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Innovation in Social Work Education: Exploring Pedagogical Technology Integration

Norma Renee Love-Schropshire
University of St. Thomas, Minnesota

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by

Norma Renee Love-Schropshire

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Abstract

The coronavirus [COVID-19] pandemic in the US exposed an urgent need for social work educators to be prepared to educate with technology. This banded dissertation uses Mishra and Koehler's Technological Pedagogical and Content Knowledge (TPACK) integration framework to explore how social work educators integrate technology in curriculum delivery. The first manuscript is a conceptual paper that proposes a social work — specific technology integration framework using the TPACK model. In line with Section 4 of the Council on Social Work Education's *Standards for Technology in Social Work Practice* (*Standards*), the Social Work — TPACK (SW-TPACK) model may inform new ways of thinking about how social work educators can ethically, effectively, and appropriately leverage technology to deliver discipline-specific subject matter.

The second product, a systematic literature review, utilized the teaching and learning frameworks of Bloom's *Revised* Taxonomy and TPACK model in analyzing 29 peer-reviewed publications between 2012 and 2020. The study was guided by the following research question: *"How are specific types of technology, pedagogy, and content activities reflected in the context of social work education?"* With the use of Bloom's *Revised* Taxonomy, domains necessary to associate TPACK codes when condensing the existing findings conveyed in the reviewed publications were identified. The codes and categories were then summarized by the researcher in presenting the findings. The findings suggested that social work educators would provide meaningful teaching and learning experiences for their students if they have a better understanding of technology integration. Likewise, educators will improve student learning outcomes, if educators exercise familiarity with technology related pedagogy in the development of effective curriculum content.

The third product is a peer-reviewed scholarly presentation, given at an international instructional technology conference. This (then) work-in-progress proposed a discipline-specific model for engaging in ethical technological pedagogy in social work distance education or online formats.

Keywords: Technological Pedagogical and Content Knowledge (TPACK), technology integration, social work education, ethics

Dedication

First and foremost, I thank God, my Lord and Savior Jesus Christ. I thank my children, Sydney and Henry Norman for tolerating my three-year absence, for your sacrifices and encouraging and believing in me so that I can build a testimony! I love you. I thank my husband, Henry Schropshire for providing maintaining our daily living activities and parenting responsibilities, your sacrifice of time made this work possible and did not go unnoticed, you are appreciated.

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Thank you for all your patience and sacrifice especially as I neared the finish line. I feel so fortunate and blessed to dedicate my life's work to something I am wildly passionate about – leveraging technology for the greater good, to train social work educators and students to succeed and reach their full potential so that we can change the world together.

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> The way we first learned to do something is usually the way we continue to do it unless we learn a better way.
>
> — Frank Abels (2005, p. 7).

This banded dissertation comes at a crucial moment where drastic changes are required in higher education and particularly, in social work education. On January 20, 2020, the first case of the pandemic - COVID - 19, (novel coronavirus) was reported in the United States (Holshue, DeBolt, Lindquist, Lofy, Wiesman, Bruce, & Pillai, 2020). In response, the United States Department of Education (2020) on the advice of health officials recommended that schools, colleges, universities, and educational agencies suspend all traditional in-person courses and move to online instruction to reduce disease transmission by practicing social distancing. This guideline created tacit and practical problems for thousands of instructors who scrambled with minimal notice to prepare to host remote classes without prior training and preparation time, causing many educators to relate the transition experience from the role of teacher to student by needing to learn how to teach online and adapt quickly (Smith, 2020). This international crisis highlights the need for broader faculty development in pedagogical technology integration for the social work discipline.

This banded dissertation was inspired by the American Academy of Social Work and Social Welfare's (2012) Grand Challenge to Harness Technology for Social Good: a call to action for all social workers to combat social injustice through scientific progress within one decade. Notably, the scope of this dissertation encompasses wide-ranging teaching formats that are not limited to media, online, or traditional mediums. The full scope centers on pedagogical

technology integration and social work educators' development needs across content areas and contexts.

In the past decade, the pedagogical preparation of social work educators who teach with technology is increasingly gaining focused attention. However, the Council on Social Work Education (CSWE) does not maintain a separate criterion for online courses or programs in their database, because "accreditation standards and review criteria" are the same for MSW and BSW programs, and doctoral programs do not receive accreditation (CSWE, 2017, para. 1). The CSWE offers regional accreditation standards for teaching qualifications, yet these standards primarily address an instructor's academic degree level rather than pedagogical knowledge, abilities, or skills (CSWE, 2018). In some cases, social work programs expect educators to independently and masterfully build high-quality, learner-centered courses without receiving prior fundamental training, support, or mentoring to harness the skills needed for instruction. However, as enrollment and global access to education increases, so does the need for educators prepared to teach with a requisite understanding of learning technologies to meet the demand. In 2017, the National Education Technology Plan research team reported that college educators required and desired more technology integration training. Readiness training supports educators across disciplines, including social work, in building a repertoire of competence to effectively teach with technology. Due to increasing enrollment, educator development is essential to prepare educators who are "competent" to create technology-mediated learning processes (National Education Technology Plan, 2017). This banded dissertation proposed a discipline-specific solution to aid in the development of technology-integration knowledge, skills, and abilities for social work educators.

Conceptual Frameworks

Technological Pedagogical and Content Knowledge (TPACK)

The prevailing seminal framework, guiding all three products in this banded dissertation, is Mishra and Koehler's (2006, 2008) Technological Pedagogical and Content Knowledge (TPACK) model (see Figure G1). The TPACK framework is an expansion of Shulman's (1986a, 1986b, 1987) seminal theory of pedagogical content knowledge (see Figure H1). Shulman created the concept of pedagogical content knowledge to represent the nature of teachers' tacit knowledge, needed to effectively teach learners in diverse content areas in coherent ways (Harris et al., 2017; Shulman, 1986a, 1986b, 1987). With Shulman's legacy in mind, in 2006, Mishra and Koehler added the word "technological" to create the TPACK model and were widely regarded for introducing and clearly articulating this new conceptual framework, now an influential mainstay in the field of educational technology. The TPACK framework is primarily known as a constructivist-oriented, practical approach to making decisions about how technology-integration knowledge connects to discipline-specific teaching practices through explorations of pedagogical reasoning and action in a variety of contexts (Harris et al., 2017). Olofson et al. (2016, as cited in Harris et al., 2017) affirmed that constructivist pedagogy is a critical core component in the recursive processes of TPACK educator development (Harris et al., 2017). The TPACK model has aided researchers and educators at K–12 and postsecondary levels in understanding what educators know about digital learning and advanced opportunities for educators' knowledge development. The goal was to improve cultural sensitivity and perspectives on the nature of knowing, making decisions, and pedagogical reasoning and action (Harris et al., 2017; Kelly, 2008; Lambert & Sanchez, 2007). An illustration of the TPACK model expands Shulman's pedagogical content knowledge two-circle model into the three

overlapping circles created by a Venn diagram to depict the intersection of technology, pedagogy, and content, yielding seven equal knowledge domains (see Figure G1). In the model, the point where all domains meet is the keystone of TPACK, and represents the kind of teacher knowledge required to effective delivery subject matter with the use of technology (McGraw-Hill Education, 2018)

Mishra and Koehler's (2006, 2008) TPACK theory assumes teachers can develop an integrated requisite knowledge to aid their technology-integration practices (Soong & Tan, 2010). TPACK provides teacher knowledge that is central to teaching with technology, and not distinctly held by content or technology experts who are not trained in subject matter or teaching methods, or even by teachers themselves who are not trained to integrate digital technologies. Experts assert that teachers trained to learn TPACK can develop a new understanding of the tripartite connections of pedagogy, content, and technology in unison, rather than in isolation from each other (Mishra & Koehler, 2006, 2008). Experts assert confidence in TPACK's triune benefits of pedagogy, technology, and content knowledge for discipline-specific contexts and affirm TPACK as the knowledge solution for the aptitude required for teaching with technology (Mishra & Koehler, 2006, 2008).

Standards for Technology in Social Work Education

The National Association of Social Workers (NASW, 2017b), Association of Social Work Boards (ASWB), CSWE, and the Clinical Social Work Association (CSWA) revised the 2005 *Standards for Technology in Social Work Practice* (*Standards*). The new learning and practice *Standards* provide generic advice on the ethical use of technology in social work and offer a guiding framework that addresses the "benefits, challenges, risks" (NASW, 2017b). The four guiding organizations reported that advances in the delivery of social work education

opportunities for learning, training, and student engagement have greatly expanded, due to technological innovation. In Section 4, on Social Work Education and Supervision, educators are advised to consider their ethical use of technology in 12 areas (see Table A1), regarding the design and delivery of education (NASW, 2017b). Remarkably, Section 4 does not offer curricular, or pedagogical arrangements and social work educators are not mandated to follow the suggestions (NASW, 2017b). However, the advice offered is useful in examining education-technology literature and other frameworks from an ethical social work lens. The TPACK framework is useful to broaden the knowledge base of social work educators, relating the integration of technology to social work theory, content, and teaching strategies. In applying TPACK to the *Standards*, the two banded frameworks propose the Social Work- Technological Pedagogical and Content Knowledge (SW-TPACK; see Figure I1) model, to provide a discipline-specific framework for ethical teaching with technology in social work education.

Summary of Banded Dissertation Products

This banded dissertation consists of three scholarly products. Product 1, Introducing the SW-TPACK framework, is a conceptual manuscript. Product 2, *Pedagogical Technology Integration in Social Work Education,* is a systematic review and meta-analysis. Product 3, *Introducing SW-TPACK,* is a peer-reviewed international conference presentation. Products 1 and 3 banded Mishra and Koehler's (2006, 2008) seminal TPACK model and the *Standards,* with Section 4 on Education and Supervision (NASW, 2017b) into an expanded design to propose a new way of thinking about teaching with technology in the social work discipline. The TPACK model and the *Standards* offer technology integration knowledge and guidance from an ethical social work vantage point. With TPACK and the *Standards* banded together, they represent a discipline-specific model for ethical technology integration in social work education,

the SW-TPACK model (see Figure I1). With the SW-TPACK framework, social work educators have a tool to help them conceptualize and build their requisite knowledge to learn to appropriately integrate technology with pedagogy across traditional and online teaching mediums to competently deliver content in an ethical context. Adoption of the SW-TPACK framework for educators' development can ensure social work educators apply an ethical lens and enhance knowledge of digital technologies, subject matter, and teaching methods to appropriately integrate technology in curricula and the delivery of social work education. The SW-TPACK model may help social work educators close the digital divide of social work education and technology for educators and learners.

Product Two, the second manuscript entitled *Pedagogical Technology Integration in Social Work Education*, is a systematic literature review and meta-synthesis, inspired by Koehler and Mishra's (2006; 2008) TPACK framework which provided the overarching driver for the research which was further synthesized with Bloom's *Revised* Taxonomy – Domains of Learning as a secondary theoretical driver. Combined with the appropriated technologies of Distiller SR and NVivo software, the researcher was appropriately guided in extracting literature focused on technology mediated activities and curriculum content that social work educators used in instructional delivery methods. The social work literature was abstracted and classified into three theoretical driver themes; cognitive, psychomotor, and affective themes then associated with codes related to technology, pedagogy and content. The findings were significant in shedding light on the value of Bloom's *Revised* Technology and TPACK theoretical frameworks, if understood and practiced by social work educators, would further enhance the praxis of social work education.

The third product, *Introducing SW-TPACK,* was a peer-reviewed scholarly presentation at the 29th annual international conference of the Society for Information Technology and Teacher Education, held in Las Vegas, Nevada, on March 18, 2019. *Introducing SW-TPACK* was presented as a virtual working paper accompanied by a 25-minute presentation, published on The Learning and Technology Library website and sponsored by the Association for Advancement of Computing in Education.

Discussion

Research for this banded dissertation positioned Mishra and Koehler's (2006, 2008) TPACK as the prevailing framework and point of departure for teaching with technology in social work education. First, a conceptual manuscript proposes the SW-TPACK model by applying TPACK to the *Standards* (NASW, 2017b) to reflect the discipline-specific ethical needs of social work educators. Second, the systematic review revealed the range of technology integration, subject matter, and teaching and learning activities and experiences currently written about in social work education courses. The synthesis of the literature answers the review question, "How are specific types of technology, pedagogy, and content activities reflected in the context of social work education?" The systematic review research design applied a meta-synthesis approach to 29 peer-reviewed academic articles that generated meaningful findings associated with Bloom's *Revised* Taxonomy and TPACK theoretical frameworks. Although the results could inform praxis and contribute to the academic literature within the field, there are further considerations that provide implications for future research.

Implications for Social Work Education

The combined results of this banded dissertation reflect that technology integration in social work education is advancing yet warrants further development of social work educators

who teach with technology. The combined results contribute to improving the delivery of subject matter and educators' digital integration practices to enhance student learning. Mishra and Koehler's (2006, 2008) TPACK proposes several benefits for technology integration that are relevant to social work education. First, TPACK can assist social work educators in learning how to use digital tools to appropriately deliver content. Second, TPACK provides a common language when selecting digital tools appropriate for social work content delivery. Third, TPACK can offer a program-evaluation framework. These findings suggest that the TPACK model can enhance and further develop best practices for educator-centered technology-integration methods in social work education. On a national level, the CSWE and NASW have not formally adopted an educator-centered technology-integration framework for teaching that goes beyond the *Standards* to inform technology-mediated teaching practices in social work education. The CSWE, program administrators and social work educators may consider adopting the proposed SW-TPACK model to benefit ongoing assessments for progress monitoring and learning outcomes, as it may provide a guideline to evaluate the performance of social work educators teaching technology-mediated courses. Using the SW-TPACK for performance evaluations would help administrators and educator development programs to identify areas of training necessary to help social work educators improve technology-integration knowledge and practices in the teaching and learning process.

The suggested value of the SW-TPACK model is in its application to educators' development training of social work educators. Social work researchers (Barsky, 2017; Belluomini, 2013; Boddy & Dominelli, 2017; Bullock & Colvin, 2017; Fitch, 2015; Forgey & Ortega-Williams, 2016; Herring et al., 2016; Hitchcock & Battista, 2013; Jones, 2015; Levin et al., 2018; Mishna et al., 2017; Niess, 2008; Pelech et al., 2013; Reamer, 2018; Robbins & Singer

2014; Smith, 2014) indicate a need for increased educator development and support on pedagogy, technology integration, and ethical understanding of technology, yet do not point to a discipline-specific framework to this end. Educator-development programs should immediately shift training approaches to best prepare social work educators for quality 21st-century teaching innovations (National Center for Education Statistics, 2017; Niess, 2008). If educators are not adequately prepared, they may unintentionally select the wrong technologies for teaching social work content. Current educator-development programs effectively leverage best practices to provide strategies, applications, and tools to engage, assess, and improve student learning outcomes; however, more tacit knowledge development can provide educators the requisite knowledge required to understand *which* tools to select and *how* to use them to deliver content in an ethical context (Niess, 2008). With this knowledge, social work educators may adopt SW-TPACK as an ethical, technology-integration model, to provide a discipline-specific lens to enhance teaching aptitude and content acquisition by learners.

Implications for Future Research

These implications are best informed by Mishra and Koehler's (2006, 2008) TPACK theory, which provided the inspiration to examine social work educators' teaching strategies. The conceptual paper in this banded dissertation applied TPACK to the ethical context of technology integration in social work education. This banded dissertation follows the Angeli et al. (2016) suggestions that ask researchers to examine TPACK's relevance in divergent contexts and content domains, such as social work, where the TPACK body of knowledge itself would not typically be explored. The proposed SW-TPACK model is a starting point in furthering subsequent iterations of the framework for future discourse and empirical testing in social work education. The proposed SW-TPACK may provide a way for educators to conceptualize ethical

technology integration in social work education. Finally, the SW-TPACK model may fill a gap in faculty development programs because it is generalizable for any social work training or performance review context. The SW-TPACK model provides a theoretical foundation to fill a gap in social work educators' development. The proposed SW-TPACK framework could be a knowledge solution for technology-integration effectiveness in social work education.

The systematic literature review and meta-synthesis identified social work educator's 21st-century content-delivery activities to leverage instructional technologies across graduate and undergraduate social work education programs. These methods were performed in traditional and novel teaching formats and created negative and positive teaching and learning experiences for educators and students. To this end, quality research, covering a broader range of factors and student-learning outcomes is needed to ensure appropriate and ethical technology integration by social work educators. The TPACK model may benefit educators' development and performance review of social work educators who teach with technology.

As evidenced by the systematic literature review and meta-synthesis, a clear need exists for further empirical research and rigorous studies on the TPACK model for its relevance in social work education. Future research may illustrate how social work programs can adapt the curriculum, courses, lessons, and student activities for educators who choose to develop themselves professionally in TPACK's domains. Findings can significantly inform the landscape of educator-development programs. If social work educators are properly supported and strategically trained, they can further develop their technology-integrated delivery of content to enhance student-learning experiences. The TPACK framework can be considered a theoretical foundation to evaluate the integration of technology into pedagogical-delivery activities by social work educators, and new best practices may emerge. Finally, there are three future research

designs the researcher has considered to be beneficial to further improve social work education and contribute to the literature to inform technology-mediated praxis. To begin, the TPACK context of this systematic review and meta-synthesis was contained to the three domains of learning of Bloom's *Revised* Taxonomy. The TPACK framework could be expanded to include Bloom's six levels of learning within a broader conceptual framework. Furthermore, there could be an annual revisiting of the systematic review that applies the same methodology as this research design to keep educators abreast of new and emerging technology mediated instruments, activities, and curriculum content within social work education. Finally, Malcolm Knowles' andragogy theory of adult learning as a theoretical driver synthesized with the TPACK model would further inform technology mediated praxis as it relates to non-traditional students.

