in social work intervention has occupied a rather marginal position in social work journals, until the second decade of the 21st century. In many professional journals, technology is not even a word search option in the pre-set keyword menus provided by core journal submission platforms. In addition, according to husITa (Human Services Information Technology Applications), their official journal—*Journal of Technology in Human Services*—was not even included by the Web of Science (WOS) database before 2016, and it was merely categorized under “Computing” or “Miscellaneous,” before 2017. The study of technology in social work has been categorized under “Social Work” in the WOS research area classification since September 2017. The following are some journals specialized in technology use in social work interventions and some special issues in other social work journals.

Journals Specialized in Technology Use in Social Work Interventions

At present, the *Journal of Technology in Human Services* is the only peer-reviewed journal that focuses solely on technology use in social work practice. The expertise of their diverse editorial board of this journal is situated at the intersection of different core domains such as information technology, human services, and social development. There are other peer-reviewed journals that are also closely related to this subject matter in social work, but they are more concerned with the interactions between technology and human behavior and less focused on purposeful and planned interventions using technology in human service context.

Computers in Human Behavior.

This journal publishes original theoretical works, research reports, literature reviews, software reviews, book reviews, and announcements about the use of computers from primarily psychological perspectives.

Journal of Technology in Human Services.

Explores the potential of computer and telecommunications technologies in mental health, social work, developmental disabilities, social welfare, addictions, education, and other human services.

Journal of Technology Research.

Focuses on contemporary issues in information technology, including technology implementation, development, financial justification, and functional evaluation in business environments.

Special Issues in Other Social Work Journals

There are some special issues published in other social work journals that address technology use in direct social work practice. Some of them discuss concepts and potential use, some of them focus on issues and processes, and some of them are more concerned with intervention outcomes. In social work journals, Dunlop and Holosko 2006 was the earliest special issue devoted to ICT application in social work, and then other special issues appeared almost a decade later, after their 2014 publication.

Benej, M., A. Cibrano, L. Goldkind, S. J. Kim, S. Matorin, and S. Schwartz, eds. 2014. Maintaining client-centered practice in a computer-centered world: The place for technology in social work practice—challenges, opportunities, and future steps. *Special issue: Social Work in Health Care* 53.

Highlights various challenges, opportunities, and future issues of using technology in social work.

Dunlop, J. M., and M. J. Holosko, ed. 2006. Information technology and evidence-based social work practice. *Journal of Evidence-Based Social Work* 3.

This special issue is the earliest social work journal published that specifically focused on ICT in social work. It presents a range of articles that demonstrate how technology may be used to effect more competent social work practice.

Goldkind, L., and J. McNutt, ed. 2015. Technology, the Internet and social work practice. *Special issue: Advances in Social Work* 16.

Includes articles related to ICT in social work practice, which cover areas of topical interest to social work practitioners, including ethics and social justice, as well as new areas such as Geographic Information Systems (GIS) and gaming.

Groshong, L. W., and F. Mishna, ed. 2015. *Entering the digital world: Cybertechnology and clinical social work practice*. *Special issue: Clinical Social Work Journal* 43.

This issue includes articles related to social work and cybertechnology, particularly focusing on issues pertaining to clinical practice, ethics, and education.

McAuliffe, D., and S. Nipperess, ed. 2015. *eProfessionalism and the ethical use of technology in social work*. *Special issue: Australian Social Work* 68.

Includes a set of articles focusing on the intersection between ethics and technology in social work practice, education, and research.

Online Databases

There are emerging online databases that serve to introduce portals to search and apps for social work interventions (e.g., Mental Health Apps Resources) and others that evaluate apps for social work interventions (e.g., RANKED Health). In the typical online databases for evidence-based health-care interventions, such as the Cochrane Collaboration or the Campbell Collaboration, technology-supported intervention is not an organized theme in their existing classification systems. However, one could identify technology-supported intervention programs by entering proper keywords in their respective search engines.

Campbell Collaboration.

The Campbell Collaboration is a large nonprofit organization that aims to help people make well-informed decisions about the effects of interventions in the social, behavioral, and educational arenas. Their group conducts systematic reviews and other evidence synthesis, and publishes them in the Campbell Library, which is a resource which is available online for free.

Cochrane Collaboration

Cochrane database is operated by the Cochrane Collaboration, which is registered in England as a company limited by guarantee. The Cochrane Collaboration consists of a global network of researchers and professionals who conduct systematic reviews of randomized controlled trials (RCTs) of health-care interventions and publishes them in The Cochrane Library, which is available online for free.

Mental Health Apps Resources.

This database platform is run by the Zur Institute, which is approved by the American Psychological Association and supports continuing education for psychologists. This platform aims to introduce mental health applications and resources for psychologists, MFTs, counselors, LPCs and social workers based on the functions of those resources but does not offer metrics to rate the quality of these resources.

RANKED Health.

This database platform is run by the Hacking Medicine Institute, a non-profit organization developed by the Hacking Medicine program of Massachusetts Institute of Technology (MIT). This platform collects, reviews, and ranks health-care-focused applications, supporting patients and service providers to adopt clinically proven digital health solutions.

Standards

There are basically two types of standards regarding technology use in social work. One is more about technical competencies, such as the standards stated by the National Association of Social Workers (NASW 2017). The other is more about the ethical uses of technology, such as the social media policy published by the British Association of Social Workers (BASW 2013, cited under Ethical Guidelines).