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Introducing the Social Work — Technological Pedagogical and Content Knowledge (SW-TPACK) Framework

Norma Renee Love-Schropshire

University of St. Thomas

Author Note

Norma R. Love-Schropshire is a doctoral student in the Doctorate in Social Work Program, School of Social Work, the University of St. Thomas.

Correspondence concerning this paper should be addressed to Norma R. Love-Schropshire, School of Social Work, Wayne State University, 5447 Woodward Ave, Detroit, MI 48202.

Contact: ar3183@wayne.edu

Abstract

This conceptual paper addressed the gaps in technology integration in social work education by expanding Mishra and Koehler's (2006, 2008) Technological Pedagogical and Content Knowledge (TPACK) model, a seminal knowledge-development framework. The National Education Technology Plan reported that college educators need fundamental knowledge of teaching practices that effectively support learning with technology, and that educators desire more training to this end. Mishra and Koehler's TPACK framework is combined with Section 4 of the *Standards for Technology in Social Work*, thereby offering an educator-centered, discipline-specific technology-integration model suited to reflect the ethical needs of social work educators. The adoption of the proposed Social Work — Technological Pedagogical and Content Knowledge (SW-TPACK) framework could transform how social work educators think about ethics and appropriate technology integration.

Keywords: Social work - technological pedagogical content knowledge, educator development, technology integration, ethics, TPACK

Introducing the Social Work-Technological Pedagogical and Content Knowledge (SW-TPACK) Framework

The National Center for Education Statistics (2018; 2019) reported that the overall college enrollment rate grew from 35% in 2000 to 40% in 2017. Of these, close to 7 million students enrolled in distance education courses at degree-granting postsecondary institutions (National Center for Education Statistics, 2018; 2019). Postbaccalaureate enrollment is forecasted to increase by 3% between 2017 and 2028 (National Center for Education Statistics, 2018; 2019). In the 2017 National Education Technology Plan (NETP) for higher education, South noted that training is essential to prepare competent educators to use technology as a tool to transform the learning experiences of a growing number of students (NETP, 2017; Office of Educational Technology, 2017). South further asserted that half of U.S. educators desire more training on appropriate integration of technology with teaching methods than they currently received (NETP, 2017; Office of Educational Technology, 2017). The NETP (2017) project team asserted that all educators require the requisite knowledge and skills to understand the effective use of technology to realize each discipline's core competencies and completely harness technology-mediated learning contexts. Further, the team asserted that educators should enter their courses with a fundamental knowledge of how to effectively support learning with technology integration (NETP, 2017; Office of Educational Technology, 2017). Appropriate technology integration is not an ad hoc skill that educators are expected to adopt after they begin teaching a course (NETP, 2017).

In response to these observations, most college programs have adopted and implemented academic and career-ready standards to ensure learners graduate with the knowledge and skills necessary to succeed in the workforce (NETP, 2017; Office of Educational Technology, 2017).

However, the NETP team contends that although academic leaders have made significant infrastructure contributions, "without a well-prepared teaching force, the nation will not experience the full benefits of those investments for transformative learning" (NETP, 2017; p. 35). In this paper, Mishra and Koehler's (2005, 2006, 2008) Technological Pedagogical and Content Knowledge (TPACK) framework (see Figure G1) is applied to the *Standards for Technology in Social Work Practice* (*Standards*), see Table A1; (National Association of Social Workers [NASW], 2017b). Integrating these frameworks allows for a banded, discipline-specific model for the ethical integration of technology in social work education programs.

Technology Integration in Social Work Education

Since 2008, social work education has made significant progress in the integration of technology with programs, teaching, and learning. Available literature (American Academy of Social Work and Social Welfare [AASWSW], 2012; Abels, 2005; Barsky, 2017; Belluomini, 2013; Bentley et al., 2015; Berzin et al., 2015; Boddy & Dominelli, 2017; Boer et al., 2011; Bullock & Colvin, 2017; Buquoi et al., 2013; Coulton et al., 2015; Fitch, 2015; Forgey & Ortega-Williams, 2016; Goldkind et al., 2019; Herring et al., 2016; Hitchcock & Battista, 2013; Hitchcock et al., 2019; Jones, 2015; Levin et al., 2018; Lopez, 2014; Mishna et al., 2017; Naccarato, 2010; National Association of Social Workers [NASW], 2017a, 2017b; Niess, 2008; Padilla & Fong, 2016; Patton, 2015; Pelech et al., 2013; Perron et al., 2010; Piña & Bohn, 2015; Ramsey & Montgomery, 2014; Reamer, 2018; Robbins & Singer, 2014; Shaw et al., 2012; Shorkey & Uebel, 2014; Smith, 2014; Soule, 2008) confirmed that the conversation has shifted from whether technology should be used in social work education to how it can improve learning to ensure all students have access to high-quality educational experiences. These same studies indicated that social work education has not adopted a suitable knowledge framework to address

the preparation required of educators to effectively integrate digital-learning technologies in social work programs.

Teaching with technology at the postsecondary level is a challenge for pedagogues who, although experts in content, have inadequate technology-integration experience. This knowledge is required to independently build courses, deploy assignments and assessments, and manage timelines and students' grades in learning-management systems (Soule, 2008). Quite often, educators are charged to deliver technology-enhanced course content without the aid of a technologist or instructional designer (Patton, 2015; Piña & Bohn, 2015). Hence, social work educators can simultaneously gain technology-integration competence and maintain ethical integrity by integrating core values in conjunction with technologies, practice, and research (Perron et al., 2010). Perron et al. (2010), argued for required technological competencies paired with ethical standards to aid in social justice work, health care services, and client–worker and interdisciplinary communication at all levels of social work practice.

In 2012, the American Academy of Social Work and Social Welfare (AASWSW) launched the 12 Grand Challenges for Social Work Initiative (GCSWI) as a charge to the discipline to eradicate social problems in 1 decade through scientific progress (American Academy of Social Work and Social Welfare, 2012; Padilla & Fong, 2016). The challenges are categorized under three key areas: *Improving Individual and Family Well-being, Strengthening the Social Fabric,* and *Creating a Just Society.* The challenge *Harness Technology for Social Good* falls under the scope of *Strengthening the Social Fabric*. The GCSWI established a panel of technology experts who stressed that to remain a sustainable profession, social work education and practice must aggressively innovate in areas of policy implementation, big-data integration, and technology-enhanced operations (American Academy of Social Work and Social Welfare,

2018). The GCSWI societal goal is for digital technologies to accelerate the rate of meaningful and measurable progress in transforming the discipline, programs, discoveries, and education. By providing an ethical, technology-driven response, social work educators can ameliorate vexing social problems and inequalities (American Academy of Social Work and Social Welfare, 2012).

To achieve this goal, GCSWI charges schools of social work with establishing new academic technology-integration standards (American Academy of Social Work and Social Welfare, 2018). Berzin et al. (2015, p. 13) described the necessary steps to begin meaningful and measurable progress in social work education. The authors suggested that governing bodies, scholars, and researchers have left important questions unanswered regarding the impact of technology integration on social work curriculum and pedagogy. Berzin et al. (2015, p. 13) posited that social work education can integrate technology with five target approaches for curricula and pedagogical training that include the following:

1. Research grants to develop reliable and valid measures to evaluate the development of digital literacy in the profession.
2. Administrative commitment from teaching and research-intensive schools to support and value educational research as a legitimate form of scholarly inquiry.
3. Administrative commitment to expand curricula that incorporate the use of technology and to encourage social work educators to pursue work in this area.
4. Development of an accessible repository of technology-mediated assignments, syllabi, and teaching materials that meet accreditation standards.
5. Freely accessible webinars and podcasts on current trends in technology and practice.

However, none of the five suggested approaches include the development of ethical technology-integration knowledge.

What We Know About the Use of Technology in Social Work Education

Interactive, Participatory Media

Hitchcock and Battista (2013) proposed that to develop a critical knowledge base of the skills, ethics, and values relevant for a digitally literate 21st-century workforce, social work pedagogues integrate social media, into curricula. Similarly, Robbins and Singer (2014) argued that incorporating social media is essential yet pinpointed how some programs adopt innovation by providing educators with technology-integration advocacy and support, whereas others offer limited or nonexistent funding or administrative backing. Interactive participatory media is an inevitable teaching medium for social work education. The use of social media in social work education can be supported by the adoption of an ethical technology-integration framework.

Technology Adoption

Effectively teaching technology-mediated social work courses add 40% more time to educators' workloads (Forgey & Ortega-Williams, 2016). Researchers showed that social workers had experienced technology-adoption challenges that require more peer training on technology integration (Belluomini, 2013; Bullock & Colvin, 2017; Fitch, 2015). Two studies (Jones, 2015; Smith, 2014) centered on teaching online with essential relationship-centered instruction, mentoring between teachers and students, peer mentoring, and strong quality standards for technology integration.

Ethics

From 2016 to 2018, several researchers asserted that increased knowledge of ethical technology use and a deeper understanding of ethical social media practice should be mandatory in the social work curriculum (Boddy & Dominelli, 2017; Mishna et al., 2016). To this end, Barsky (2017) and Reamer (2018) urged social workers to remain in compliance when engaging

with technology in adherence to the NASW *Standards*. Barsky and Reamer advocated that practitioners and students be trained on ethical technology use in practice. The adoption of an educator-centered ethical technology-integration model would likely accomplish this agenda.

Educator Development

In 2019, two divergent works about pedagogical technology integration in social work education were released on the same day (March 18, 2019). Most notably, Hitchcock et al. (2019) published a widely regarded comprehensive text entitled *Teaching Social Work with Digital Technology*. Simultaneously, at the Society for Information Technology and Teacher Education conference, Schropshire, (2019) explored social work educators' use of Mishra and Koehler's (2006, 2008) seminal TPACK framework for distance social work educators. Levin et al. (2018) compared the perceived effectiveness of educators who teach distance and traditional courses delivered across nine social work competencies. As a result, one main factor in perceived effectiveness is the technology-integration readiness of the social work educator. Levin et al. (2018) posited that to become technology proficient, educators need experience in direct teaching of web-based courses through a knowledge-in-action approach. In a qualitative study of three early adopters, veteran distance social work educators named the *Elluminati* questioned the types of structures necessary to support distance and online courses with larger class sizes (Pelech et al., 2013). The results from the *Elluminati* indicated that large distance classes require teaching assistants and course graders; educators need more training, mentoring, release time, and workload assessment; and teaching and grading assistance can enhance an instructor's pedagogical methods.

Technology integration in social work education is an essential area of inquiry. In the scope of this somewhat novel research area, the discipline should be commended for the work

completed thus far. Social work literature along with interdisciplinary collaborations are rapidly increasing the arsenal of instructional-technology best-practices and an understanding of how digital technologies are applied in education, the teaching and learning process, and educators' development. Combined, these studies supported a discipline-specific, educator-centered, technology-knowledge framework that social work educators can leverage to learn to ethically integrate technology with teaching practices. When social work educators are situated in a strong ethical-technology framework, their technology-mediated teaching experience is further enhanced, and they can advance the skills necessary to apply this knowledge when appropriately trained with technology-oriented training approaches.

Background of the TPACK Framework

Educational-technology pioneers Mishra and Koehler (2005, 2006, 2008) conceptualized the widely regarded TPACK depicted in Figure G1. The TPACK framework is grounded in an expansion of Shulman's (1986a, 1986b, 1987) seminal theory of pedagogical content knowledge (PCK; see Figure H1). Shulman created this pedagogical reasoning and action model to impact K–12 education reform, understand the nature of teachers' tacit knowledge, and redirect training in teacher education (Harris et al., 2017; Shulman, 1986a, 1986b, 1987a). Shulman defined PCK as the strategic understanding that novice and seasoned teachers need to sufficiently teach learners specific content in diverse subject areas in comprehensible ways (Harris et al., 2017; Shulman, 1986a, 1986b, 1987). Originally, Shulman identified six categories for a teacher's educational knowledge base: content and curriculum knowledge, pedagogical knowledge, pedagogical content knowledge, knowledge of learners, knowledge of contexts, and knowledge of values. Remarkably, Shulman (1987) built on these categories to introduce PCK and set it apart as a theory to discern that the knowledge of the teacher and the content expert are not

mutually exclusive. Yet, this knowledge of pedagogy (teaching theory and methods) and knowledge of content (subject matter) overlap, pairwise, to create a union and intersection of PCK.

For Shulman, creating a professional knowledge base for teaching was politically and theoretically inspired (Cox, 2008; Shulman, 1986a, 1986b, 1987). In 1985, the Secretary of Education asked Shulman to demonstrate the existence of specialized teacher knowledge and to prove that teacher knowledge was divergent from practitioner knowledge; in other words, specific faculty training is essential for creating good educators (Cox, 2008; Shulman, 1986a, 1986b, 1987). In 1987, Shulman coined the term *wisdom of practice,* offering a way to more fully understand teacher's tacit knowledge "as they reason, make decisions about situations they confront and actions they must take" (Polanyi, 1966, p. 38; Shulman, 1987; Shulman, 2007, p. 560). To this end, Shulman (1987) proposed a model of pedagogical reasoning and action (MPRA; Harris et al., 2017), a checklist of expert teachers' observable classroom behaviors. The MPRA is an unsequenced interactive cycle of six nonlinear processes to develop a tacit knowledge base for good teaching and provides an opportunity to analyze the complicated and perplexing nature of praxis (Harris et al., 2017). In 1987, Wilson et al. established MPRA through observations of preservice teachers' classroom behaviors (Finger & Finger, 2013). The six MPRA elements that teachers observe in themselves and students include comprehension for understanding, transformation of ideas, instruction, evaluation, reflection, and new comprehension. Full descriptions of each process appear in Table C1. Shulman's (1987) theoretical work on the MPRA expanded discourse and opportunities toward a greater understanding of learning technologies and professional practice standards (Finger & Finger, 2013). In 2013, Smart et al. assessed the use of digital portfolios by four veteran teachers and

suggested teachers could develop a technological type of MPRA because instructional technologies did not come into play in 1987 when Shulman introduced pedagogical reasoning (Finger & Finger, 2013). In the study, Smart et al. (2013) found evidence of pedagogical reasoning and action when veteran teachers' digital portfolios were mapped to MPRA (Finger & Finger, 2013).

Experts Pierson (2001), Koehler et al. (2004), Angeli and Valanides (2005), and Niess (2005) first contributed technology-integration terminology into the PCK body of knowledge (Harris et al., 2017). To this end, Mishra and Koehler (2006, 2008) spent five years in a research program focused on teacher professional development. In this five-year study, they first conceptualized TPACK after observing what K–12 schoolteachers needed to understand how to appropriately incorporate technology in their teaching. From this research, Mishra and Koehler (2006, 2008) introduced TPACK as a framework for thinking about technology-integration problems and the ways teachers must integrate their separate knowledge of technology, knowledge of pedagogy, and knowledge content into one unique knowledge set. The TPACK model is a generalizable, specialized framework useful for K–12 and postsecondary educators that assumes three unique, overlapping, equal components of integrated requisite knowledge teachers can acquire and develop to aid in the appropriate use of technology in specific disciplinary teaching practices.

By asserting their proposition, Mishra and Koehler (2006, 2008) emphasized that teachers who have insufficient understanding of a subject or of technology use do not typically hold TPACK. Also, content experts who are technology proficient or technologists who are not proficient in content or teaching methods typically do not hold TPACK. TPACK is a unique integrated knowledge set that is the cornerstone of an educator's work with technology (Mishra

& Koehler, 2006, 2008). Mishra and Koehler affirmed TPACK's effectiveness in conceptualizing the aptitude required for teaching with technology. Mishra and Koehler asserted confidence in TPACK's triune benefits of pedagogy, content, and technology-integration knowledge in addition to theory. Integrated in TPACK's three primary knowledge components are pedagogical knowledge (PK), content knowledge (CK) and technological knowledge (TK). Misha and Koehler posited that the intersecting tripartite knowledge domains at each overlap in the diagram are equally significant. The remaining four peer components that comprise the full design include technological content knowledge (TCK), pedagogical content knowledge (PCK), and technological pedagogical knowledge (TPK), with TPACK situated in the center of the design where all components interplay (Koehler et al., 2006, 2008). Table B1 provides brief descriptions of TPACK's seven knowledge domains.

Ethical Standards for Technology in Social Work Education

On August 4, 2017, NASW (2017a) revised the 1996 *code of ethics* to reflect 19 new standards, considering the ethical use of technology. Also, published in 2017, the four governing associations of the social work discipline, the NASW, ASWB, CSWE, and CSWA formed a task force to collaboratively release the revised *Standards for Technology in Social Work Practice (*hereby termed *Standards;* NASW, 2017b). The learning and practice standards, alongside the NASW *code of ethics*, provide guidelines for the competent and ethical integration of technology in the social work discipline (NASW, 2017b). With this knowledge, social work educators are encouraged to follow Section 4 in the *Standards* framework for guidance on the "benefits, challenges, and risks" of technology integration involved in the design and delivery of education and supervision (NASW, 2017b).

The 12 *Standards* delineated in Section 4 (see Table A1) do not address curricula, teaching, or practice structures; rather, they offer guidance to social work educators involved in the design and delivery of technology-mediated education and supervision. When technology is the medium for knowledge dissemination, social work educators can remain competent, ethical, and current in their compliance with the *code of ethics*, regulatory bodies, and CSWE accreditation standards (Lopez, 2014; NASW, 2017a). The fourth section in the *Standards* serves best to apply an ethical, social work lens to the TPACK design.

Description of the Social Work — Technological, Pedagogical and Content Knowledge (SW - TPACK) Model

What constitutes an educator-centered, ethical, technology-integration framework for social work education? With the *Standards* (NASW, 2017b) banded with Mishra and Koehler's (2006, 2008) TPACK model, the expanded, discipline-specific framework held in the context of social work education can be useful in the practical application of ethical technological integration by educators and development programs. The following descriptions of TPACK's seven knowledge domains and the 12, Section 4 *Standards* (NASW, 2017b) illustrate how TPACK can be applied in social work education and ethics, yielding a banded SW-TPACK model (see Figure I1).

Content Knowledge (CK)

Mishra and Koehler (2006, 2008) and Koehler et al. (2009) affirmed CK is educator knowledge about the subject matter and depends on the various education levels of the learners (K–12 or college level). When applying CK to social work education, educators can understand the deeper knowledge fundamentals of the discipline and of social work students (Mishra & Koehler, 2006). Social work educators who lack a comprehensive understanding of CK can

distort the subject matter or prohibit knowledge transfer (Koehler et al., 2006, 2008, 2009). To this end, learners may develop misconceptions about the social work discipline (Koehler et al., 2006, 2008, 2009; National Research Council, 2000; Pfundt & Duit, 2000). Although misconceptions are common, social work educators can help students confront and repair misconceptions by adopting student-centered pedagogy, instituting creative learning experiences such as problem and activity-based learning and exploratory assignments to raise their metacognitive thinking skills (Galindo, 2020).

Pedagogical Knowledge (PK)

Independent of subject matter, PK is generic educator knowledge about teaching and learning strategies and values to promote and assess student learning (Koehler et al., 2006, 2008, 2009). When educators apply PK to social work education, educators possess a deep understanding of how students learn and can apply learning theories and values to a myriad of instructional methods, enabling learners to acquire new knowledge (Koehler et al., 2006, 2008, 2009, 2014). For example, in displaying the skills of teaching or what teachers know of teaching methods, this knowledge may include classroom management, evidenced-based classroom interventions, value-driven observations, and reflections of student learning and outcomes.

Technology Knowledge (TK)

TK is complex educator knowledge that encompasses developmental fluency with traditional, analog, and emerging digital technologies appropriate for curriculum integration. TK considers a teacher's ability to adapt to changes and ways of thinking and manipulating technology tools to apply productively, as well as recognize when technology can assist or impede learning (Koehler et al., 2006, 2008, 2009, 2014). In applying TK to social work, educators can develop a deeper understanding of ways to best integrate learning technologies

into the various curriculum content areas (Koehler et al., 2006, 2008, 2009, 2014). For example, before selecting a specific technology for instruction (e.g., VoiceThread, an asynchronous audio/video discussion-board alternative), a social work educator could attend a training to learn about the purpose of the tool (how and what it is used for), and the complexity or simplicity of the tool for use by students.

Technological Content Knowledge (TCK)

Koehler et al. (2006; 2008) described TCK as rich knowledge about the reciprocity between content and technology, and how technology can be used to provide new flexible and innovative ways of teaching curriculum content (Harris et al., 2009; Koehler & Mishra, 2006, 2008, 2009, 2014). Social work educators applying TCK know the content and how the integration of technology can convey the subject matter. An example of applying TCK to social work education would be an instructor knowing how to use NVivo software to code and analyze themes from qualitative data.

Pedagogical Content Knowledge (PCK)

Koehler and Mishra (2006, 2008, 2009, 2014) defined Shulman's (1986a, 1986b, 1987) idea of PCK as an understanding of content-appropriate teaching strategies. Educators with deep PCK understand what makes content easy or challenging, coherent and comprehensible for learners. With PCK, educators understand how to arrange content to enhance teaching practices and learner experiences, as well as how to modify content based on learners' previous understanding, various interests, and abilities. In applying PCK to social work education, the instructor intentionally selects relevant core ideas (CSWE competencies), scaffolds the content and sequences the competencies for meaningful learner engagement, and teaches using an arsenal of methods to allow students opportunities to test their thoughts and ideas (Neumann,

2014). The social work educator connects the competencies to the broader disciplines of research, scholarship, practice, policy, or community work.

Technological Pedagogical Knowledge (TPK)

Koehler et al. (2006, 2008, 2009, 2014), defined TPK as an educator's understanding of traditional, digital and emerging learning technologies (how to apply technology to pedagogical methods and strategies) and understanding how technical tools modify teaching and learning experiences. When applying TPK to the social work education lens, educators can develop teaching skills to help them select the best technology to support a specific teaching strategy. One example is to have learners meet in small synchronous groups on a video-conferencing tool to discuss how to construct collaborative media assignments using the VideoAnt tool, which annotates web-hosted video assignments, such as a YouTube role-play.

Technological Pedagogical Content Knowledge (TPACK)

Mishra and Koehler (2009) stated, "underlying truly meaningful and deeply skilled teaching with technology, TPACK is different from knowledge of all three individual knowledge domains. Instead, TPACK is the basis of effective teaching with technology, requiring an understanding of the representation of concepts using technologies; pedagogical techniques that use technologies in constructive ways to teach content; knowledge of what makes concepts difficult or easy to learn and how technology can help redress some of the problems that students face; knowledge of students' prior knowledge and theories of epistemology; and knowledge of how technologies can be used to build on existing knowledge to develop new epistemologies or strengthen old ones" (para. 13).

To begin the TPACK - enactment process, the social work educator can use Harris and Hofer's (2009) taxonomy of TPACK - based learning-activity types as a template to guide the design of a syllabus and lesson plan (Soong & Tan, 2010). For example, students would participate in an activity to respond to an instructor's questions with one or more technology tools used to guide the question and response process. This author modified the following adaptation of a TPACK-based design for social work based on Soong and Tan's (2010) suggestions. In action, the social work instructor can explore how students use clickers in lessons. Next, the social work educator can design a case scenario with various solution options for learners to select. Then, learners may choose a solution option using clickers and justify their choices during discussions. The social work instructor facilitates the discussion and guides students to relate theories learned in case scenarios with an understanding of the importance of designing case scenarios with appropriate solution options. The social work instructor's knowledge of how to use case studies (the learning activity) to aid learners' application of theories into practice, facilitated through the use of clickers and slides (representation), constitutes the instructor's TPACK (Soong & Tan, 2010).

Social Work-Technological Pedagogical and Content Knowledge (SW-TPACK) in Action

The SW-TPACK model bands the TPACK Venn diagram domains with 12 S*tandards* to reinforce the notion that social work educators can develop ethical technology integration knowledge to enhance the appropriate delivery of content to students. Mishra and Koehler's (2006, 2008) TPACK is relevant to all 12 Section 4 *Standards.* Notably, Kelly (2008) asserted that TPACK is a complex, multifactorial phenomenon, and therefore it is very challenging for educators to actualize all of the tacit effects that occur during the combination of these recursive elements in an individual class of students and teacher. Additionally, it is more difficult when

tacit social work ethics are applied to the TPACK phenomenon; therefore, all these elements may not be present at once, whereas many could coincide. However, this author applied Shulman's (1987) six MPRA steps shown in Table C1 to the *Standards* and TPACK framework to provide explicit processes that are observable in the performance of a social work educator applying the SW-TPACK framework in action. When these unsequenced, nonlinear, nonsequential processes are applied in action, Shulman (1987) asserted that the teacher could observe these behaviors in themselves and their students. Further, as previously mentioned, Smart et al. (2013) opined that an external observer could find MPRA evidence while teaching with technology. Thus, it is possible that SW-TPACK, when applied to the MPRA steps, could be externally observed during a performance evaluation review or teaching demonstration. The results from such an observation could inform social work educators' development process for those who teach with the SW-TPACK model.

Discussion

This paper proposes to expand an existing seminal technology-integration framework to reflect the ethical needs of social work educators. The SW-TPACK model applies Mishra and Koehler's (2006, 2008) technology-integration framework to the *Standards* (NASW, 2017b) to create a banded construct that is highly flexible in various contexts. This paper suggests that SW-TPACK can change the way social work educators think about technology by providing a way to conceptualize the appropriate and ethical integration of technology with content and pedagogical practices in a discipline-specific context. Consequently, even the most distinguished scholar can become an ineffectual teacher by delivering content without the requisite TPACK knowledge necessary to make the content comprehensible and accessible (McGraw-Hill Education, 2018). If social work educators adopt the SW-TPACK framework as an ethical technology-integration

model, it can provide a discipline-specific lens to enhance teaching aptitude and can thereby increase content acquisition by social work learners.

The current research on social work and technology integration is advancing yet warrants further probing to consider the requisite knowledge and preparation required of social work educators who teach with technology. The principal foci of literature concern teaching social work with digital technologies, online teaching and learning tools, technology adoption, media, and ethics (American Academy of Social Work and Social Welfare, 2012; Abels, 2005; Angeli et al., 2016; Barsky, 2017; Belluomini, 2013; Bentley et al. , 2015; Berzin et al., 2015; Boddy & Dominelli, 2017; Boer et al., 2011; Bullock & Colvin; 2017; Buquoi et al., 2014; Coulton et al., 2015; Fitch, 2015; Forgey & Ortega-Williams, 2016; Goldkind et al., 2019; Herring et al., 2016; Hitchcock & Battista, 2013; Hitchcock et al., 2019; Jones, 2015; Levin et al., 2018; Lopez, 2014; Mishna et al., 2017; Naccarato, 2010; NASW, 2017a, 2017b; Niess, 2008; Padilla & Fong, 2016; Patton, 2015; Pelech et al., 2013; Perron et al., 2010; Piña & Bohn, 2015; Ramsey & Montgomery, 2014; Reamer, 2018; Robbins & Singer, 2014; Shaw et al., 2012; Shorkey & Uebel, 2014; Smith, 2014; Soule, 2008). The foci of these social work articles treat some content and pedagogies in isolation from their relationship with technology. Therefore, these studies do not offer a framework to understand the integration of technology in all facets and mediums or from an educator-centered ethics lens. For instance, ethical teaching and technology integration are not mutually exclusive; this is where the SW-TPACK framework can meet the challenge. When banded with the *Standards* (NASW, 2017b), TPACK takes on the context of ethics in the delivery of social work education.

Implications for Social Work Education and Faculty Development

SW-TPACK is a much needed and useful model for future adoption by the CSWE, program administrators, and social work educators. In applying the professional-development suggestions from Herring et al. (2016), SW-TPACK can benefit ongoing assessments for progress monitoring and learning outcomes and may provide a guideline to evaluate the performance of social work educators teaching technology-mediated courses. The greatest value of the SW-TPACK model is in its application to social work education and the recursive training and knowledge development of social work educators. Social work researchers and program administrators need to increase educator training, preparation, assistance, and support on pedagogy that enhances technology integration with an ethical understanding (see American Academy of Social Work and Social Welfare, 2012; Abels, 2005; Angeli et al., 2016; Barsky, 2018; Belluomini, 2013; Bentley et al., 2015; Berzin et al., 2015; Boddy & Dominelli, 2017; Boer et al., 2011; Bullock & Colvin; 2017; Buquoi et al., 2013; Coulton et al., 2015; Fitch, 2015; Forgey & Ortega-Williams, 2016; Goldkind et al., 2019; Herring et al., 2016; Hitchcock & Battista, 2013; Hitchcock et al., 2019; Jones, 2015; Levin et al., 2018; Lopez, 2014; Mishna et al., 2017; Naccarato, 2010; NASW, 2017a, 2017b; Niess, 2008; Padilla & Fong, 2016; Patton, 2015; Pelech et al., 2013; Perron et al., 2010; Piña & Bohn, 2015; Ramsey & Montgomery, 2014; Reamer, 2018; Robbins & Singer, 2014; Shaw et al., 2012; Shorkey & Uebel, 2014, Smith, 2014; Soule, 2008). However, these studies did not provide a discipline-specific, educator - centered, knowledge-development framework for ethical technology integration in teaching and learning. To prepare social work educators for quality 21st-century teaching innovations, faculty development programs should immediately shift training approaches (Niess, 2008). If educators are not adequately prepared, they may unintentionally select and integrate inappropriate learning

technologies, creating a disservice to social work students. Current educator development programs use best practices to provide strategies, applications, and tools to engage, assess, and improve student-learning outcomes. Although these methods are effective, more tacit knowledge development, along with observations of explicit performance, can provide social work educators the requisite knowledge required to understand *which* tools to select and *how* to integrate innovative technologies in ethical ways (Niess, 2008).

Conclusion

This paper aims to apply Mishra and Koehler's (2006, 2008) TPACK theory to the ethical context of technology integration in social work education. This paper follows the Angeli et al. (2016) proposed suggestions that admonish researchers to examine TPACK's relevance in divergent contexts and content domains, such as social work, social science, fine arts and the humanities, where the TPACK body of knowledge itself, would not typically be explored. Mishra asserted that TPACK development is appropriate for use in social work education.

> I think the TPACK framework is applicable in many contexts and social work would be as good a fit as any. The key thing to consider is what is specific about social work that would be enhanced by technology in some pedagogically valuable manner. So, looking at the content to be covered, deeply, is key. (P. Mishra, personal communication, October 16, 2018)

With Mishra's affirmation, the SW-TPACK model is a starting point to further subsequent iterations of the framework for future discourse in social work education. The conceptual SW-TPACK is not an all-encompassing solution to technology-enhanced social work pedagogy and ethics. However, the SW-TPACK model may provide a way for educators to

conceptualize ethical technology integration in social work education. Finally, the SW-TPACK model may fill a gap in programs because it is flexible, generalizable, and adaptable to any social work training context. It provides a theoretical foundation for educator development, filling a gap that exists for those teaching technology-enhanced courses in social work education. Future investigations may test the SW-TPACK model for its effectiveness in social work education.

Technological Content Integration in Social Work Pedagogy

Norma Renee Love-Schropshire

University of St. Thomas

Author Note

Norma R. Love-Schropshire is a doctoral student in the Doctorate in Social Work Program, School of Social Work, the University of St. Thomas.

Correspondence concerning this paper should be addressed to Norma R. Love-Schropshire, School of Social Work, Wayne State University, 5447 Woodward Ave, Detroit, MI 48202.

Contact: ar3183@wayne.edu

Abstract

A review of the literature revealed that there were no recent systematic reviews that examined how social work educators integrate technology with content based on a teaching and learning framework. Therefore, this systematic literature review intended to explore how specific types of technology, pedagogy, and curriculum-content activities have been used in social work education. The research entailed collecting and reviewing published studies on social work education and technology. The overarching theoretical framework was Koehler and Mishra's Technological, Pedagogical, and Content Knowledge (TPACK), further synthesized with a secondary driver, Bloom's *Revised* Taxonomy. Results related to the technology theme suggest a myriad of technology tools are useful for teaching and learning activities and experiences in social work education. Pedagogical results suggest that social work educators have extensive options on the types of technology-driven instructional activities that can enhance teaching and learning experiences. Content-domain results revealed six subject areas where technology was integrated with subject matter designed to introduce or advance students who benefit from learning outcomes.

The strength of this systematic review was the selection of peer-reviewed studies that focused on the TPACK inspired domains of technology, pedagogy, and content knowledge synthesized in the context of Bloom's *Revised* Taxonomy. Future research considerations include conducting an annual systematic review with meta-synthesis to shed light on continuing advancements in technology-mediated social work education and developing a discipline-specific technology integration model.

Keywords: DistillerSR, Technological, Pedagogical, and Content Knowledge (TPACK); technology integration; Bloom's Taxonomy; social work education

Technological Content Integration in Social Work Pedagogy

Since 2005, a considerable body of literature has established that social work education has increased the integration of technology (American Academy of Social Work and Social Welfare [AASWSW], 2012; Abels, 2005; Barsky, 2017; Belluomini, 2013; Bentley et al., 2015; Berzin et al., 2015; Boddy & Dominelli, 2017; Boer et al., 2011; Bullock & Colvin, 2017; Buquoi et al., 2013; Coulton et al., 2015; Fitch, 2015; Forgey & Ortega-Williams, 2016; Goldkind et al., 2019; Herring et al., 2016; Hitchcock & Battista, 2013; Hitchcock et al., 2019; Jones, 2015; Levin et al., 2018; Lopez, 2014; Mishna et al., 2017; Naccarato, 2010; National Association of Social Workers [NASW], 2017a, 2017b; Niess, 2008; Padilla & Fong, 2016; Patton, 2015; Pelech et al., 2013; Perron et al., 2010; Piña & Bohn, 2015; Ramsey & Montgomery, 2014; Reamer, 2018; Robbins & Singer, 2014; Shaw et al., 2012; Shorkey & Uebel, 2014; Smith, 2014; Soule, 2008). For instance, the number of social work programs offering online courses has increased. In 2019, the Council on Social Work Education (CSWE) reported that among Doctor of Social Work programs, 75.0% offer at least part of the program online (41.7% entirely online), and 49.7% of graduate programs offer at least part of the program online (22.4% entirely online). In contrast, only 29.9% of Bachelor of Social Work (BSW) programs provide at least some courses online (6.0% entirely online), and 15.7% of Ph.D. programs have some online courses (3.2% entirely online; CSWE, 2019). Shorkey and Uebel (2014) examined the history of technology integration in social work education from the 1950s until 2012. Beginning in the mid-20th century, the number of technologically competent students and educators increased in schools of social work. Concurrently, schools and educators were challenged with knowing how to appropriately integrate technology to develop curricula, programs, content, and learning experiences. To this end, the American Academy of Social

Work and Social Welfare experts asserted that to create meaningful progress in one decade, it is imperative to leverage technology to guide curricular development and build educators' pedagogical content knowledge (Berzin & Shorkey, 2015). In response, modifications to the profession's guiding standards show measurable progress in the proliferation of technology in practice and education. In 2017, the National Association of Social Workers (NASW, 2017a) revised 19 *code of ethics* standards to encompass the ethical use of technology in the discipline. In 2017, the NASW, Association of Social Work Boards (ASWB), CSWE, and Clinical Social Work Association (CSWA) revised the *Standards for Technology in Social Work Practice* to reflect the ubiquitous impact of the digital age on education and practice (NASW, 2017b). Similarly, the 2015 CSWE *Educational Policy and Accreditation Standards* added the ethical and appropriate use of technology to the application of practice outcomes and competent professional behaviors (CSWE, 2015a; NASW, 2017a, 2017b).