Competency Standards

The National Association of Social Workers (NASW 2017) in the United States, and the Quality Assurance Agency for Higher Education (QAA 2016) in the United Kingdom, have written minimal standards about social workers' abilities to use ICT to support their learning and practices (NASW 2017, QAA 2016).

NASW. 2017. *NASW, ASWB, CSWE, & CSWA Standards for technology in social work practice*. Washington, DC: National Association of Social Workers.

This document covers a wide range of aspects in technology-supported social work, such as ethics, social workers' competencies, management, and information policy.

QAA. 2016. *Subject benchmark statement: Social work*. London: The Quality Assurance Agency for Higher Education (QAA).

This benchmarked statement outlines different aspects of social work competencies, and it has a substantive content section covering social workers' abilities to use ICT.

Ethical Guidelines

Different countries and regional jurisdictions tend to imply different approaches to offering ethical guidelines for online practice use. In some countries, social work has a set of mandatory ethical standards; in others there are only guidelines; yet still others have no regulations at all. The Australian Association of Social Workers (AASW) (AASW 2013a and AASW 2013b), and the British Association of Social Workers (BASW 2013), have respectively developed social media policies concerning the ethical use of social media in direct social work practice. In the United States, the *Standards for Technology in Social Work Practice* published by the National Association of Social Workers (NASW 2017) has a sub-section devoted to the ethical use of technology.

AASW. 2013a. *Ethics and practice guideline: Social media, information and communication technologies: Part 1*. Melbourne: Australian Association of Social Workers.

Published by the Australian Association of Social Workers, this guideline focuses on social workers' ethical communications with clients via e-mail, text messaging and phones, and it suggests recommendations.

AASW. 2013b. *Ethics and practice guideline: Social media, information and communication technologies: Part 2*. Melbourne: Australian Association of Social Workers (AASW).

Published by the Australian Association of Social Workers, this guideline focuses on the ethical use of social networking sites in social work practice, and it suggests recommendations.

BASW. 2013. *BASW social media policy*. Birmingham: British Association of Social Workers (BASW).

Published by the British Association of Social Workers, this document focuses on the uses of social networking sites in social work practice and offers practice recommendations.

NASW. 2017. *NASW, ASWB, CSWE, & CSWA standards for technology in social work practice*. Washington, DC: National Association of Social Workers.

Published by the National Association of Social Workers, this North American document covers a wide range of topics about technology-supported social work, and it devotes a specific sub-section to ethical technology use in practice.

Specialized Organizations

Globally, there are various groups and networks concerned about the use of technology in human service interventions. Some of them are discussion forums, which mainly serve to offer interested individuals opportunities to discuss issues related to technology in social work, human services, and non-profit organizations. Others are organizations advocating for unique technology applications. Others are platforms aiming to facilitate more strategic collaborations. A noted common theme among them is that these diverse groups or networks are becoming more “bottom-up” and interdisciplinary in nature, in terms their membership. As Berzin, et al. 2015 (cited under Introductory Work) suggests, there is a need for more interdisciplinary collaboration, requiring partnerships between social work professionals, software engineers, and managers; and these cross-sector partnerships initiate changes that extend beyond the social work field and into the future of a broader technology-rich social service delivery system.

Dmlhub (The Digital Media and Learning Research Hub).

Dmlhub.net, created in 2009, is the website of the Digital Media and Learning Research Hub, located at the University of California Humanities Research Institute, in UC Irvine, which aims to advance research and learning in the digital era.

husITa (Human Services Information Technology Applications).

husITa, established in 1987, is an international association dedicated to promoting the ethical and effective use of IT to better serve humanity, and it is one of the oldest of such organizations.

iACToR (International Association of CyberPsychology, Training, and Rehabilitation).

iACToR is an international non-profit association designed to promote virtual reality and other advanced technologies in addition to more traditional forms of therapy, training, education, and rehabilitation.

Social Work and Technology.

Social work and technology is a Google Plus community, operated by social work academics in the United States, which has members across the globe who actively exchange information about technology in social work.

SocTech.

SocTech, established in 2016, is a platform operated by the Hong Kong Council of Social Services, which aims to foster communications and collaborations among members in various technology sectors, social service sectors, business sectors, and education sectors.

Types of Technology-supported Social Work Interventions

There are different types of technology-supported social work interventions that imply different levels of technological complexity, different modes of professional skillsets, and different types of challenges. It is possible to differentiate types of technology-supported interventions

based on early-21st-century modes of technology, for example, virtual-reality-based, web-based, and mobile-based technology; however, this classification perspective may end up not telling us much in an age promoting various media convergence. It is also possible to differentiate types of technology-supported interventions based on the communication contexts of implementation, such as offline, online, or blended. However, this classification approach does not necessarily reflect the significance about the role of current technology use and application. For example, in synchronous online counseling, an intervention is almost singularly driven by human practitioners and is conversation based, and the “online” context does not really mean that technology occupies a central role in such a process. Here, technology-supported social work interventions are classified in terms of the significance of technology in interventions as well as the modes of technology. The first category includes technologically adapted interventions, which are initially developed with little or without technology components, driven by human practitioners, and they are often adapted to become some form of online version. The second category includes technology-based interventions, which involve some technology applications in their original designs, which may not have been possible without the technology. Finally, here, the third category includes technology-driven interventions, which are entirely implemented by computer applications or artificial intelligence systems, where the role of professional practitioners is minimal or even absent. This taxonomy serves to highlight the increasing significance about the role of technology in interventions, and this helps uncover some important practice issues. Of course, taxonomies are simply heuristic tools which help abstract and contrast the features of different practices. In reality, the different types of technology-supported interventions may be overlapping and co-existing in the same contexts, as they are evolving daily in our field.