Given the increase in programs and course offerings, along with the revision of professional standards, social work educators need to transform how they teach (Goldkind et al., 2019; Perron et al., 2010). To that end, Goldkind et al. (2019), asserted that only a small number of social work education programs support the integration of technologies into academic content. In social work education, teaching practices across the curricula and in the field do not generally make prolific use of instructional technologies. Consequently, some social work educators are caught in a digital divide that results in deficits in understanding how instructional technologies are best integrated with pedagogy and content (Wolf & Goldkind, 2016).

In 2013, Buquoi et al. conducted a national educator-centered ($N = 61$) survey on the types of technology tools integrated in the BSW teaching and learning process (TLP). The 61 BSW educators from 152 CSWE-accredited universities did not maximize the available

technologies at moderate or advanced levels. Although the majority of BSW educators reported the use of email, internet access, and learning-management systems, less than 50% of educators used other available instructional technologies and minimally encouraged technology use by learners (Buquoi et al., 2013). Clearly, BSW educators were more likely to integrate technology in the TLP as they gained more access to available technology and strengthened their constructivist teaching philosophies (Buquoi et al., 2013, p. 481).

Buquoi et al. (2013) speculated that the deficit in technology integration could be a result of several negative factors that impacted BSW educators: (a) some did not recognize the benefits of integrating technology; (b) being self-taught could have impacted the prevalence of technology integration; (c) the majority of BSW educators presented as teaching at the lowest developmental stage of Rogers' (2003) technology-adoption decision-making process, a knowledge deficit that may have delayed the integration process; and (d) a reported lack of time to plan lessons that incorporate technology with content. Finally, the study called for proper training of educators to learn how to appropriately integrate technology in the TLP to increase positive learning outcomes, and for future research to examine the interrelationship among pedagogy, content, and technology in social work education (Buquoi et al., 2013).

Taken together, these studies draw attention to the inadequate preparation of technology use by social work educators. Social work education has not formally adopted a suitable discipline-specific technology-integration framework to address the appropriate integration of instructional technologies in social work curricula. Social work educators should understand that the impact of technology-mediated teaching and learning goes beyond the narrow focus of being "online" or whether classes are seated or unseated. It is important to recognize the requisite knowledge educators require to appropriately integrate technology with content and pedagogical

practices, regardless of whether the medium is a traditional, on-the-ground, or fully online course.

Theoretical and Conceptual Frameworks

Currently, a growing need exists in social work education for professional development geared toward appropriate pedagogical technology integration (Hitchcock et al., 2019). This systematic review identified three areas that need to be specifically addressed to further technology-mediated teaching, learning and curricula: technology, pedagogy and content. Accordingly, two theoretical frameworks appropriately drive the review. Mishra and Koehler's (2006, 2008) Technological, Pedagogical, and Content Knowledge (TPACK) serves as the overarching framework and Bloom's *Revised* Taxonomy provides a secondary framework to guide the final outcomes related to this systematic review.

Bloom's *Revised* Taxonomy Domains

Benjamin Bloom's *Revised* Taxonomy (Anderson & Krathwohl, 2001) originally intended to enhance student learning outcomes. Moreover, Bloom's *Revised* Taxonomy (Anderson & Krathwohl, 2001) specifically guided the focus of technology-mediated teaching and learning considerations in the context of the cognitive, psychomotor, and affective - Domains of Learning. These learning domains provided three main categorical themes that guided the synthesis of the results. Since the intent of this review is to inform praxis within social work education, the primary focus is on how educators deliver technology-mediated instructional outcomes within cognitive, psychomotor, and affective domains.

Development of the TPACK framework

Thompson and Mishra (2007) presented the TPACK framework as the "Total PACKage" for teaching with technology for K–12 and college educators (p. 38). Shulman's (1985, 1986a,

1986b, 1987) seminal model of pedagogical content knowledge grounded the TPACK framework to explicate the nature of teacher knowledge shown in Appendix H (Harris et al., 2017). Shulman's scholarship illustrates two overlapping types of requisite tacit knowledge for competent teaching (Harris et al., 2017). Shulman asserted that good teachers need an understanding of pedagogical knowledge as well as an understanding of the subject matter being taught (Cox, 2008). In the early 2000s, K–12 and postsecondary educators struggled to understand how to properly incorporate technology with content in divergent contexts (Harris et al., 2017). Several researchers (Angeli & Valanides, 2005; Koehler et al., 2004; Lee, 2005; Margerum-Leys & Marx, 2002; Niess, 2005; Pierson, 2001; Thompson & Mishra, 2007 Wallace, 2004) spent more than a decade building on Shulman's scholarship, observing methods of veteran teachers who demonstrated both expert content knowledge and technology-integration competency (Harris et al., 2017). Concurrently, Mishra and Koehler (2006, 2008) added the word technological to their seminal model (see Figure G1) to introduce a widely-regarded conceptual framework. Notably, after five years of K–12 classroom observations, Mishra and Koehler noted that the most transformative teaching and learning experience in education was conducted with the use of digital technology. In these areas of investigation, Mishra and Koehler observed that technology was being treated separately from learning and teaching (McGraw-Hill Education, 2018). Mishra and Koehler's (2006, 2008) TPACK framework explains the requisite knowledge and competence educators need to effectively integrate technology into content and teaching practices.

The tripartite TPACK model illustrates in a Venn diagram the knowledge intersections between pedagogy, content and technology (Mishra & Koehler, 2006, 2008). The three overlapping Venn circles yield seven interconnected domains of knowledge. Each of TPACK's

domains include content knowledge—the exact subject matter; pedagogical knowledge—a deep expertise in teaching methods; technology knowledge—understanding that technology is ubiquitous and this knowledge is a potential mastery of teaching and learning technologies; pedagogical content knowledge—understanding best practices for teaching specific content; technological pedagogical knowledge—understanding how to use digital tools as pathways to outcomes; technological content knowledge—recognizing how technology affords, constrains, restricts, and influences teaching methods and content delivery; and TPACK—a specialized form of wisdom and understanding at the knowledge intersection of technology, pedagogy, and content that master educators draw on to deliver instruction (Mishra & Koehler, 2006, 2008). The TPACK model has aided researchers and educators at K–12 and postsecondary levels in understanding what educators know about digital-learning and new ways to help educators increase their knowledge; further, TPACK helps teachers advance their perspectives on the nature of knowing, decision-making, pedagogical reasoning, pedagogical action, and teaching activities (Harris et al., 2017; Kelly, 2008; Lambert & Sanchez, 2007).

In their 2017 review, Harris et al. (2017) identified several studies that measured, validated, interpreted, and characterized TPACK data. Harris (2016) reported that prolific scholarship on TPACK revealed a myriad of designs for knowledge development. Harris et al. (2017) found that studies (Archambault, 2016; Cavanaugh & Koehler, 2013; Chai et al., 2016; Koehler et al., 2012) that introduced new measurement tools and empirical techniques to assess the knowledge of educators in integrating technology into teaching methods. Additionally, Harris et al. (2017) found that Deng, Chai, So, Qian, and Chen's study established four types of tested validity for the TPACK construct and its subcomponents. Harris et al. (2017) reported that Valtoten, Sointu, Kukkonen, Kontkanen, Lambert, and Makitalo-Siegl created a valid teacher

self-report questionnaire aimed at 21st-century TPACK skills that served as an exemplar instrument for reliability and validity in testing. To add to this, Harris et al. (2017) reported that Tondeur, Scherer, Siddiq, and Baran examined teachers' TPACK profile data and discovered a new way to assess teachers' pedagogical "readiness to integrate technology in education" (p. iii).

Mishra and Koehler (2006) asserted that teaching with TPACK can enhance teacher knowledge in learning how to appropriately teach with technology tools. As a required requisite, teachers can develop an integrated knowledge of technology, pedagogy, and subject matter to apply TPACK. The TPACK framework guides the assumption that even if a teacher is an exceptional content expert, that teacher may be ineffective in practice due to a lack of the requisite knowledge necessary to make the technology-mediated content coherent (McGraw-Hill Education, 2018). The pragmatic TPACK framework represents three unique, overlapping, equal domains of essential integrated knowledge that educators can acquire, achieve, or develop to aid technology-integration practices (Soong & Tan, 2010). The TPACK framework applies to the professional development of social work educators in increasing their aptitude, readiness, and fitness to integrate technology with content and teaching methods.

The aforementioned theories guided the systematic review with the development of themes and codes necessary to find meaning that contributes to the social work body of knowledge. The relevancy of these theories is that they provide a context to focus the synthesis of the results. Three themes emerged from the Bloom's *Revised* Taxonomy -Domains of Learning: cognitive, psychomotor, and affective. Mishra and Koehler's (2006, 2008) TPACK framework assisted in the identification of codes in collected literature, analyzed to enhance praxis. The following is a conceptual framework of the combined research theoretical construct:

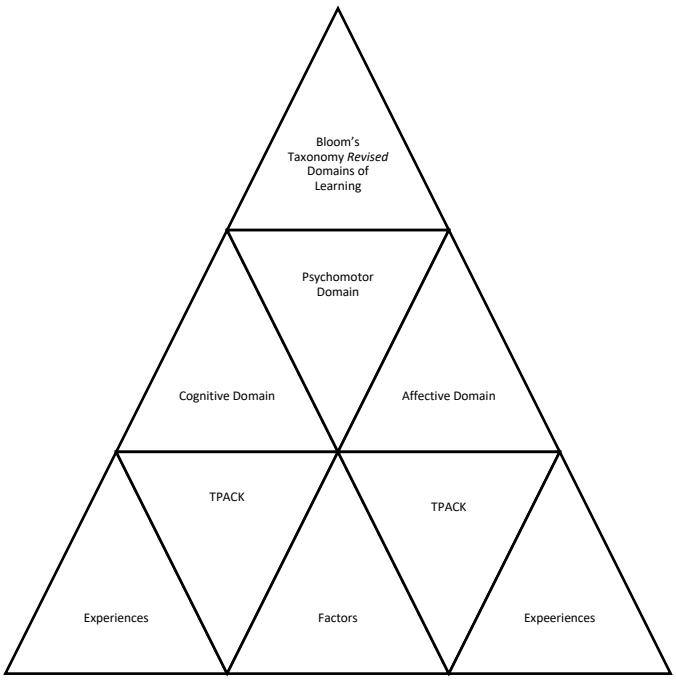


Figure 1. Bloom's *Revised* Taxonomy - Domains of Learning integrated with the Technological, Pedagogical, and Content Knowledge theory.

Purpose

Shulman (1986a, 1986b, 1987) and Mishra and Koehler (2006, 2008), observed that all teachers have sets of knowledge (subject matter, pedagogy, and, more recently, technology) that they treat as separate entities and in isolation from each other (McGraw-Hill Education, 2018). Research by Shulman and Mishra and Koehler expressed primary concern with how intersections of these different areas of expertise can improve for a teacher's development. Hitchcock et al. (2019), in their book *Teaching Social Work with Digital Technology*, affirmed that "a great need exists for a book about the knowledge, skills and values needed by social workers who use technology competently, professionally" (p. 6). In alignment, on January 3, 2020, the researcher found no empirical studies that specifically explored the presence of social work educator's requisite technology-integration knowledge.

Mishra and Koehler (2006, 2008) provided the theoretical assumption that fundamental teacher knowledge is present in three separate domains. This systematic literature review

referenced TPACK as the framework to explore the specific activities and experiences of social work educators who teach with technology. Based on the TPACK model, this review addressed the requisite knowledge and ethical factors required for social work educators to appropriately integrate and teach with technology in social work programs. The purpose of this study was to enhance technology integration praxis by examining how specific types of technology, pedagogy, and content activities inspired by TPACK are reflected in the context of social work education, within the theoretical orientation of Bloom's *Revised* Taxonomy (Anderson & Krathwohl, 2001). This review investigated the ways social work educators delivered content in technology-mediated teaching and learning activities and the experiences that resulted from these approaches. The following research question drove this systematic literature review and meta-synthesis: *How are specific types of technology, pedagogy, and content activities reflected in the context of social work education?*

Rationale

In a systematic review specifically, for social work education, Wretman and Macy (2016) empirically focused on the strengths and challenges of instructional-technology teaching methods, with an emphasis on educators understanding the situations where pedagogical strategies using technology are beneficial for student learning. Wretman and Macy found that the literature supports technology-mediated teaching methods as an alternative to traditional methods in social work education. However, Wretman and Macy restricted their systematic review to mainly quantitative findings in studies from 1997 to 2011. Consequently, this researcher designed this systematic review to explore technologies, pedagogies, curriculum content and experiences from 2012 to 2020 to continue to inform and further develop social work educators' praxis.

Methods

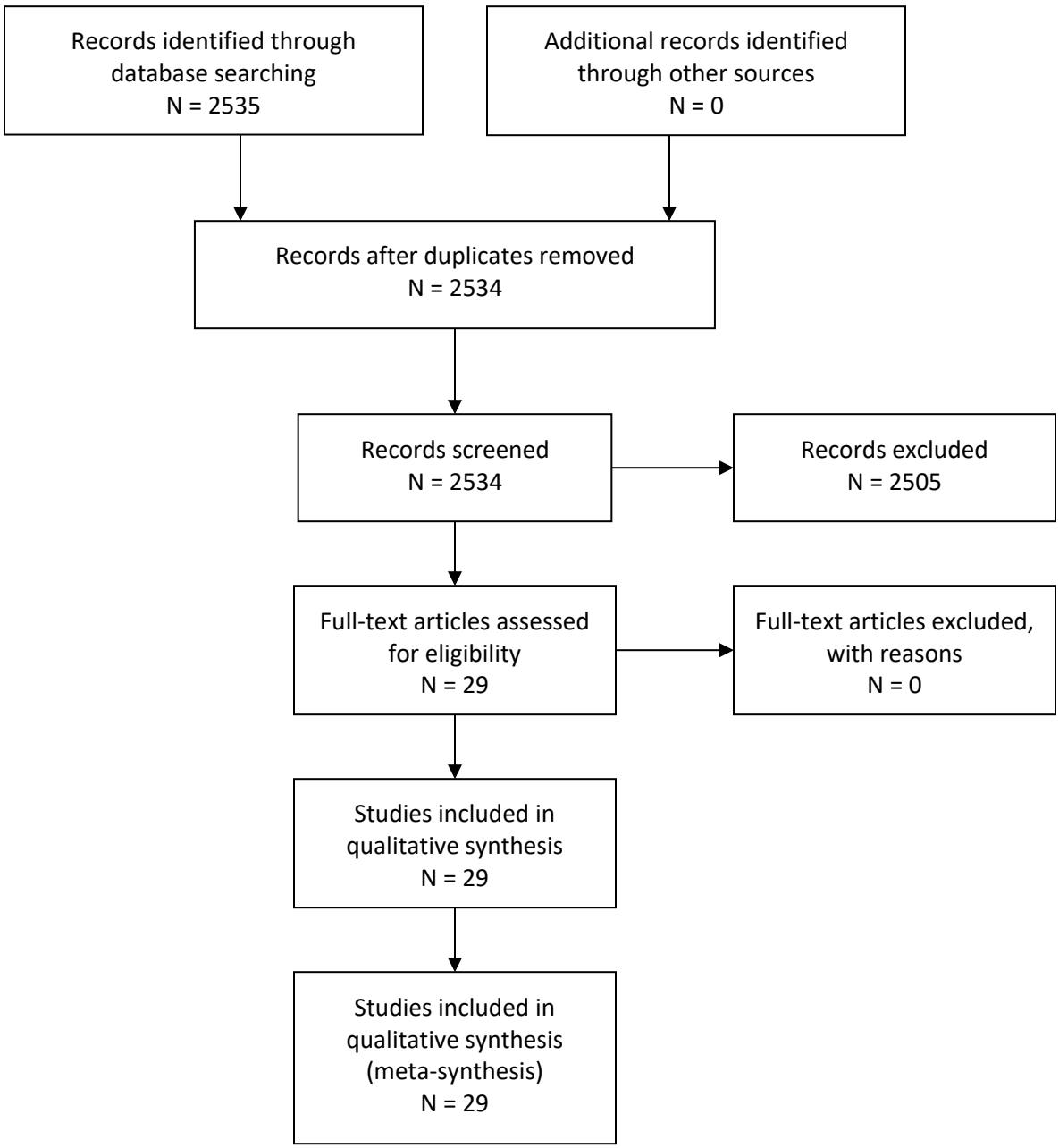
The researcher reviewed 29 studies on technology-mediated teaching and learning practices in social work education. The systematic review identified three emerging themes: technology, pedagogy, and content knowledge. The researcher vetted the selection of articles for analyzation through a rigorous Population, Intervention, Comparison, Outcome, Context, and Study Type (PICOCS) framework to provide a content analysis that would correlate with the research intention of informing praxis in the social work discipline. Likewise, DistillerAI (Evidence Partners, 2019) served as a second reviewer of the primary research collected to increase the credibility of research outcomes. In addition to DistillerSR and DistillerAI, the researcher used NVivo to process data to generate codes related to the theoretical research themes. Bloom's *Revised* Taxonomy and the TPACK framework theoretically assured all documents and data collection activities applicably addressed the research question. The researcher's role was to serve as the final analysis tool and to apply metacognitive skills to pattern-match codes and themes for a final synthesis that transmuted to the writing of results.

Meta-synthesis of the Systematic Review Research Design

In conducting this systematic review of the current literature, the researcher used the Preferred Reporting Items for Systematic Review and Metanalysis (PRISMA) method Record Flow Diagram shown in Figure 2 (Moher et al., 2009) to determine the eligible criteria for review; examine current themes regarding social work educators' use of technology, pedagogy, and content activities in teaching and learning; and organize, synthesize, and interpret the literature in a final product. The approach taken in this systematic review was informed by Bettany-Saltikov and McSherry (2016), Boland et al. (2017), Booth et al. (2016), and DistillerSR (Evidence Partners, 2019). These texts share common steps to writing, finding, and critiquing

evidence for systematic reviews. This sole researcher conducted all phases in this review, although ideally two reviewers would reduce selection bias and resolve disagreements or undecided conclusions (Bettany-Saltikov & McSherry, 2016).

Record Flow Diagram
Figure 2



Sample and Search Strategy

The researcher developed a protocol for record eligibility *a priori*. The deliberate search strategy was a database search delimited by title to increase the precision of the information search in order to identify publications that included the terms "social work education" and "technology." Figure 2 above provides a visual representation of the systematic processes of identification, screening, eligibility assessment, and final inclusion, resulting in 2,535 papers admitted to the systematic review. After removing one duplicate, 2,534 records remained during the title, abstract, and full-text screening stages with 2,504 records excluded. In the eligibility stage of this review, the researcher assessed 29 full-text articles for eligibility and inclusion. This review excluded grey literature, conference proceedings, non-English studies, systematic reviews, studies focused on social work practice, and teaching (research, field) notes. This review included studies between the years 2012-2020, studies involving at least one aspect of technology integration, studies related to social work education, content or pedagogy, any study design type, at least one student learning outcome, peer-reviewed journals, and studies that were social work discipline-specific. The search strategy for this review included keyword hand-searching and natural language searching using the subject gateway Google Scholar. In addition, the researcher conducted electronic database searches on Scopus, ERIC, and PsychINFO, and conducted reference mining in two books by Hitchcock et al. (2019) and Goldkind et al. (2019).

Data Collection, Instrumentation, and Synthesis

This review summarizes data containing all abstracted information from eligible studies, summarized in DistillerSR by tabular presentation (see Table E1). DistillerSR (Evidence Partners, 2019) is an intuitive, web-based systematic-review reference-management program that uses hierarchical screening and data-extraction software to provide transparent, audit-ready

results. First, the researcher used the pre-determined Population, Intervention, Comparison (none), Outcome, Context, Study Type (PICOCS) question criteria to frame the research question and evaluate studies to ensure comprehensiveness and specificity. The population (sample) was the 29 studies. The intervention was technology integration with no comparison. The outcome was the teaching or learning experience or activity. The context was the social work education teaching and learning environment, considered either as an in-person, traditional classroom setting or online, hybrid or distance learning format. The PICOCS criteria helped in identifying the three main themes from the TPACK framework (Technology, Pedagogy, and Content) that emerged in the studies (Bettany-Saltikov & McSherry, 2016; Boland et al., 2017).

During the data-collection phase, the researcher imported records for data extraction into DistillerSR (Evidence Partners, 2019). The selection process included five stages to review the full-text articles. After the researcher screened, reviewed, and extracted the data from each record, DistillerSR's artificial intelligence screening assistant, DistillerAI, vetted the screening process. Distiller AI served as a second reviewer to audit the inclusion/exclusion of references in this review (Evidence Partners, 2019).

The Data-Abstraction Process

Level 1—Title and Abstract Screening

The researcher screened the titles and abstracts of 2,535 records using a checklist in DistillerSR (Evidence Partners, 2019) to eliminate titles and abstracts that were not pertinent to the research question. If any uncertainty arose regarding inclusion/exclusion criteria, the article proceeded to Level 2 (see Figure 3).

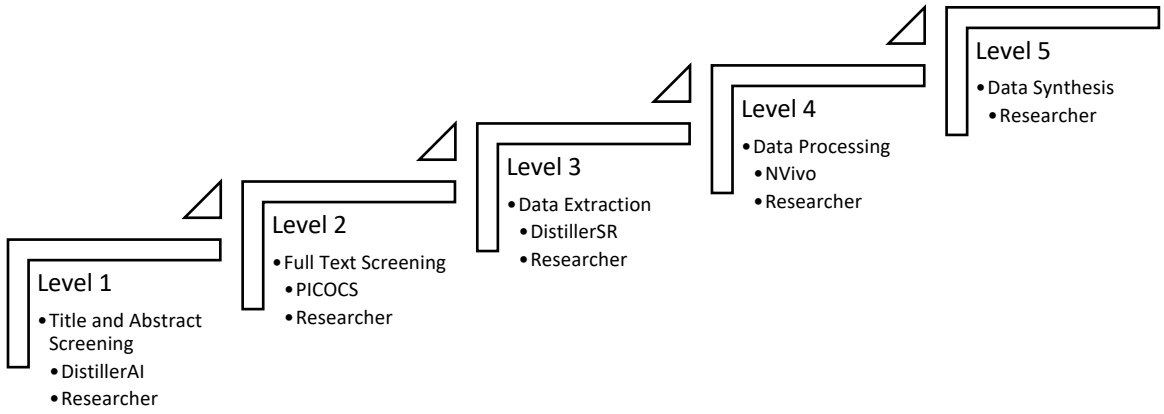


Figure 3. Data-abstraction process.

Level 2—Full-Text Screening for Verification of Eligibility Criteria

Using *a priori* study-eligibility criteria, the researcher assessed full-text copies of the potentially eligible studies to determine whether they fulfilled the inclusion criteria, in the case of disagreements.

Level 3—Data Extraction

In the data-extraction phase, the researcher color-coded and highlighted specific keywords in DistillerSR (Evidence Partners, 2019), including many verbs and keywords derived from Bloom's Digital and *Revised* taxonomies and a social media dictionary (Teach Thought, 2018; Anderson et al., 2001; Chandler, n.d.). The researcher conducted the data-abstraction process from each included full-text study. A hierarchical data extraction form in DistillerSR (Evidence Partners, 2019) derived the abstraction process, which leveled the hierarchy of the combined form by study characteristics, data collection, intervention, and outcomes.

Level 4—Data Processing

After purposively selecting recent academic literature through methods previously described, the researcher processed the primary research through NVivo qualitative data-synthesis computer software. Once processed, the codes were pattern-matched with theoretical associated themes. The preselected themes—cognitive, psychomotor, and affective—guided the coding-theme organization process.

Level 5—Data Synthesis

The researcher matched pattern codes with associated theoretical themes. The theoretical preselected themes provided the researcher the analytic ability to identify points of convergence and divergence of codes generated by NVivo. This was important to assure that the researcher insightfully identified influential nonrepetitive codes to be considered in key findings. To establish the trustworthiness of results, the researcher applied due diligence through the methodology design that included technologies during data collection, processing, and analysis. The use of technologies, such as DistillerSR, DistillerAI and NVivo, minimized errors in analyzing results due to human bias.

Methodological Reliability and Limitations

The research methodology included a collection an extensive review of academic literature (n = 29) related to technology-mediated teaching and learning activities. The limitations of the research related to credibility because the researcher was a single human reviewer for the study. To overcome these limitations and to maximize rigor, the researcher applied the practice of triangulation to data collection, theoretical drivers, and methods. The triangulation related to data collection included using DistillerSR (Evidence Partners, 2019), which served as a second reviewer to vet, audit, and strengthen the accuracy of this review. This

methodological approach reduced the risk of bias in the selection process across studies. The triangulation of theoretical drivers relates to the synthesis of the two frameworks to guide the focus of the collection, review, processing, and synthesis of data. To increase the credibility of the findings, the researcher employed the triangulation approach to the data collection. The triangulation method assured that the researcher processed and analyzed a combination of peer-reviewed quantitative, qualitative, and mixed-methods research literature for the study.

Study Characteristics

Study characteristics are best described as the analytic strategy applied to the research design. The methodological study design followed a logical sequence that included planning, theoretically designing, selectively collecting, technology-assisted processing, analyzing, and synthesizing. Furthermore, extensive research included triangulating the data from multiple sources of triangulated evidence, the two conceptual frameworks, and the methodology (see Figure 4).

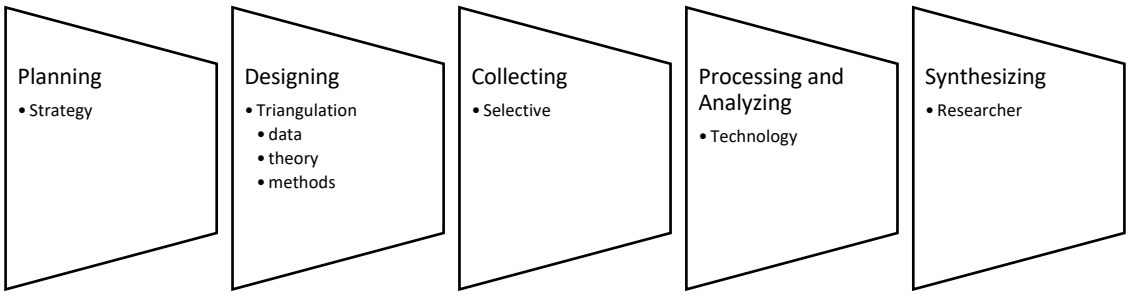


Figure 4. Study characteristics: Analytic strategy temporal scheme.

Operational Definition of Terms

To provide an appropriate perspective to this systematic review, the researcher created an operational list of definitions. An extensive list can be referenced in Appendix F. The following are the most fluid terms in the field of social work education with definitions that provide clarity while reviewing this research.

Content analysis: The primary analytic tool of the data is the researcher who rigorously sought to gain an understanding of the interrelated content meanings.

Social work education: An instructional aim in higher education to cultivate social work practitioners and educators.

Teaching and learning: The programs of study, units of instruction, and instructional methods that are cohesively designed to achieve program aims, teaching objectives, and learning outcomes.

Organization of the Review

The next section of the review presents the literature synthesis for each TPACK framework theme. First, it includes a description of each study that covered the TPACK master themes of Technology and seven subthemes; Pedagogy with educator and student experiences; and Content, with six subthemes. Table E1 designates studies by author and program type. The subsequent Summary of Findings section presents TPACK themes synthesized by Bloom's *Revised* Taxonomy.

TPACK Master Theme: Teaching and Learning Technology

The classroom settings described in this study go beyond Internet or web-based instruction, described as eLearning, distance, or online learning. The context is situated in technology-mediated postsecondary social work education classrooms. This study includes instructional technologies used to teach in hybrid, blended, and traditional, on-the-ground, face-to-face, or seated courses. Of the 29 full-text articles abstracted, seven subthemes emerged in the technology domain: (a) synchronous and video-conferencing software; (b) virtual-world formats/simulation/focused learning games/virtual reality; (c) hardware or accessories; (d) visual tools, techniques, assignments, and lecture capture; (e) interactive participatory media and social-

networking sites; (f) reference management; and (g) learning management systems, communities, asynchronous, cloud-based tools, and software.

Synchronous and Video-Conferencing Software

Five graduate program studies (Cappiccie & Desrosiers, 2011; Cummings et al., 2015 Kayser et al., 2013; Noble & Russell, 2013; Pardasani et al., 2012) used *synchronous and video-conferencing software.* In this category, learning technologies included Adobe Connect; Blackboard Collaborate; Centra, a web conferencing program that lets people interact with one another "live" in a virtual online meeting environment; E-Live; Google Hangouts video conferencing; Skype; real-time lectures; ooVoo; Angel; and (live) online chats. The remaining 24 studies excluded a report of this type of technology.

Virtual World Formats/Simulation/Focused Learning Games

Six studies used *virtual world formats/simulation/focused learning games/virtual reality.* Two undergraduate studies included Levine et al. (2013) and Reinsmith-Jones et al. (2015). Four graduate studies included Cummings et al. (2015), Lee (2014), Noble and Russell (2013), and Wilson et al. (2013). In this category, learning technologies included avatars, virtual worlds/simulations (Second Life, OpenSim), and Voki, a free service that allows users to create personalized speaking avatars and use them on blogs and profiles and in email messages. With Voki, students select a character from many styles that voki.com provides (e.g., Animals or Oddballs). The remaining 23 studies excluded a report of this type of technology.

Hardware or Accessories

Seven studies utilized *hardware and accessories.* Hitchcock and Young's (2016) study was conducted at the undergraduate/graduate-program level and three studies (Baker & Hitchcock, 2017; Baldridge et al., 2013; Voith et al., 2018) at the undergraduate level.

Additionally, three studies by Lee (2014), Lee et al. (2019), and Noble and Russell (2013) reported on the graduate level. In this category, learning technologies included desktops, laptops, smartphones (iPhone, Android, Blackberry, etc.), writable digital boards, whiteboards, webcams, technology table carts, videotapes, tablet computers (iPad, Galaxy Tab, Xoom, etc.), clickers, computers, mobile devices (e.g., using mobile devices to take pictures or videos, access podcasts, conduct online searches); console gaming (Wii, Xbox, Nintendo DS, etc.); other devices, audio/video, desktop computer gaming, digital photo cameras, digital video camera, DVD or CD players, big monitors, interactive whiteboards (SmartBoard, Numonics, Promethean, TouchIT, Mimi, etc.), microphones, and computer laboratories with Internet access or WIFI. The remaining 22 studies excluded a report of this type of technology.

Visual Tools, Techniques, Assignments, and Lecture Capture

Eleven studies used *visual tools, techniques, assignments, or lecture capture.* Four studies (Goldingay et al., 2014; Grant et al., 2016; Jones et al., 2019; Voith et al., 2018) attended to the undergraduate level, and eight studies (Chonody, 2018; Cummings et al., 2015; Elliott et al., 2013; Holmes et al., 2015; Noble & Russell, 2013; Peabody, 2013; Wilke et al., 2016) to the graduate level. In this category, learning technologies included digital storytelling, video journaling, Piktochart, Photovoice, video role-play, Venngage, Infographics (digital image or file, visual image), PowerPoint, video, Panopto's Course Capture, audio/video, online video tutorials, Camtasia Relay, documentaries, or video clips. The remaining 18 studies excluded a report of this type of technology.

Interactive Participatory Media and Social-Networking Sites

Twelve studies used *interactive participatory media and social networking sites.* One study (Hitchcock & Young, 2016) attended to the undergraduate/graduate-program level, six

studies (Baker & Hitchcock, 2017; Baldridge et al., 2013; Deepak & Biggs, 2011; Goldingay et al., 2014; Jones et al., 2019; Voith et al., 2018) to the undergraduate level, and five studies (Cappiccie & Desrosiers, 2011; Cummings et al., 2015; Kilpelainen et al., 2011; Lee, 2014; Noble & Russell, 2013) at the graduate level. In this category, learning technologies included Pinterest, Facebook, LinkedIn, Twitter, Instagram, Google Plus, cyber lounges, chat rooms, social media, Wiki, blogs, Mental Health Chat (@MHchat), #MacroSW Chat, Live Messenger, YouTube, broadcasts/podcasts, or online forums. The remaining 17 studies excluded a report of this type of technology.

Reference Management

One study by Kayser et al. (2013) used a *reference management software*, RefWorks, at the graduate level. The remaining 28 studies excluded a report of this type of technology.

Learning Management Systems, Communities, Asynchronous, Cloud-Based Tools, and Software

Seventeen studies used *learning management systems and communities*. The remaining 12 studies excluded a report of this type of technology. One study by Aguirre and Mitschke (2011) considered the undergraduate/graduate program level, five studies (Baker & Hitchcock, 2017; Goldingay et al., 2014; Marson et al., 2010; Rodriguez-Keyes & Schneider, 2013; Voith et al., 2018) were found at the undergraduate program level, and 11 studies (Cappiccie & Desrosiers, 2011; Chonody, 2018; Cummings et al., 2015; Douville, 2013; Hanbidge et al., 2018; Holmes et al., 2015; Kilpelainen et al., 2011; Lee, 2014; Lee et al., 2019; Noble & Russell, 2013; Wilke et al., 2016) at the graduate level. In this category, learning-management technologies included WebCT, Adobe Connect, Angel, Blackboard, E-Learning Vista, Instructure Canvas, unspecified learning-management systems, Optima learning environment, Sakai, Moodle,

discussion-board postings, learning communities, course websites, blended/hybrid classrooms, Webbed Connectivity, Tegrity, email (instructor), asynchronous technology, audio/video, broadcasts/podcasts, chat rooms, documentaries or video clips, DropBox, Google Application Suite, eportfolio, Internet, learning communities, texting, highly interactive online learning environments, mobile-learning options, email (student), or QR codes.

TPACK Master Theme: Educator and Student Experiences with Pedagogy

In the Cappiccie and Desrosiers (2011) study, learners completed six online discussion boards. The goal was to encourage the linkage of the field to assigned class material. The study primarily focused on the benefits and challenges of using Adobe Connect for students and professors.

In the Cummings et al. (2015) study, the same educators taught in the online and traditional programs using synchronous lectures and discussions. The instructor facilitated a highly interactive online learning environment and used synchronous and asynchronous technologies for traditional and real-time lectures and discussions. Learners demonstrated practice and clinical skills by creating short animated films using avatars and recording and uploading annotated role-plays.

In the Noble and Russell (2013) study, learners in an online course reportedly needed and wanted substantial interaction and facetime with their instructor. Learner perceptions of the quality and quantity of instructor interaction were critically important. Another vital factor was the amount of time invested by the instructor as a significant determinant of effective learning and student satisfaction for an online environment. The Noble and Russell study affirmed that some educators are better suited for teaching either on-campus or online courses. Learners in the study exhibited little consistency in selecting favorite educators from the seven educator–course

developers. Notably, educators consistently reported that online teaching is a substantially time-consuming endeavor. The Noble and Russell study reported that educators received course release time to prepare existing online courses with new technology, new content, and new readings.

In the Pardasani et al. (2012) study, learners consistently reported that the content delivered was more significant than the mode of delivery. The instructor held classes through video conferencing supported by online media; every class session teleconferenced with learners attending class on two campuses simultaneously. Interviewed learners made a significant emotional investment in selecting courses by considering logistics, where a class was offered, and their prior knowledge of the instructor. Pardasani et al. contended that instructor training to learn how to maximize available technologies is critical to the success of distance-education classes, especially to ensure the success of teleconference modalities.