Technologically Adapted Interventions

These describe intervention programs originally developed with little, or without any technology components, as they are driven by human practitioners and adapted to become online versions from their offline versions. For example, an online parenting training examined by Feil, et al. 2008, an online support groups administered by Lieberman, et al. 2005, and an online counselling practice noted in Hanley, et al. 2017.

Delaney, R., C. Nelson, C. Pacifici, L. White, and B. K. Smalley. 2012. Web-enhanced preservice training for prospective resource parents: A randomized trial of effectiveness and user satisfaction. *Journal of Social Service Research* 38:503–514.

This study compared the effectiveness of an online version and a classroom version of a widely used training program, showing that the online training was more effective than the live training in increasing knowledge acquisitions.

Dowling, M. J., and D. J. Rickwood. 2014. Experiences of counsellors providing online chat counselling to young people. *Australian Journal of Guidance and Counselling* 24:183–196.

This study qualitatively interviewed focus groups to examine the experiences of online clinicians employed by a youth mental health service and also investigated the unique aspects of counselling in an online environment.

Feil, E. G., K. M. Baggett, and B. Davis, et al. 2008. Expanding the reach of preventive interventions development of an Internet-based training for parents of infants. *Child Maltreatment* 13:334–346.

This study examined an online version of a training program and showed that participants' knowledge regarding both infant signals and responsive parenting behaviors were increased by its use.

Hanley, T., Z. Ersahin, A. Sefi, and J. Hebron. 2017. Comparing online and face-to-face student counselling: What therapeutic goals are identified and what are the implications for educational providers? *Journal of Psychologists and Counsellors in Schools* 27:37–54.

This study compared online student counseling and face-to-face student counseling and found that they appear to be used differently for different purposes.

Holmes, C. M., and K. A. Kozlowski. 2015. A preliminary comparison of online and face-to-face process groups. *Journal of Technology in Human Services* 33:241–262.

This study compared the subjective learning experiences of students participating in an online group and offline group of a graduate-level counseling course. It found that students in the offline group perceived that they had better learning experiences than the students in the online group.

Lieberman, M. A., A. Winzelberg, M. Golant, et al. 2005. Online support groups for Parkinson's patients: A pilot study of effectiveness. *Social Work in Health Care* 42:23–38.

This study evaluated online support groups for patients with Parkinson's disease and showed that participants demonstrated improved quality of life from such support.

Razuri, E. B., A. R. Hiles Howard, S. R. Parris, et al. 2016. Decrease in behavioral problems and trauma symptoms among at-risk adopted children following web-based trauma-informed parent training intervention. *Journal of Evidence-Informed Social Work* 13:165–178.

This study evaluated a web-based trauma-informed parent training program and found that the intervention did reduce behavioral problems and trauma symptoms in children with histories of adversities.

Russell, B. S., and C. R. Lincoln. 2017. Reducing hostile parenting through computer-mediated parenting education. *Children and Youth Services Review* 73:66–73.

This study evaluated an online parenting program and showed that parent self-concepts were improved, and their use of hostile parenting tactics were reduced.

Technology-based Interventions (Photo Production)

At present, all photo productions are presumably digital productions. However, the use of photos in social work predates the digital age, and it deserves a standalone sub-section in this review. Some photo productions target social changes at community levels. For example, Dewdney and Lister 1988 shows how photography reflects a type of cultural expression that represents cultural resistance, and they suggest using a guided process of raising consciousness to change the oppressed status quo. Wang, et al. 1998 developed a photovoice strategy, which aimed to empower disadvantaged groups to advocate for social changes. Additionally, some photo productions target social changes at micro levels. For example, Nelson-Gee 1975 used Polaroid instant photos in therapy sessions to discuss self-concepts, Weiser 2001 used ordinary personal snapshots and family photos to enhance therapeutic communications, Chan, et al. 2012 used photographs to help clients externalize and evaluate their internalized values. DeCoster and Dickerson 2014 conducted the first systematic review of the therapeutic use of photography in clinical social work.

Chan, C., K. -h. Ngai, and C. -k. Wong. 2012. Using photographs in narrative therapy to externalize the problem: A substance abuse case. *Journal of Systemic Therapies* 31:1–20.

This article discusses the potential of using photographs to externalize the problem in narrative therapy. Their findings showed that the consultation dialogues intended to induce distancing tasks were facilitated by the use of photographs.

DeCoster, V. A., and J. Dickerson. 2014. The therapeutic use of photography in clinical social work: Evidence-based best practices. *Social Work in Mental Health* 12:1–19.

This project systematically identified evidence-based interventions using photography in mental health practice, many of these photographic activities were done in individual or group therapy and focused on social skills, coping skills, self-esteem, or identity for adults and adolescents.

Dewdney, A., and M. Lister. 1988. *Youth, culture and photography*. Basingstoke, UK: Macmillan Education.

This publication is the retrospective account of Dewdney and Lister's photo practice in the 1960s in London. They show how youths' photographs reflected youth lifestyles and how a culturally sensitive worker can help young people explore resistance reflected in their individual styles and also help affirm their oppressed working-class identity, thereby opening possibilities for political subversion.