In the Levine et al. (2013) study, educators used a virtual office location to help students assume the practitioner role in order to experience a case-management simulation. As soon as a student logged into Second Life, a researcher immediately checked the student in, offered a teleport (direct and instant transportation), and guided the avatar directly to the virtual case-management office. Students participated in an online orientation developed using instructional design principles derived from cognitive-load theory.

The Reinsmith-Jones et al. (2015) study integrated reflective journaling with simulation through Second Life. The learning activity included a simulated virtual 3D social-justice exercise where learners experienced contact with difficult situations and were given directions to choose a solution that provided the most justice. Learners were required to explain the reasoning for their answers.

In Lee's (2014) study, learners were assigned a label and asked to maintain that role throughout the entire semester in a hybrid course. The purpose of the virtual "cocktail party" experiential-learning simulation was to help learners understand the impact of labeling and stigmatization.

In the Wilson et al. (2013) study, the instructor conducted a weekly lecture and laboratory. Teacher feedback and student evaluations reported that this format was effective in teaching direct-practice skills. The skill of home visiting was initially missing from the course. Traditionally students learned home-visiting skills in the field. However, educators added a module on home visiting to provide learners an experiential opportunity to practice home-visiting skills in a web-based home visiting simulation.

In the Voith et al. (2018) study, educators used clicker technology to encourage student engagement and interaction during instructional time. The educators proposed intriguing questions to facilitate thoughtful discussion and meaningful learner feedback. Learners were able to debate or apply personal experiences to a concept. Professors used learners' clicker responses to expand on the classes' experiences and to elicit individual responses. Using this pedagogical approach, learners had more time to ponder their answers and respond anonymously, and the professor reportedly capitalized on diverse responses and explored answers in greater depth.

In the Chonody (2018) study, the instructor introduced a new photography-based assignment to facilitate student self-reflection, class discussion, and critical thinking. The Peabody (2013) study described pedagogy that leveraged images to convey meaning and specific messages directed toward advocacy in a social-justice project. Grant and Bolin (2016) studied lecturers used in instructional time to teach the fundamentals of digital storytelling, and one additional session was devoted to training. Similarly, in the Kayser et al. (2013) study, educators

watched video tutorials to learn the function of a specific learning technology, then trained students by showing the same videos. The Elliott et al. (2013) study described the use of a Course Capture webcast service that offered educators a method of combining audio, video, slides, and live-screen recordings into an online laboratory setting. In the first instructional session, educators taught students to code data and write a research question.

In the Peabody (2013) study, the instructor facilitated a class discussion on the use of images to convey powerful meanings. The class reflected and the instructor introduced the history and principles of Photovoice, with web-accessible PowerPoint examples. Then the instructor discussed the power of the photographs and captions in conveying specific messages directed toward advocacy and the need for change implicit in each Photovoice project. Learners interviewed peers about a social-injustice episode, the impact of that event on the community, and how the interviewee felt about it at the time. Learners then reflected on the experience as a whole. Each interviewee drew an image illustrating some crucial part of the event. Next, students described the meaning of the drawn image in the context of the story. This exercise reportedly transformed the class into a community because all participants had a collective experience and shared some key examples.

The Hitchcock and Young (2016) study incorporated interactive, participatory social media into instruction and developed an assessment rubric. The professors developed an assignment that combined policy content, microblogging, and self-reflection. After watching a film, students wrote a brief reflection and participated in a live Twitter chat assignment facilitated by the professors. Following the chat, students wrote another self-reflection. Educators used the *Participatory Culture as a Pedagogical Framework* approach. In the Baker and Hitchcock (2017) study, educators established professional Pinterest accounts and developed

sample boards to serve as learner models. The professors conducted grading in a learning-management system and facilitated class discussions about the professional use of social media. Students searched for human behavior and social environment (HBSE) content from online sources and assessed its appropriateness for inclusion on a Pinterest board.

In the Baldridge et al. (2013) study, the use of mobile devices allowed educators to give learners instructions, assignments, prompts, or relevant information in an innovative medium, instantly and remotely. The class Facebook page served as a medium for discussion, and students documented artifacts using their mobile devices. The pedagogy consisted of lectures, small group activities, and class discussions.

The Deepak and Biggs (2011) study introduced educators' use of the intimate-technology teaching modality. Learners were instructed to provide written responses to five open-ended questions and wrote about their deep emotional responses. This visual/auditory credibility enabled learners to relate to the speakers and content with strong emotions. Learners reportedly felt angry, sad, and ill at what they witnessed in the YouTube clips. Learners reportedly felt engaged and involved in the teaching and learning process.

In the Goldingay et al. (2014) study of two cohorts, the 2013 cohort had a greater sense of social presence and connection with the instructor and content. The instructor's interventions may have contributed to the learners' sense of connection and peer trust, enabling them to feel confident in posting their practice videos for group feedback. The activities provided learners with an experience of social presence and emotional connectedness. Learners' comments explicitly related that they felt the lecturer was speaking directly to them and felt they were not alone, which demonstrated a sense of instructor–learner engagement. Learners wanted to spend

time in the formative peer-assessment space and a great deal of learning reportedly occurred. Video “selfies” were available to both cohorts.

In the Jones et al. (2019) study, the professors introduced infographics during the lecture. Educators shared instructional YouTube videos about software and cloud-based tools that supported infographic creation such as Piktochart and Venngage. The educators created one video related to different free software options. Educators submitted final grades before data synthesis. In addition, they agreed to a multistage, scaffolded-assignment presentation to introduce learners to infographics and used a shared rubric to score assignments across courses.

In the Kilpelainen et al. (2011) study, educators used offline, online, and face-to-face teaching and learning methods to improve meaningful learning processes. Offering learning opportunities to contribute work in the Wiki made the study process more transparent and enabled peer encouragement and peer discipline. The role of the teacher was to remain in the background and provide assistance when necessary. With help from the educators, technological challenges were resolved. Each student team received their Wiki page and was introduced to writing a Wiki and commenting on other teams’ pages. Learners were motivated to use a myriad of communication and collaborative tools to foster deeper collaboration.

In the Kayser et al. (2013) study, educators developed 29 brief online video tutorials of application exercises and course assignments. The educators watched tutorials and then showed the videos to students. The students defined the information needed to conduct research.

In the Aguirre and Mitschke (2011) study, educators used the hybrid model for collaborative/guided instruction on discussion-board forums and private communication through emails, file sharing, online assessments, student tracking, assignment management, and virtual collaboration (synchronous and asynchronous). The lectures were in PowerPoint format.

In the Chonody (2018) study, educators used a new photography-based activity developed for an online gerontology course. First, students posted a photograph on the online discussion board in their learning-management system to illustrate their perspectives on aging and included a description of why they chose a particular photograph. Second, an online discussion was facilitated by processing the entirety of the photographs posted by students. The learning activity centered on self-reflection, group discussion, and critical thinking. The instructor created a PowerPoint presentation from student photographs posted the previous week. The photo activities offered a visual approach to stimulate critical thinking and appealed to generational needs.

In the Douville (2013) study, the same professor taught an online section for 2 semesters. All learners participated on a single discussion board (as did the instructor). The Learning Community section was identical to the Discussion Board section in content, teacher role, grades, and assessments, except that the assignments were completed in learning communities. The professor randomly assigned learners in the learning community section to 1 of 4 small-group learning communities. Learners earned class participation points by posting meaningful responses to the assigned topic on seven discussion boards. Substantive peer interaction was encouraged in both sections. However, in the learning-community section, two additional discussion assignments were given to encourage mutual aid to determine if this would help learners achieve their objectives.

The Hanbidge et al. (2018) study reported that the capstone experience was a learner-directed display of fundamental graduate-level practitioner competence, a meaningful report of development, ongoing examination, reflection, and a glance into the learner's future through a plan for continued professional growth. The class added to a bibliography daily. The professors

decided not to have multiple ePortfolios for each course but rather to have a single consolidated space where students were instructed to specifically consider what they gained from the program and the expected core competencies. Learners accumulated a collection of scholarly artifacts through coursework and a field practicum.

In the Holmes et al. (2015) study, educators taught two sections of the same course in active-learning classrooms. The integration of collaborative technology promoted active learning. Through the integration of Google Hangouts, students learned from real-world experts in the practice and theory course. Learners posted questions about the readings and recorded lectures. The educators administered an informal evaluation. For the on-camera class social presence, educators provided Google Hangouts training to the guest speakers. During group instruction, educators facilitated social presence by enlarging the view to full screen and by muting the listening group.

In the Lee et al. (2019) study, the instructor's effectiveness with teaching methods in the Active Learning Classroom (ALC) predicted students' overall experience. ALC's allow educators to develop more helpful and innovative teaching methods and facilitate students' active discussion and group activities. Some educators are reportedly more competent in using technology than others; therefore, to maximize educators' effectiveness, universities should provide technological-training with educators to develop various teaching methods and activities that are compatible with the new features of ALC's. The professors in the study received individual consultations as well as group trainings. As a result, students reportedly scored effective teaching as the most favorable rating in micro social work courses. The educators in micro social work courses engaged in more individual support sessions focused on the specific practice of course competencies and had more opportunities to adopt and use more interactive

and collaborative technologies. Study results supported the hypothesis that professors' practical usage of classroom space and technology enhances students' learning experiences. Using iPads, students videotaped their communication skills and engaged in role-play exercises. The educators observed communication behaviors in a simulated clinical setting.

In the Marson et al. (2010) study, the same instructor taught traditional and online sections with identical assignments. Each ethical standard was integrated into discussion boards. Students were required to participate in every discussion.

In Rodriguez-Keyes and Schneider's (2013) study, the professor took a facilitator role and developed a hybrid course focused on participatory and student-centered learning activities. Specific pedagogical changes involved the development of new course activities to reflect the integration of theory and practice. Learners observed in the community and used online activities to reflect on the interface between their observations and theories. The hybrid model was useful because it required learners to participate in challenging and engaging online learning activities that complemented traditional class time. Written feedback from hybrid course evaluations and instructor observations revealed the benefits of offering courses in the hybrid format. When motivated by educators, most students provided substantive peer feedback. Finally, once a week, through online blogs, the educators assessed each learner's understanding. The results provided a foundation to launch in-class discussions.

In the Wilke et al. (2016) study, the instructor used two different assignments to assess the individual learners' crisis-intervention knowledge and skills: an assessment and treatment plan of a fictional case (due at midterm) and a digitally recorded role-play (the capstone assignment). Learners watched a video of an initial interview with a fictional client. Through observing the client session, learners developed an assessment and treatment plan by applying

the course crisis-intervention model. Next, learners identified appropriate interventions. Learners were evaluated on their insights into the client's situation and ability to apply course content in describing the client's presenting problems. Learners reportedly applied advanced integrated theory and identified evidence-based techniques appropriate for the client's circumstances in the context of social work values and ethics. The instructor provided written feedback to identify the learner's strengths and weaknesses to apply in the final role-play.

TPACK Master Theme: Content

The Content domain revealed six subject areas: ethics; field education; HBSE/diversity/justice; policy; research; and practice.

Ethics

Two studies with ethics and values content overlapped with HBSE/diversity/justice and public health subject matter (Peabody, 2013) at the graduate level and practice content at the undergraduate level (Marson et al., 2010).

Field Education

Four studies presented field education subject matter. Goldingay et al. (2014) presented an undergraduate study that focused on practicum and practice skills. The Cappiccie and Desrosiers (2011) and Hanbidge et al. (2018) researchers presented graduate-level studies that focused on practicum, with the former focusing on advanced practice and the latter as a capstone. Noble and Russell (2013), presented a graduate-level study that overlapped with HBSE/diversity/justice content along with policy and social-welfare subject matter.

Human Behavior and the Social Environment (HBSE)/Diversity/Social Justice

Ten studies fell into the HBSE category. Subthemes of this category included social justice, public health, racism, antiracism, cultural competence, military and veterans work,

diversity, diverse populations, social problems, cultural immersion, and income inequality. As previously mentioned, the Peabody (2013) study on ethics and the Noble and Russell (2013) study on Field Education and Policy/Social Welfare overlapped with HBSE content at the graduate level. An undergraduate/graduate research methods study by Aguirre and Mitschke (2011) also overlapped with HBSE/diversity and social justice themes. Additionally, the following eight studies presented HBSE/diversity or social justice subject matter: Hitchcock and Young (2016) presented at the undergraduate/graduate level and this study overlapped with the practice theme; Lee (2014) presented at the graduate level; Baker and Hitchcock (2017), Deepak and Biggs (2011), Grant et al. (2016), Rodriguez-Keyes and Schneider (2013), and Voith et al. (2018) all presented at the undergraduate level.

Policy/Social Welfare

Three of the 29 studies presented on Policy and Social Welfare. A subtheme of this category included policy and the history of social welfare and social work. Reinsmith-Jones et al. (2015) presented at the undergraduate level and Kayser et al. (2013) conducted a graduate-level study that overlapped with Research. As previously mentioned, Noble and Russell (2013) presented a graduate-level study that overlapped with HBSE/diversity/social-justice content along with Policy and Social Welfare subject matter.

Research

Two studies were found on research methods, designs, and statistics. As previously mentioned, the undergraduate/graduate study by Aguirre and Mitschke (2011) overlapped with HBSE/diversity and social justice themes. Similarly, Kayser et al. (2013) presented a graduate level study that overlapped with Policy and Social Welfare.

Practice

Twelve studies focused on generalist, specialized, or advanced practice. Subthemes in this category included practice approaches, clinical crisis intervention, direct practice, direct service, advanced-level theory and skills, evidence-based interpersonal practice (clinical), management, leadership and community practice (macro), gerontology, case management, and role play. Three undergraduate studies included Baldridge et al. (2013), Jones et al. (2019), and Levine et al. (2013). The remaining studies presented at the graduate level: Chonody (2018), Cummings et al. (2015), Douville (2013), Holmes et al. (2015), Kilpelainen et al. (2011), Lee et al. (2019), Wilke et al. (2016), Wilson et al. (2013). As previously mentioned, the Hitchcock and Young (2016) study overlapped with the HBSE/diversity and social-justice theme and presented at the undergraduate/graduate level.

Summary of Findings

The purpose of this study was to enhance praxis of technology integration in social work education by examining how specific types of technology, pedagogy, and content activities inspired by Mishra and Koehler's (2006, 2008), Technological, Pedagogical and Content Knowledge (TPACK) framework are reflected in the context of social work education, within the theoretical orientation of Bloom's *Revised* Taxonomy (Anderson & Krathwohl, 2001). The peer-reviewed studies collected for the research (n = 29) focused on Bloom's three Domains of Learning: cognitive, affective, and psychomotor. After pattern matching codes and themes according to the TPACK framework, the three Bloom's *Revised* Taxonomy—Domains of Learning themes were associated with teaching and learning experiences and factor codes, see Figure 5.

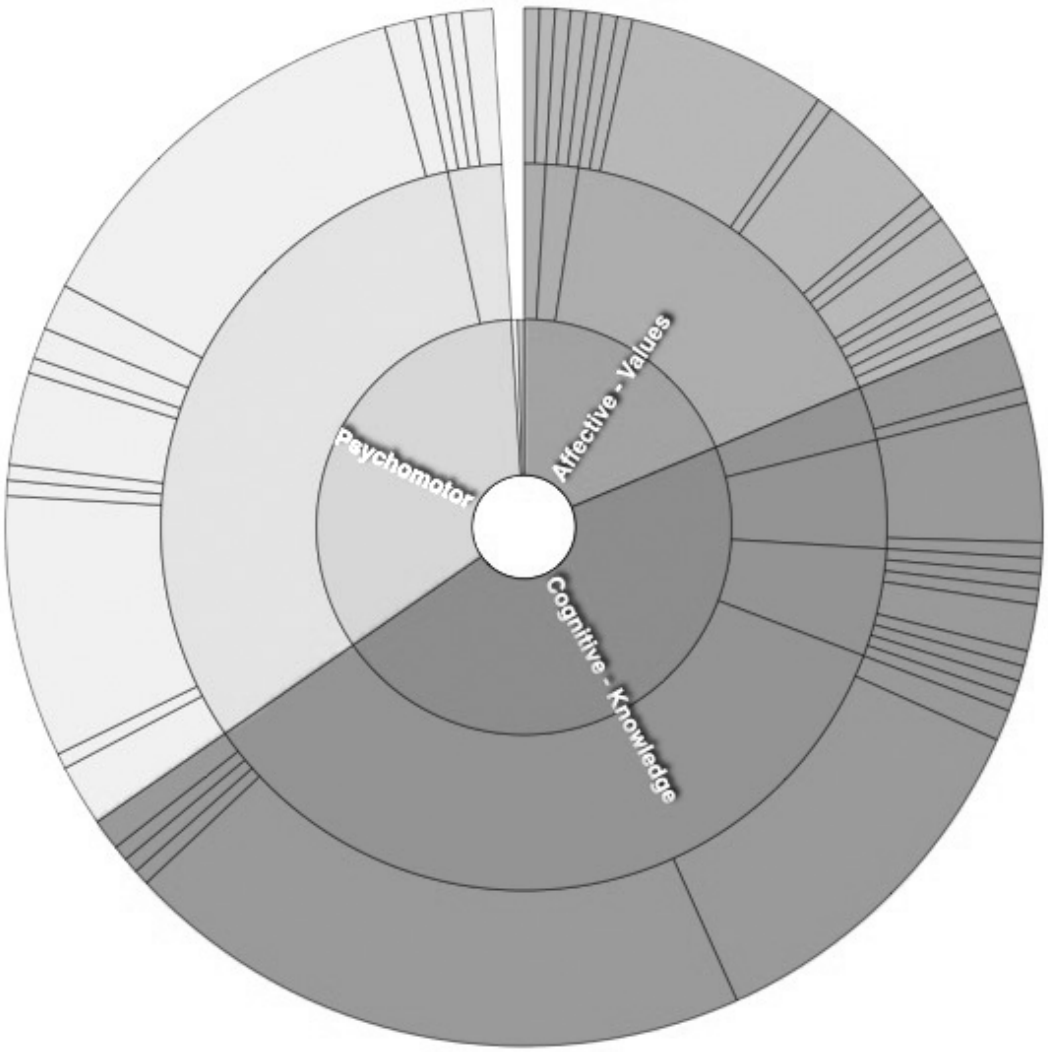


Figure 5. Conceptual overview of findings.