Lawrence, L. S. 2016. The group, the photograph, the wound, and the writing: How a social worker uses narrative medicine to facilitate groups. *Smith College Studies in Social Work* 86:45–57.

Reports ways in which a clinical social worker demonstrates the use of the narrative method in working with a group of women who are coping with chronic illness in a nursing home, dedicated to the care of individuals who are experiencing dementia. Lawrence explicates how clients' choices of texts and prompts are related to their trauma.

Nelson-Gee, E. 1975. Learning to be: A look into the use of therapy with polaroid photography as a means of recreating the development of perception and the ego. *Art Psychotherapy* 2:159–164.

Reports how a therapist in the 1970s used a Polaroid camera to take photographs in her sessions with a client. The key idea was that they had their sessions in a variety of locations near the school of the client, while the therapist asked the child what he saw in the photos. These dialogues helped to open the possibilities of exploring more about the client's self-awareness.

Wang, C. C., W. K. Yi, Z. W. Tao, and K. Carovano. 1998. Photovoice as a participatory health promotion strategy. *Health Promotion International* 13:75–86.

Shows how photovoice can be used as a participatory action research strategy, by which people create and discuss photographs as a means of effecting community change. In brief, participants are asked to express their views by photographing scenes that highlight particular themes, and their photographs are collaboratively interpreted through discussions. Narratives developed in these discussions are then used to mobilize policymakers to better understand and change the community.

Weiser, J. 2001. Phototherapy techniques: Using clients' personal snapshots and family photos as counseling and therapy tools. *Afterimage* 29:10–15.

Promotes the use of photos in therapy, noting that ordinary personal snapshots and family photos positively impact therapeutic communication and personal healing, reaching deeper areas intrinsically within a person that words alone cannot access normally.

Technology-based Interventions (Digital Production)

Digital production refers to a wide range of production formats, such as photos, videos, animations, texts, music, and webpages, and these different formats tend to converge in our current digital era. There are some interventions that have involved digital production in their original designs and conceptualizations. Many are narrative-empowerment-based practice, which leverages the authoring, editing, and communicative capabilities that might not have been possible without digital technology. De Vecchi, et al. 2016 provides a scoping review on ways in which digital storytelling is used in mental health. In social work, Johnston-Goodstar, et al. 2014 provides one of the earliest scoping reviews on the use of media production practice in youth services.

Chan, C. 2006. Youth voice? Whose voice? Young people and youth media practice in Hong Kong. *McGill Journal of Education* 41:215–225.

Using various examples of different youth media production settings in Hong Kong, this paper presents the possibilities of empowering young people through media production. It also challenges the prevailing romantic idea of tapping “authentic youth voice” in creative productions. The findings showed that subject positions constructed in a young person’s media text are always interweaving with various institutional conditions, even when there is no adult instructor or teacher in such media practice.

De Vecchi, N., A. Kenny, V. Dickson-Swift, and S. Kidd. 2016. How digital storytelling is used in mental health: A scoping review. *International Journal of Mental Health Nursing* 25:183–193.

This study systematically reviewed articles selected from the literature in order to assess how digital storytelling has been used in mental health and identify research implications.

Goodman, S. 2003. *Teaching youth media: A critical guide to literacy, video production and social change*. New York: Teachers College Press.

This publication explains the pedagogy adopted by the Educational Video Center (EVC) in New York, which has served “youth at-risk” since the early 1980s. EVC shows how that documentary videos can reveal social happenings in authentic and objective ways. Goodman suggests that instructors can adopt a more student-centered approach and intervene at appropriate times to better help young people go beyond their existing levels of knowledge.

Johnston-Goodstar, K., K. Richards-Schuster, and J. K. Sethi. 2014. Exploring critical youth media practice: Connections and contributions for social work. *Social Work* 59:339–346.

Drawing on a qualitative content analysis of program descriptions from various youth media groups in the United States, this study examines the current American domain of youth media and discussed implications for social work practice, education, and research.

Lenette, C., L. Cox, and M. Brough. 2015. Digital storytelling as a social work tool: Learning from ethnographic research with women from refugee backgrounds. *British Journal of Social Work* 45:988–1005.

Using a case study of a digital storytelling process used in a research project with a small group of lone mothers from refugee backgrounds, this paper reflects on the potential of digital narratives as a useful tool for today’s social work practitioners.

Technology-based Interventions (Virtual Reality)

Virtual reality (VR) programs are technological mediums that immerse individuals into realistic complex cue prompting environments. Directional stereo audio, graphics, vibration platforms, and scent cues all add to immersive experiences for the participants. There are interventions that adopt virtual reality (VR) in their original designs and conceptualizations, in order to create scenarios that might be too risky/costly to role play, using real life simulations, such as the coping skills training for nicotine dependence examined by Bordnick, et al. 2012 and the social anxiety disorder treatment examined by Parrish, et al. 2016.

Bordnick, P. S., A. C. T aylor, B. L. Carter, and K. M. Graap. 2012. A feasibility study of virtual reality-based coping skills training for nicotine dependence. *Research on Social Work Practice* 22:293–300.

This US study compared “nicotine replacement therapy (NRT)” and “NRT combined with VR skills training (VRST)” and the findings indicated that smoking rates and craving for nicotine were significantly lower for the VRST group.

Parrish, D. E., H. K. Oxhandler, J. F. Duron, P. Swank, and P. Bordnick. 2016. Feasibility of virtual reality environments for adolescent social anxiety disorder. *Research on Social Work Practice* 26:825–835.

This US study assessed the feasibility of VR exposure as an assessment and treatment modality for youth with social anxiety disorder (SAD) and reported that all participants demonstrated more positive intervention outcomes.

Technology-based Interventions (Social Media)

Social media is a general term referring to a range of interactive Internet-based applications allowing for the creation and exchange of user-generated content. They share some common features such as multi-media authoring capabilities, extended visibility, associative capabilities, and reviewability. Chan and Holosko 2017 observes that there are some interventions that adopt social media as the principle medium of intervention, which involve unique strategies and communication methods that might not have been possible without the technology itself:

Chan, C., and M. J. Holosko. 2017. The utilization of social media for youth outreach engagement: A case study. *Qualitative Social Work* 16.2: 680–697.

This Hong Kong study explored the perceived utility of social media in online youth outreach engagement and showed that respective social media functions have enabled the initial search, first encounter, icebreaking, and networking aspects of the agency.

Lee, A. R., and J. Suzanne Horsley. 2017. The role of social media on positive youth development: An analysis of 4-H Facebook page and 4-H'ers' positive development. *Children and Youth Services Review* 77:127–138.

This US study examined the role of Facebook communications in developing positive youth development traits such as competence, confidence, connection, character, compassion, and contribution.

Leung, Z. C., S. S. Wong, S. -w. Lit, C. Chan, F. Cheung, and P. -I. Wong. 2017. Cyber youth work in Hong Kong: Specific and yet the same. *International Social Work* 60.5: 1286–1300.

This Hong Kong study examined a pioneering cyber project working with local young people involved in drug use and revealed some practice insights, such as the importance of social presence, autonomy, and using images.

Lim, S. S. 2017. Youth workers' use of Facebook for mediated pastoralism with juvenile delinquents and youths-at-risk. *Children and Youth Services Review* 81:139–147.

This study analyzed how youth workers used Facebook to communicate with their clients and monitor their activities and examined how youth resisted the youth workers' oversights in various ways.

Love, S. M., M. R. Sanders, and K. M. T. Turner, et al. 2016. Social media and gamification: Engaging vulnerable parents in an online evidence-based parenting program. *Child Abuse & Neglect* 53:95–107.

This US study examined the feasibility of adding social media and gaming features to an evidenced-based parenting program.

Oliver, D. P., K. Washington, E. Wittenberg-Lyles, A. Gage, M. Mooney, and G. Demiris. 2015. Lessons learned from a secret Facebook support group. *Health & Social Work* 40:125–133.

This US article suggests that Facebook secret groups can be useful when managed by a social worker facilitator.

Technology-based Interventions (Crowd-based Sharing/Sourcing/Matching)

There are various crowd-based sharing/sourcing/matching platforms that serve to meet unique types of needs and demands in ways that might not have been possible without the Internet. These practices are informed by the concept of collaborative consumption (also known as a sharing economy or collaborative economy), which is an umbrella term, referring to a range of economic and social activities supporting peer-to-peer, or business-to-business sharing. Some well-known global commercial examples include such as Uber or Airbnb. In social services, Chan and Holosko 2016 notes that it is a recent trend, and many of the earliest initiatives are started by social enterprises or commercial firms rather than professional social workers.

Chan, C., and M. J. Holosko. 2016. An overview of the use of Mechanical Turk in behavioral sciences: Implications for social work. *Research on Social Work Practice* 26:441–448.

This article was the first social work study of MTurk (a crowdsourcing platform run by Amazon), noting that crowd-based platforms could be useful and inexpensive in testing research instruments, fundraising, and matching various types of social needs in communities.

Martin, C. J., P. Upham, and L. Budd. 2015. Commercial orientation in grassroots social innovation: Insights from the sharing economy. *Ecological Economics* 118:240–251.

Using a case study of a grassroots organization adopting a sharing economy strategy, this study illustrated that grassroots niche organizations are becoming more commercially oriented and that the outcomes of this trend are mixed.

Newton, C. 2014. TaskRabbit is blowing up its business model and becoming Uber for everything.

Discusses how the company TaskRabbit, which is a platform providing house cleaners, handymen, and other blue-collar workers, had initial success and then experienced difficulties after a few years of operation.

Technology-driven Interventions

Some interventions are entirely implemented by computer applications or artificial intelligence systems. Although professional social workers might be involved in intervention designs, human practitioners do not need to take part in actual intervention implementations. These include, for example, the ranges of self-help mobile apps reviewed by East and Havard 2015 and the chatbot counseling system reported by Parab, et al. 2017. Nonetheless, many of these technology-driven interventions are in their infancy, and 21st-century research mainly reports their developments, rather than their effectiveness.

East, L. M., and C. B. Havard. 2015. Mental health mobile apps: From infusion to diffusion in the mental health social system. *JMIR Mental Health* 2:e10.

This study described the current state of mental health mobile apps in the mental health profession, identified their benefits, and suggested infusing them more readily into education and practice.

McIngvale, E., C. Bakos-Block, J. Hart, and P. S. Bordnick. 2012. Technology and obsessive compulsive disorder: An interactive self-help website for OCD. *Journal of Technology in Human Services* 30:128–136.