Bloom's *Revised* Taxonomy—Domains of Learning

Bloom's *Revised* Taxonomy (Anderson & Krathwohl, 2001) categorized student learning and performance into three domains of learning: cognitive (mental skills, thinking, and knowledge); psychomotor (manual or physical abilities, skills, or activities), and affective (values, attitudes, and growth in feelings or emotions).

Cognitive-Knowledge Domain Experiences

As shown in Figure 5, the systematic literature review showed that almost one-half of the findings from the studies reviewed (n = 29) focused on the cognitive-knowledge domain. In

other words, this domain had the most prominent number of nodes (n = 134). This domain's cognitive processes include categories of remembering, understanding, applying, analyzing, evaluating, or creating (Anderson et al., 2001). The cognitive domain falls into five knowledge dimensions or levels that include facts, concepts, processes, procedures, and metacognition (Clark & Chopeta, 2004; Clark & Mayer, 2008). Specifically, findings from this domain reflected positive and negative experiences related to the use of technology-mediated teaching and learning formats.

Positive educator cognitive-domain experiences. Positive experiences for educators include designing and promoting technology-mediated, social-learning experiences that assess the social aspect and competency development of student's knowledge, skills, and values (Hanbidge et al., 2018). For example, the ePortfolio assessment tool provided educators with an opportunity to create "meaning-making" experiences because it allowed educators to create student-learning communities that enhanced students' abilities to make connections through other teaching and learning experiences. Comparatively, Levine et al. (2013) and Wilson et al. (2013) discovered that virtual world technology was beneficial for educational purposes because it allowed educators to network with peers to further develop instructional strategies. Furthermore, Voith et al. (2018) stated that using specific programs and platforms enhanced educators' teaching experiences with the ability to create virtual-learning environments that further enhanced pedagogy intentions through more interactive and transparent instructional platforms.

Positive student cognitive-knowledge domain experiences. In relating positive experiences in the cognitive domain for students, Baker and Hitchcock (2017) stated that social media gave students the ability to engage course content in differentiated ways. Furthermore,

Baldridge et al. (2013) stated that social media and mobile learning had a positive effect on student engagement and information retention, in that their students demonstrated a better grasp of content than those instructed through traditional methods. Baldridge et al. (2013) discovered that student-learning outcomes using mobile and remote teaching strategies were higher than those for students taught through traditional instructional approaches. Thus, Bowers et al. (2012), Chonody (2018), Grant and Bolin (2016), and Hitchcock and Young (2016) reinforced the notion that the primary advantage of technology-informed pedagogy to students was its ability to facilitate critical-thinking skills, cultural competency, and new media literacies through mobile learning and social-media platforms in which students were already voluntarily engaged. As a form of constructivist pedagogy, ongoing peer interaction through these interactive platforms resulted in a deeper, enduring learning experiences (Goldingay et al., 2014; Peabody, 2013).

Negative educator cognitive-domain experiences. In contrast to educators' previous positive experiences with the use of technology, researchers indicated that educators' involvement with these platforms presented challenges. In fact, Rodriguez-Keys et al. (2013), found that educators who teach hybrid courses were challenged by the chronic interactive process of examining learning goals and objectives in hybrid courses, as well as designing interactive online activities while simultaneously cultivating student interest in the course. Another challenge presented by Wilke (2016) related to constructing online role-plays. Wilke (2016) concluded that it is important to understand that online teaching and learning may not be appropriate for every subject, educator, or student. Finally, educators struggled to organize their time spent planning, connecting and responding to students through online platforms, and creating learning communities. Consequently, Noble et al. (2013) related that educators struggled to explain, express, and create clear responses when communicating through technology.

Negative student cognitive-domain experiences. Whereas educators experienced unique challenges with hybrid teaching and learning formats, students likewise appeared to face their own set of challenges. Some students were impacted by limited access to technology, referred to as the digital divide (Holmes et al., 2015). Additionally, in the Cappiccie and Derosiers (2011) study, students expressed a need for extra support and coaching on the use of technology-mediated instruction to fully participate in a synchronous learning environment. Building on previous research, Pardasani et al. (2012), found students were challenged by distance classrooms, detracting them from their learning experiences. Finally, students had trouble taking online tests and synthesizing the application of ethical theory and abstract ethical concepts to practice (Marson et al., 2010; Wilson et al., 2013).

Psychomotor Domain

The second theme with the most prominent nodes was the psychomotor domain. This domain encompasses skills or abilities that include physical movement, coordination, motor-skills, speed, distance, procedures, executive functioning, manual tasks, and related performance behaviors such as perception-awareness, actions, responses, proficiency-mechanisms, overt and expert skills, adaption, and origination (Simpson, 1972). As shown in Figure 5, this systematic review showed that nearly one-third of the studies reviewed (n = 29) focused on the psychomotor domain, yielding the second most prominent number of nodes (n = 98). Specifically, findings from this domain reflected positive and negative skills and abilities on the use of technology by educators and students.

Positive educator psychomotor factors. Online educators apply pedagogical skills to construct, build, and develop creative learning experiences for students through specifically designed teaching and learning competencies that they must synthesize into online delivery

platforms. While using technology, educators perform a number of roles that include researcher, content facilitator, technologist, designer, manager, administrator, process facilitator, adviser/counselor, and assessor (Aguirre & Mitschke, 2011).

The systematic review identified a number of instructional strategies used to engage students in the teaching and learning process for class projects and instruction, such as social media, email, and online discussion boards in a web-based learning-management system (Aguirre & Mitschke, 2011). Although the intention was to use these technologies for instructional purposes, Baker and Hitchcock (2017) discovered that they simultaneously developed a professional learning network among educators that promoted lifelong learning and professional development.

When educators had technical skills, they were able to conduct proper planning for traditional and online teaching and learning environments. In fact, they were able to further enhance the teaching and learning exchange through recorded lectures and online tutorials, and integrate course content with technology (Baldridge et al., 2013; Lee et al., 2019). As the findings relate to educators' psychomotor domain, positive factors that coincide with the use of technology and associated platforms were further enhanced when educators had technical skills (Baldridge et al., 2013).

Another positive skills-ability factor was educators' ability to communicate and engage students in the creation and use of virtual formats (Deepak & Biggs, 2011). Similarly, Hanbidge et al. (2018) found that educators who use these platforms create optimum transformational learning experiences for students as a form of social pedagogy. For this reason, Douville (2013), emphasized that educators should have extensive abilities and skills related to teaching online

social-network-oriented courses because the use of these platforms can create small-group learning communities.

Positive student psychomotor factors. In Aguirre and Mitschke's (2011) research, emails and discussion boards allowed students to communicate with the instructor and peers in a positive culture. The use of these online technologies helped cultivate social abilities and skills that increased involvement in online communities. Deepak and Biggs (2011) indicated that the modality of intimate technology, in the form of selected YouTube clips, facilitated students' ability to attribute credibility to speakers'. Likewise, Lee (2014), indicated that virtual communities and avatars present a vital opportunity for students to experience different perspectives, which, in turn, can nurture culturally competent skill-building. Because virtual communities provide a useful and safe medium to integrate cultural competence, these online modalities are instrumental in cultivating abilities and skills for postgraduate practices with individuals from different cultures. Lee (2014) and Lee et al. (2019) went further, stating that online platforms provide students the ability to role-play in an environment designed to simulate real-world scenarios. Thus, students can practice responses in realistic settings without encountering potentially threatening and frightening real-world consequences. The strong sense of freedom offered in the virtual community also enhances interactions among students.

Negative educator psychomotor factors. Cappiccie & Desrosiers (2011) identified that the 4-hour length of time was a negative factor in teaching and learning sessions. As a result, they suggested that online sessions be limited to a 2-hour timeframe, allowing for copious content delivery before students become inattentive. According to Rodriguez-Keyes and Schneider (2013), to design effective on-line learning courses, educators need training in how to transition from a standard lecture-based approach to a more student-centered, technology-based

learning process. The challenge and the opportunity, then, is for educators to design course formats to meet the needs of traditional classroom learners. The last notable factor identified in the review was the importance of eliciting educators commitment in using and delivering distant instruction (Wilson et al., 2013).

Negative student psychomotor factors. Hanbidge et al. (2018) identified confusion about meeting course expectations successfully through online technologies such as ePortfolios, as a negative factor associated with the use of technology and online learning for students. To mediate technological barriers, students require sufficient examples and guidelines. Furthermore, other means by which to offer support, such as webinars, are quite valuable for students and educators.

Affective Domain

The affective theme had the least prominent nodes (n = 57) compared to the cognitive and psychomotor domains. As shown in Figure 5, nearly below one-fourth of the findings from the studies reviewed (n = 29) focused on the affective-values domain. This domain relates to how students process modes of education internally, through feelings, values, appreciation, motivations, and attitudes (Bloom et al., 1956; Krathwohl et al., 1973).

Positive affective educator aspects. There were no specific nodes related to positive affective educator aspects. However, values, motivations, and attitudes related to technology, social media, and hybrid course formats did emerge in teaching and learning environments that could be considered. For instance, many teachers just entering the field of education may have been trained in pedagogies and instructional strategies using technology, and this exposure to best practices could make their experiences with teaching through technology and hybrid-class

formats rewarding. Thus, their values, motivations, and attitudes related positively to this form of instruction.

Positive affective student aspects. Despite the absence of nodes associated with positive affective of educators, quite a few researchers described positive aspects for students. According to Kilpelainen, Paykkonen and & Sankala (2011) and Chonody (2018), students found hybrid learning opportunities very positive, related to opportunities to combine working life, domesticity, study, self-esteem, solidarity, and trust in students' self-directed learning.

Elliott et al. (2013), Lee (2014), and Goldingay et al. (2014) found further evidence of students' positive affective aspects related to the use of technology, social media, and hybrid course designs. Students' positive attitudes and experiences of being emotionally connected with their peers and educators increased through a combination of established video-based content delivery and ongoing formative peer- and self-assessment instructional activities. It appeared these instructional tools reduced isolation and alienation and, as a result, had a multipronged positive effect on the learning process and on the affective, empathic, and motivational aspects of the learning experience.

Self-efficacy is a primary component of the affective domain. Levine et al. (2013) and Reinsmith-Jones et al. (2015) found that students felt more confident in their abilities after participating in virtual role-play. Similarly, the beneficial nature of technology-enhanced learning experiences, further supported by students' reflections. Students developed greater empathy through online journaling exercises and viewed engaging in them as thought-provoking and emotional experiences (Levine et al., 2013; Reinsmith-Jones et al., 2015).

Negative affective educator aspects. Only one reference emerged on the negative affective domain in the research relating to educators. Rodriguez-Keyes and Schneider (2013)

discovered that some educators found the request for an increased instructor presence online to be negative. The negative emotions may relate to the values, motivations, and attitudes educators have about technology-mediated teaching and learning environments.

Negative affective student aspects. In the same way teachers found the demands of being online challenging to their values, Rodriguez-Keyes et al. (2013) found that the hybrid class format was not effective for every student, requiring a higher level of student activity and involvement. Therefore, coupled with the demand, students enrolled in hybrid courses must be relatively self-sufficient and have an inner drive to learn (Rodriguez-Keyes et al., 2013).

Conclusion

In conclusion, of the studies reviewed, (n = 13) were qualitative, (N = 7) were quantitative, (N = 9) were mixed methods. Findings from quantitative studies related largely to teaching and learning experiences in online and traditional settings that integrated technology with instruction or class participation. Thus, quantitative research outcomes related to teaching and learning experiences with knowledge application, performance, and active-learning outcomes. Findings from qualitative studies placed greater emphasis on educators' knowledge, skills, and abilities to integrate technologies to facilitate engaging learning activities designed to analyze and cultivate cognitive and affective-value experiences with students across online and traditional classroom settings. Similarly, findings from studies that used mixed-methods related more to aspects of cognitive, psychomotor, and affective domains, when using technology integration for students' tacit learning experiences with active learning, skill development, cultural sensitivity, thinking, perceptions, and learning outcomes in online and traditional formats.

Overall, findings from this systematic review and meta-synthesis showed that when integrating technology in the context of digital teaching and learning in social work education, educators should be cognizant of Bloom's *Revised* Taxonomies and the three Domains of Learning (cognitive, psychomotor, and affective), when applying the TPACK framework to technology integration. Educators should attend to Bloom's three Domains of Learning as they design course content, instruction, and activities when incorporating technology, social media, and teaching through online and traditional formats. The systematic review found that educators can facilitate effective learning experiences that increase metacognitive knowledge acquisition, psychomotor, and affective knowledge and mastery of student-learning outcomes.

These findings are in consonance with Atun and Usta (2019), Brown et al. (2011), and Aisyah (2013), who studied the effects of the TPACK framework on elementary and secondary students' learning outcomes and academic achievement and found significantly higher scores in academic achievement, problem-solving, and computational thinking skills. Translated this means, TPACK-framed lessons had a positive impact on teaching and learning outcomes. Atun and Usta (2019) concluded that selecting and using appropriate technology, suitable for relevant content areas, is a crucial strategy for teaching and learning. The researchers stated that Bloom's "higher order thinking skills are improved by technology-supported learning and academic achievement can be enhanced by using enriched activities in a technological environment" (Atun & Usta, 2019, p. 26).

Summary of Findings and Implications

Results related to the technology theme suggested a myriad of technology tools are useful for teaching and learning activities in social work education. Pedagogical results suggested that social work educators have extensive options about the types of technology-driven instructional

activities that can enhance teaching and learning experiences. The content domain results revealed six subject areas that integrated technology with subject-matter designed to introduce or advance students who benefit from learning outcomes.

Strengths and Limitations

Strengths

Strengths of this systematic review are the *a priori* theoretical deduction criteria applied to a mixed-methods triangulation approach of peer-reviewed studies that focused on technology, pedagogy, and curriculum content knowledge in the context of Bloom's *Revised* Taxonomy—Domains of Learning and the TPACK framework. Future research considerations include the researcher conducting an annual systematic literature review and meta-synthesis of current literature in the discipline to shed light on continuing advancements of technology integration in social work education to develop and propose an associated discipline-specific technology-integration model. Because this review defined prior inclusion and exclusion criteria, the peer-reviewed academic literature search provided guidance and included peer-reviewed studies that spoke to the topic of technology use in social work education.

Limitations

This study had several limitations that warrant discussion. First, this systematic review was devoted to identifying technology-integration activities by social work educators. Although Mishra and Koehler's (2006, 2008) seminal technology-integration knowledge framework was the inspiration for this review, it was beyond the scope to examine issues regarding the depth of social work educator's requisite knowledge because prior literature had not conducted empirical studies of social work educators' tacit technology-integration knowledge. Second, the review was biased in publication selection. This review had considerable variation in the nature of

empirical primary research and nonempirical articles, and did not include documents from various sources, including self-studies, interviews, and non-peer-reviewed articles (this review only used peer-reviewed articles). Third, the selected primary papers had numerous methodological shortcomings. Overall outcomes were limited, and the results were overwhelmingly student-centered. Fourth, the most persistent limitation was the lack of rigorous intervention studies. Fifth, with concern for potential bias, a single researcher conducted this review. However, DistillerAI (Evidence Partners, 2019), an artificial intelligence tool served as a second reviewer to audit the inclusion/exclusion of articles in this study to reduce the potential for bias. Nonetheless, the potential for human bias and error is quite possible in missing relevant studies or selecting key aspects of studies in the initial search, screening, inclusion/exclusion, and data-abstraction phases.

Implications for Future Research

In this systematic review, the researcher identified a plethora of 21st-century courses and teaching strategies that are quickly pushing traditional and online programs toward innovation. Educators must develop dual traditional and fully remote/online or hybrid settings, using a myriad of content-delivery activities and leveraging emerging digital technologies across graduate and undergraduate social work education programs. These methods may be performed synchronously, asynchronously, in laboratories, on social media, or in virtual-world formats. To date, scant attention has been paid to educator-centered technology integration teaching strategies in social work education programs. Consequently, these information gaps prevent drawing definite conclusions about the relative effectiveness of different pedagogical, technology-integration approaches.

Quality research, covering a broader range of factors and student-learning outcomes is needed to ensure appropriate technology integration of content by social work educators. These observations are best informed by Mishra and Koehler's (2006, 2008) TPACK model, a requisite knowledge framework for technology integration. The researcher used TPACK in this review as an inspiration to examine social work educators teaching and learning strategies. TPACK proposes cogent benefits for technology integration that are relevant to social work education. For instance, the TPACK model can assist educators in learning how to appropriately deliver content with emerging technology tools. Second, the TPACK framework provides educators, administrators, and programs with a common language when considering the best use of instructional technology tools for social work content delivery. Third, the TPACK model serves as a program evaluation framework, useful for examining the curriculum, competencies, practice behaviors, and student learning experiences. These findings suggest the TPACK framework can enhance and further develop best practices for educator-centered technology-integration methods.