Introduces the development of a promising online, interactive self-help website for persons with Obsessive Compulsive Disorder (OCD).

Parab, A., S. Palkar, S. Maurya, and S. Balpande. 2017. An intelligent career counselling bot—a system for counselling. *International Research Journal of Engineering and Technology* 4:2325–2330.

Describes the development of a career counseling bot driven by artificial intelligence algorithms, in which the system can analyze clients' questions, and answer them like a human counselor.

Sethi, S., A. J. Campbell, and L. A. Ellis. 2010. The use of computerized self-help packages to treat adolescent depression and anxiety. *Journal of Technology in Human Services* 28:144–160.

Examines the use of computerized self-help packages and found that “combined face-to-face and online CBT” is more effective in treating adolescents' depression and anxiety, than “stand-alone online” therapy, or “stand-alone-face-to-face” therapy.

Tantam, D. 2006. The machine as psychotherapist: Impersonal communication with a machine. *Advances in Psychiatric Treatment* 12:416–426.

Suggests that some supplementary tools, including self-administered tests, CBT, virtual environments, e-learning, and automated discourse analysis that can be used to assist clinical therapy.

Washburn, M., and D. E. Parrish. 2013. DBT self-help application for mobile devices. *Journal of Technology in Human Services* 31:175–183.

Introduces the development of a self-help mobile application serving as a companion to structured skills training using dialectical behavior therapy (DBT).

Appraisal of Technology-supported Social Work Interventions

There are 21st-century systematic reviews that provide overall appraisals of technology-supported social work interventions. Ramsey and Montgomery 2014 conducts one of the earliest systematic reviews of technology-supported social work interventions, which provides initial evidence suggesting that the use of technology-based interventions may be associated with positive outcomes. Likewise, Chan and Holosko 2016 also noted that most of the technology-enhanced interventions reported positive outcomes, and they indicated acceptable internal validity. However, Chan 2016a suggests that many technology forms reported in the social work literature are outdated, and Chan 2016b further points out that for studies researching in social media use in social work, their level of evidence is relatively lower than studies investigating other forms of ICT.

Chan, C. 2016a. ICT-supported social work interventions with youth: A critical review. *Journal of Social Work*.

This systematic review of ICT-supported social work interventions with youth indicated that most of the identified studies merely provided indirect evidence, suggesting some effectiveness of technology use, but only a few of them provided direct and convincing empirical evidence. Moreover, the article points out that some of the more popular platforms used only a few years ago are no longer popular today: this raises questions concerning what ways practitioners and researchers can keep abreast of this ever-changing learning curve.

Chan, C. 2016b. A scoping review of social media use in social work practice. *Journal of Evidence-Informed Social Work* 13:263–276.

This scoping review identified the various uses, benefits, and limitations of social media in social work practice, revealing that social media has already penetrated various social work processes, including engagement, assessment, intervention and evaluation. However, the field is challenged by staying engaged through technology on an overall basis.

Chan, C., and M. J. Holosko. 2016. A review of information and communication technology enhanced social work interventions. *Research on Social Work Practice* 26:88–100.

This is a systematic review of ICT-enhanced social work interventions. The findings showed that most of the interventions reported positive outcomes, indicated acceptable internal validity, and upheld intervention fidelity. However, this review also points out that many ICT-enhanced social work interventions present a type of “black box” design in which they usually present what outcomes are achieved but do not elaborate on specific processes or skills to be used.

Ramsey, A. T., and K. Montgomery. 2014. Technology-based interventions in social work practice: A systematic review of mental health interventions. *Social Work in Health Care* 53:883–899.

This systematic review focused on technology-based mental health interventions delivered by social workers and summarized the advantages and disadvantages of utilizing technologies within those interventions. Provides initial evidence suggesting that the use of technology-based interventions may be associated with improved mental health outcomes.

Emerging Issues and Research Ideas

Ballantyne, et al. 2017 (cited under Introductory Work) notes that the world is entering a new era characterized by a fusion of various technologies that blurs the boundaries across almost all disciplines. As with the effects of previous eras, the impact of this new iteration is difficult to forecast. Goldkind and Chan 2017 (cited under Introductory Work) notes that new technology brings new opportunities for human services, and it also “disrupts” human services—in a sense that new technology may create a new value network and eventually disrupt the existing value network. Here are some of the fast-changing domains that will disrupt service, practice, education, methodology, and ethics, in no small measure.

Practice

While many digital tools are not particularly difficult to use, other factors—including social service users’ abilities, time constraints, and competencies—may inhibit their use in agencies. For example, as noted by McNutt and Goldkind 2015, this raises questions about the impact of the digital divide in social work generally. Further, as noted by Chan and Holosko 2016, some ICT interventions simply required minimal professional input, raising questions about the value of professional social workers in their design, use, implementation, and evaluation.

Chan, C., and M. J. Holosko. 2016. A review of information and communication technology enhanced social work interventions. *Research on Social Work Practice* 26:88–100.

Shows how technology-supported social work interventions involve more of a reliance on well-designed technologies than on skilled practitioners. This raises questions about the extent to which such professional practice really needs trained professionals to be effective.

Goldkind, L. 2014. E-advocacy in human services: The impact of organizational conditions and characteristics on electronic advocacy activities among nonprofits. *Journal of Policy Practice* 13:300–315.

Explores the organizational characteristics related to the use of electronic advocacy strategies and describes the relationships between organizational characteristics and the use of electronic advocacy tools.

McNutt, J. G., and L. Goldkind. 2015. E-activism. In *Encyclopedia of information science and technology*. 3d ed. Edited by M. Khosrow-Pour, 6411–6418. Hershey, PA: Information Science Reference.

Raises questions about whether technology-supported interventions have widened the gap between the most functional individuals and those who find themselves at the bottom of the service strata in more vulnerable situations.

Evaluation Indicators

There are social indicators and metrics that might not have been possible without technology, which allow analysts to track and visualize social media network developments, as well as individual importance weightings within social networks (Hansen, et al. 2011). That is, these new data and their indicators record changes over time, which help identify either group or individual changes alongside of the planned social work interventions. For example, Wölfer, et al. 2015 suggests using social network analysis to analyze group dynamics, Chan 2013 uses Twitter data to identify significant members in social movements, and Del Vicario, et al. 2017 uses Facebook data to understand the social dynamics behind the Brexit debate. However, there are also some queries raised regarding to what extent the data on social media can accurately represent people's view of their reality. For example, Hampton, et al. 2014 reveals that people were less likely to seriously discuss controversial issues on social media than they were in person.

Chan, C. 2013. Young activists the anti-patriotic education movement in postcolonial Hong Kong: Some insights from Twitter. *Journal of Citizenship, Social and Economics Education* 12:148–162.

This study adopted a social network analysis technique to identify the community structures and significant members within the Twitter network of a student activist group in Hong Kong. It found that external adult members were much more influential than the vast majority of student members.

Del Vicario, M., F. Zollo, G. Caldarelli, A. Scala, and W. Quattrociocchi. 2017. Mapping social dynamics on Facebook: The Brexit debate. *Social Networks* 50:6–16.

This analysis showed that user consumption patterns on Facebook around the Brexit debate revealed a polarization of options, which might be gradually escalated by the algorithm of social media, as it immediately drew like-minded people together.

Hampton, K., L. Rainie, W. Lu, M. Dwyer, I. Shin, and K. Purcell. 2014. Social media and the 'spiral of silence'.

This report revealed that people were less likely to discuss controversial issues on social media than they were in person. And if they thought their social media friends disagreed with them, they were less likely to want to discuss any issues at all.

Hansen, D. L., B. Schneiderman, and M. A. Smith. 2011. *Analyzing social media networks with NodeXL: Insights from a connected world*. Burlington, MA: Morgan Kaufmann.

Introduces the methods, metrics, and software used in analyzing various social media networks and illustrates the significance of such analysis.

Lewis, K., J. Kaufman, M. Gonzalez, A. Wimmer, and N. Christakis. 2008. Tastes, ties, and time: A new social network dataset using Facebook.com. *Social Networks* 30:330–342.

Suggests that Facebook is a data set providing some unique information about a population and that this data set might have more scientific and pedagogical potential than it is currently being used for.

Wölfer, R., N. S. Faber, and M. Hewstone. 2015. Social network analysis in the science of groups: Cross-sectional and longitudinal applications for studying intra- and intergroup behavior. *Group Dynamics: Theory, Research, and Practice* 19:45–61.

Describes the background, generation, and application of cross-sectional and longitudinal social network statistics that are of specific interest to group researchers. It reported that social network analysis helps examine some of the central mechanisms that underlie the behavior within and between groups, such as the importance of individual members and the communication patterns among members.

Professional Education

The ubiquitous fast-changing technology landscape has posed many challenges to social work education. Reinoehl and Mueller 1990 pointed out that social work educators have found themselves struggling to meet the demands of new technology since the 1980s and that there have been a range of interrelated factors that have largely hindered the development of education about technology in social work (e.g., limited resources, faculty resistance, etc.). Most of these challenges observed in the 1980s and 1990s are still valid in the 21st century. Goldkind, et al. 2016 notes that although social workers use technology in their personal lives, few of them sought to expand their relevant professional knowledge about technology. Zorn and Seelmeyer 2017 notes that it is not easy to teach technology in an already-overcrowded curriculum, but they suggest that using inquiry-based learning approaches to technology education could be a way out.

Goldkind, L., L. Wolf, and J. Jones. 2016. Late adapters? How social workers acquire knowledge and skills about technology tools. *Journal of Technology in Human Services* 34:338–358.

This study surveyed a sample of social work field supervisors to describe their personal and professional ICT use, rank the technological sophistication of their agency, and describe the barriers to ICT use in their organizations. The findings revealed that social workers use technology in their personal lives, but few of them sought to expand their relevant professional knowledge about technology.

Pardasani, M., L. Goldkind, J. C. Heyman, and B. Cross-Denny. 2012. How much does the distance in distance education matter? Our students speak. *Social Work Education* 31:406–421.

This study interviewed US masters of social work (MSW) students enrolled in distance-learning courses that employed a blended pedagogy and evaluated their insights about various learning experiences.

Reinoehl, R. L., and B. J. Mueller. 1990. Introducing computer literacy in human services education. *Computers in Human Services* 7:3–15.

An introduction of a special issue of the *Journal of Technology in Human Services* (JTHS) in 1990. Social work educators have long found themselves struggling to meet the demands of new technology. This 1990 JTHS special issue notes that although there were some increasing number of faculty who had been creatively applying computer applications for social work education, resource limitations, overloaded curriculum space, limited faculty expertise, and faculty resistance had largely hindered the development of computer literacy in social work education.

Zorn, I., and U. Seelmeyer. 2017. Inquiry-based learning about technologies in social work education. *Journal of Technology in Human Services* 35:49–62.

Explores ways in which social work educators can teach about technology in a curriculum that is already overcrowded. Proposes adopting more inquiry-based learning to enable educators to integrate learning about technology across the curriculum by embedding technology-related issues into a range of real-world scenarios.

Professional Ethics

Social media can potentially contribute to various social work processes, but it also has limitations such as a lack of quality control, reliability, confidentiality, and privacy issues. Some have raised concerns about whether social work professional ethics can be guaranteed and regulated in technology-supported practice. For example, Mishna, et al. 2012 reveals that frontline social workers might not always

disclose ethical dilemmas to their supervisors, and their decisions largely depended on their personal judgments. Some have suggested that social workers should adopt clearer guidelines to strengthen risk management. For example, Reamer 2013 provides an overview of current issues in technology-supported social work services and suggests that social work should have clearer guidelines. In 2017, the National Association of Social Workers (NASW) in the United States approved a number of significant amendments to the NASW Code of Ethics (in effect in 2018), which are related specifically to the use of technology.

Barsky, A. 2017a. Ethics alive! The 2017 NASW Code of Ethics: What's new?. *New Social Worker*.

Reports that the National Association of Social Workers (NASW) in the United States approved a number of significant amendments to the NASW Code of Ethics that go into effect on 1 January 2018. Many of these changes involve issues related to the use of technology. For example, a new aspirational paragraph was added to the preamble, identifying ways that technology may be used in various aspects of social work practice. Some new standards do not add new ethical obligations, but they explicate in what ways existing ethical obligations apply when social workers use technology.

Barsky, A. 2017b. Social work practice and technology: Ethical issues and policy responses. *Journal of Technology in Human Services* 35:8–19.

Provides guidance for developing clearly defined policies to systematically address issues arising from online practice, including such as informed consent, confidentiality, social worker–client boundaries, and cross-jurisdictional practice.

Mishna, F., M. Bogo, J. Root, J. L. Sawyer, and M. Khoury-Kassabri. 2012. 'It just crept in': The digital age and implications for social work practice. *Clinical Social Work Journal* 40:277–286.

This study explored practitioners' experiences and views about how online communication has entered their daily face-to-face practice and has affected their therapeutic work with clients. This study revealed that when frontline social workers encountered ethical dilemmas using social media, they made decisions on a case-by-case basis, and they might not always disclose these dilemmas to their supervisors.

Reamer, F. G. 2013. Social work in a digital age: Ethical and risk management challenges. *Social Work* 58:163–172.

Provides an overview of current technology-supported social work services and identifies compelling social work ethical issues such as practitioner competence, client privacy and confidentiality, boundaries, and dual relationships. Suggests that social work should develop and adopt a clear set of guidelines for online practice.

Law Enforcement

Law enforcement is often inseparable from jurisdiction. In the Internet age, the concept of a jurisdictional boundary, which is geographically defined, has been fundamentally disrupted and redefined. Online social work practices may serve clients across state or country boundaries, triggering issues related to practice licensure and liability. Technically speaking, it is not clear whether social work practice across geographical boundaries differentiate "clients coming to practitioners' states of residence," or "practitioners going to client's state of residence." Internet communication is mediated by servers, and server location is key to jurisdiction in many international instances. As Reidenberg, et al. 2013 reveals, although some cases represent some legal standards, their applications lack uniformity, and their broader issues are rather elusive and inconclusive. In addition, copyright laws also affect social work practice using digital productions. Palfrey, et al. 2009 notes that creative productions collaging different online materials may involve complicated copyright issues. Further, crowd-based sharing/sourcing/matching practices also involve legal issues. As Prassl and Risak 2016 notes, right-to-work, taxations, and licensing have all been disrupted by the Internet. In short, this important issue looms large on technology horizon for many professions including social work.

Palfrey, J., U. Gasser, M. Simun, and R. F. Barnes. 2009. Youth, creativity, and copyright in the digital age. *International Journal of Learning and Media International Journal of Learning and Media* 1:79–97.

This study candidly investigated young people's legal knowledge and revealed that they are overwhelmingly ignorant of the rights and restrictions established in copyright laws.

Prassl, J., and M. Risak. 2016. Uber, Taskrabbit, and Co.: Platforms as employers-rethinking the legal analysis of crowdwork. *Comparative Labor Law & Policy Journal* 37:619–651.

Points out that crowd-based sharing/sourcing/matching presents real challenges for workers, businesses, and regulators, such as issues about the "right-to-work" and minimum wage.

Reamer, F. G. 2015. Clinical social work in a digital environment: Ethical and risk-management challenges. *Clinical Social Work Journal* 43:120–132.

Introduces different cases involving jurisdictional boundary issues in online practice, revealing that social workers' legal knowledge affects their attitudes toward their ensuing responses to the challenges that arise from such practice.

Reidenberg, J. R., J. Debelak, and J. Kovnot, et al. 2013. Internet jurisdiction: A survey of legal scholarship published in English and United States case law.

Provides a comprehensive survey of the case law and legal literature analyzing jurisdiction for claims arising out of Internet activity in the United States. It concludes that although some cases represent some predominant legal standards, when and how these rules are applied by US courts lack uniformity.

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