At a national level, the CSWE and the NASW have not formally adopted a discipline-specific technology-integration framework beyond the 2017 *Standards for Technology in Social Work Practice* to inform technology-mediated teaching practices in social work education. The results of this review contribute to improving content delivery and pedagogical technology-integration practices. As evidenced by this review, the need is clear for further empirical research and rigorous studies on the TPACK model for its relevance in social work education. Future research of this type would illustrate how social work programs can adapt the curriculum, courses, lessons, and student activities for educators who choose to develop themselves professionally in TPACK's domains. The findings can significantly inform the landscape of

faculty-development programs. Provided that faculty are properly supported, and strategically trained, social work educators can further develop their technology-integrated delivery of content to enhance student-learning experiences. The TPACK framework can be considered a theoretical foundation to evaluate the integration of technology into pedagogical activities delivered by social work educators and new best practices may emerge.

Follow-Up Studies

Three possible research designs were considered for follow-up studies. The first research consideration relates to the annual revisiting of the systematic review and meta-synthesis of pedagogical technology integration within social work education. The next follow-up study consideration was a further investigation the TPACK framework within the Bloom's *Revised* Taxonomy – Cognitive Domain of remembering, understanding, applying, analyzing, evaluating, and creating in order to continue to add depth to the TPACK teaching and learning approach, specifically for the development of a conceptual, discipline-specific, technology integration model for social work education. Finally, the last follow-up study consideration related to changing the overarching theoretical framework from TPACK to Malcom Knowles' Andragogy Theory of Adult Learning, to continue to enhance the understanding of technology-mediated teaching and learning pedagogy and the praxis of social work education.

Introducing SW-TPACK

Norma R. Schropshire

University of St. Thomas

Doctor of Social Work Program

Author Note

Norma R. Schropshire, is a doctoral student in the Doctorate in Social Work Program at the School of Social Work, University of St. Thomas.

Correspondence concerning this paper should be addressed to Norma Schropshire, School of Social Work, Wayne State University, 5447 Woodward Ave, Detroit, MI 48202. Contact: ar3183@wayne.edu

Abstract

In 2019 this scholarly presentation was selected for submission by a rigorous peer-review process for the 29th annual conference of the Society for Information Technology and Teacher Education (SITE) held in Las Vegas, Nevada, March 18-22, 2019. SITE is a society of the Association for the Advancement of Computing in Education (AACE). The society represents individual teacher educators across disciplines, who create and disseminate knowledge about the use of information technology in teacher education and educators/staff development at the college level, across a global context (SITE, 2020). SITE is the only organization which has as its sole focus on the integration of instructional technologies into K-12 and college programs. "SITE promotes the development and dissemination of theoretical knowledge, conceptual research, and professional practice knowledge through conferences, books, projects, and the Journal of Technology and Teacher Education" (SITE, 2020). This work was presented as a virtual working paper accompanied by a twenty-five-minute presentation (Schropshire, 2019).

Purpose

This presentation addressed the requisite knowledge and ethical factors required for social work educators to appropriately integrate and teach with technology in distance and hybrid postsecondary social work programs.

Significance

Social work education does not utilize a educator-centered knowledge framework to address educator's preparation to teach effectively with technology, particularly for distance programs. This study presents the first (ethical, technological, social work) design-based framework to address educators-centered pedagogical readiness for teaching with technology in distance education social work programs. The proposed framework offers a new solution to the

body of social work knowledge regarding teaching with technology, particularly to address a research gap regarding the pedagogical preparation of educators in distance education programs. The narrow aim is to guide social work education programs related to educator's readiness to teach with technology in online programs, in terms of preparation, competence, ethics and participation. The significant of this presentation are to address a research gap in social work education regarding the preparation of social work educators teaching in online programs. This presentation represents preliminary content for a subsequent conceptual manuscript that applies Mishra and Koehler's TPACK (2006; 2008) educational technology integration model to the *Standards for Technology in Social Work Practice* (NASW, 2017) to serve as a banded construct that offers a educators centered technology integration framework to specifically designed with social work education in mind. This conference offered an opportunity to develop and expand the framework for the benefit of educator's development in social work education. The concept provides an opportunity to explore the knowledge gap regarding proper educator's development for online social work education. The framework offers an opportunity to expand educator's knowledge, inform new pedagogy, and enhance curriculum development related to online teaching in social work education.

Learning Objective

Participants will evaluate the benefits of utilizing a discipline-specific ethical-technology integration model for educator's readiness in social work education.

Introducing SW-TPACK

Norma R. Schropshire
University of St. Thomas
United States of America
Schr5798@stthomas.edu

Abstract: This work-in-progress presentation addresses a research gap of the prerequisite pedagogical knowledge required of social work educators to competently prepare to teach with technology in distance education programs. Situated in Mishra and Koehler's (2006) Technological Pedagogical Content Knowledge (TPACK) framework, banded with Section four of the 2017 *Standards for Technology in Social Work Practice*, this session introduces a proposed conceptual model designed for effective teaching with technology in social work education, the Social Work - Technological Pedagogical and Content Knowledge (SW-TPACK) model. This session is the first discipline-specific presentation of TPACK applied to the social work content area.

Keywords: Technological Pedagogical Content Knowledge, readiness, innovation, technology integration, social work education

Overview

This work-in-progress introduces a conceptual readiness framework to prepare social work educators to competently integrate technology in postsecondary programs. This conceptual presentation addresses a research gap of the prerequisite knowledge required of social work educators to competently prepare to integrate technology in distance and hybrid pedagogical practices. In this presentation, educator readiness encompasses knowledge, preparedness, competence, aptitude, fitness, skills, abilities, behaviors, ethics, values, motivators, and participation. The Social Work - Technological Pedagogical and Content Knowledge (SW-TPACK) model bands together a seminal technology integration framework

with an ethical, social work education lens to lead to effective online teaching.

Learning Objective

Participants will evaluate the benefits of utilizing a discipline-specific ethical-technology integration model for educator's readiness in social work education.

Introduction

This work-in-progress addresses an urgent need for competent educators to teach with technology in distance social work programs. The urgent problem is the lack of adequate readiness training to prepare social work educators to teach effectively with innovative digital technologies in online classrooms. At present, postsecondary social work education does not utilize a educators-centered knowledge framework to address the preparation required to teach effectively with technology, particularly for distance programs. Significantly, this study proposes a new conceptual expansion of Mishra and Koehler's (2006) existing Technological Pedagogical Content Knowledge (TPACK) framework (see Figure G1). In this concept, Mishra and Koehler's TPACK design is banded with an ethical, social work technology-integration lens, for a Social Work - Technological Pedagogical Content Knowledge (SW-TPACK) model (see Figure I1). The SW-TPACK framework offers an integrated instructional-technology competence lens paired with ethical standards geared to offer a pedagogical readiness approach to integrating technology in distance social work programs.

Purpose

This work in progress addresses the prerequisite knowledge and ethical factors required for social work educators to competently prepare to integrate technology in distance and hybrid postsecondary social work programs.

Significance

This presentation presents the first TPACK grounded framework to address educators-centered pedagogical readiness for integrating technology in online social work programs. The proposed framework offers a new solution to the body of social work knowledge regarding teaching with technology. The SW-TPACK model addresses a research gap in the pedagogical preparation of social work educators in distance education programs. The narrow aim is to guide postsecondary social work programs, administrators and educators related to educator's readiness to integrate and deliver emerging technologies in online programs in terms of preparation, fitness, competence, ethics, values and educators' participation.

Background

In 2015, The United States Department of Education reported that 5,954,121 students enrolled in distance education courses at degree-granting postsecondary institutions. According to the Annual Report of the Council on Social Work Education (CSWE, 2017), enrollment in online, distance, hybrid and traditional social work programs showed a substantial increase in the past five years. Baccalaureate enrollment increased by 5.7% with 63,529 students enrolled in 534 Bachelor of Social Work (BSW) programs. Graduate programs increased by 19.8 % with 64,486 students enrolled in 277 Master of Social Work (MSW) programs. Enrollment in Ph.D. programs increased by 13.6 % with 2,325 students. Practice doctorate programs increased by 129% with 611 students enrolled. In 2016, the CSWE reported that 48,393 students graduated from BSW, MSW, Ph.D. and DSW programs (Council on Social Work Education, 2017). One reason for the steady enrollment increase is the global demand for web-based education across sectors and disciplines, including social

work.

The CSWE does not maintain a separate list of online courses or programs in their database, because “accreditation standards and review criteria” are the same for graduate and undergraduate social work programs (Council on Social Work Education, 2017). As a result, the guidelines and criteria for online social work programs and courses are unclear. However, as distance education increases in popularity, necessity and accessibility, so do the number of competent educators prepared to teach virtually in order to meet the demand. In many cases, unprepared, unseasoned and novice educators are assigned courses they did not develop or design (Pina & Bohn, 2015). The CSWE offers regional accreditation standards for graduate level teaching qualifications. However, the CSWE’s standards primarily address an individual instructor’s academic degree level rather than pedagogical qualifications or skills (Council on Social Work Education, 2018).

Problem

In some cases, online social work programs expect educators to independently and masterfully build high- quality, learner-centered experiences without receiving prior fundamental training, support, or mentoring to harness the required skills needed for instruction. Batts, Pagliari, Mallett, & McFadden (2010) found that 58% ofcommunity college educators in varied disciplines denied receiving off-campus training to teach online undergraduate courses, with 59% reportedly receiving on-campus training. The critical foundation of educator’s technology-integration readiness is necessary to contribute to the success and sustainability of online programs across all disciplines including social work. Readiness training supports educators in building a repertoire of competence, knowledge and pedagogical skills to deliver and effectively teach online. The traditional model of classroom

teaching significantly differs from online teaching, especially for social work education. In this proposal, TPACK focuses pedagogical technology integration. The use of a SW-TPACK model can aid the social work discipline in effectively preparing educators for teaching with technology at the college level.

Theoretical Framework

Punya and Mishra's (2006) Technological Pedagogical Content Knowledge (TPACK) framework stems from the instructional technology discipline. The TPACK theory illustrates the intersection between pedagogy, content, knowledge, and technology and explains the set of required knowledge educators need to effectively integrate technology into content delivery and teaching practices (Mishra & Koehler, 2006). While TPACK is the preeminent model for this proposal, ethical standards from the social work discipline are banded with TPACK as a secondary framework. Equally important, the 2017 *Standards for Technology in Social Work Practice* were collaboratively released by social work's four governing agencies, National Association of Social Workers (NASW), Association of Social Work Boards (ASWB), Council on Social Work Education (CSWE), and the Clinical Social Work Association (CSWA). The learning and practice standards provide generic advice to addresses "benefits, challenges, risks," and a framework for the ethical and appropriate integration of technology with social work education and practice (NASW, ASWB, CSWE, CSWA, 2017).

Social work educators are encouraged to follow Section four in the *Standards* for guidance on ethical technology integration regarding the design and delivery of social work education and supervision (NASW, ASWB, CSWE, CSWA, 2017).

Conceptual Framework

The TPACK model serves as the prevailing framework in addition to advice from Section four on *Social Work Education and Supervision* from the 2017 *Standards for Technology in Social Work Practice.* The combined frameworks aid in drawing together the types of qualities, behaviors, values, prerequisite knowledge, skills, fitness and abilities required for educators to appropriately integrate technology in the design and delivery of online social work programs. Together the *Standards* and TPACK frameworks guide an examination of both the extent to which these elements are addressed in existing programs and are based on research. The SW-TPACK model combines required ethical standards regarding digital technology integration in social work education with Mishra and Koehler's (2006) seminal TPACK framework. Mishra and Koehler's (2006) TPACK framework illustrates seven types of knowledge that social work educators can develop to teach effectively with technology. The second-banded, rectangular image illustrates twelve of the Section Four standards from the *Standards for Technology in Social Work Practice* (NASW, ASWB, CSWE, CSWA, 2017).

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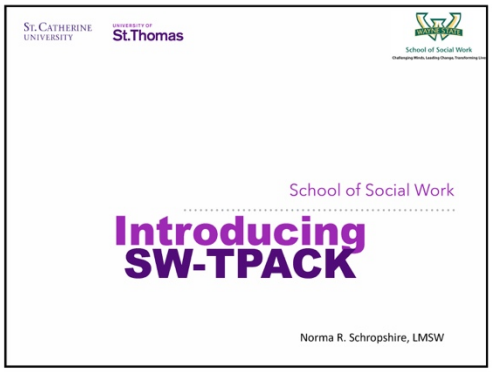
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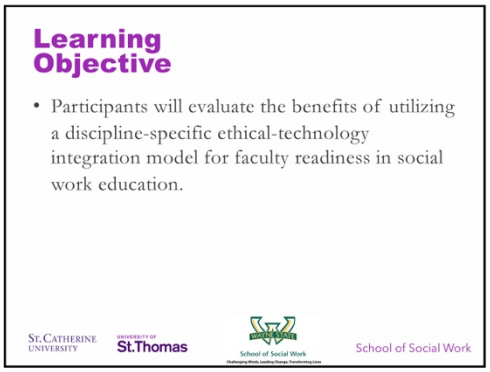
SW-TPACK
Norma R. Schropshire, LMSW

1


Learning Objective
• Participants will evaluate the benefits of utilizing a discipline-specific ethical-technology integration model for faculty readiness in social work education.
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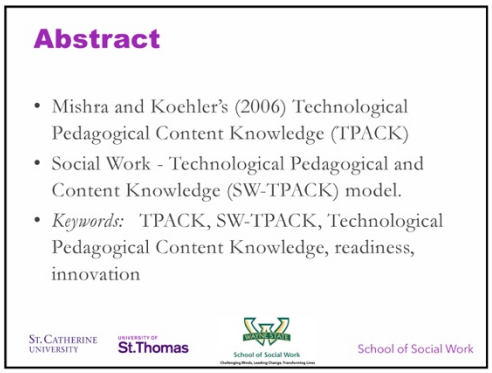
Abstract
• Mishra and Koehler's (2006) Technological Pedagogical Content Knowledge (TPACK)
• Social Work - Technological Pedagogical and Content Knowledge (SW-TPACK) model.
• *Keywords:* TPACK, SW-TPACK, Technological Pedagogical Content Knowledge, readiness, innovation
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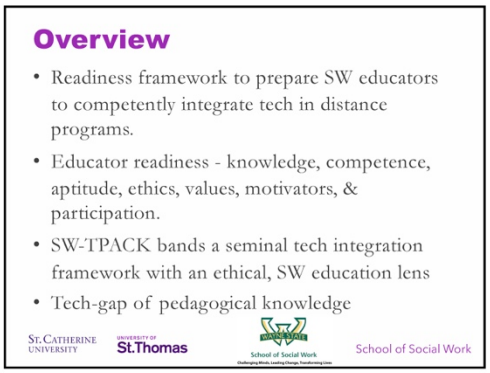
3


Overview
• Readiness framework to prepare SW educators to competently integrate tech in distance programs.
• Educator readiness - knowledge, competence, aptitude, ethics, values, motivators, & participation.
• SW-TPACK bands a seminal tech integration framework with an ethical, SW education lens
• Tech-gap of pedagogical knowledge
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Introduction

- Urgent need for competent faculty
- Problem - lack of adequate readiness training to prepare SW faculty to integrate tech.
- No present educator-centered ed-tech SW framework
- Proposed expansion of Mishra & Koehler's (2006) existing TPACK banded with an ethical, SW technology-integration lens
- SW-TPACK offers an integrated instructional-technology competence lens paired with ethical standards geared to offer a pedagogical readiness approach to integrating technology in distance SW programs.

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Background

- 2015, USDE - 5,954,121 students enrolled in distance courses
- Enrollment in online, distance, hybrid and traditional SW programs - substantial increase in 5 years.
- 5.7% with 63,530 students enrolled in 534 (BSW) programs.
- 19.8 % with 64,486 students enrolled in 277 (MSW) programs.

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Background continued

- 13.6 % with 2,325 PhD students.
- 130% with 611 students enrolled in practice doctorate programs.
- 48,393 students graduated from BSW, MSW, Ph.D. & DSW programs (CSWE, 2017).
- Global demand for web-based education across sectors & disciplines, including social work.

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7

Background continued

- CSWE (2017) does not maintain a separate list of online programs
- Guidelines are unclear.
- DE increases - prepared faculty prepared to meet demand
- Novices assigned courses they did not develop or design (Pina & Bohn, 2015).
- CSWE - regional accreditation standards for graduate teaching qualifications.
- CSWE's standards only address instructor's academic degree rather than pedagogical qualifications (CSWE, 2018).

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Purpose

- Addresses the knowledge and ethical factors required for social work educators to competently prepare to integrate technology in distance and hybrid postsecondary social work programs.

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Significance

- 1st discipline-specific TPACK grounded framework
- SW-TPACK addresses a gap in the preparation of SW educators in distance programs.
- Aim - guide SW programs, administrators & educators - faculty readiness to integrate and deliver emerging technologies - online
- Preparation, fitness, competence, ethics, values and faculty participation.

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Problem

- Programs expect instructors to independently build learner-centered experiences without prior training.
- 58% of faculty denied receiving off-campus training
- 59% reported on-campus training.
- Necessary for sustainability of online programs including social work.
- Supports repertoire of competence, knowledge & pedagogical skills to deliver & effectively teach online.
- Traditional teaching significantly differs from online teaching
- TPACK focuses solely on pedagogy.
- SW-TPACK aids the SW discipline in effectively preparing educators

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Theoretical Framework

- TPACK stems from instructional technology, illustrates pedagogy, content, knowledge, & technology & explains the set of required knowledge needed to integrate tech into content delivery & teaching (Mishra & Koehler, 2006).
- 2017 *Standards for Technology in Social Work Practice*
  - National Association of Social Workers (NASW)
  - Association of Social Work Boards (ASWB)
  - Council on Social Work Education (CSWE)
  - Clinical Social Work Association (CSWA).
  - "benefits, challenges, risks" & a framework for the ethical & appropriate integration of technology with social work education & practice (NASW, ASWB, CSWE, CSWA, 2017).

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Conceptual Framework

- TPACK - prevailing framework
- Section 4 *Social Work Education and Supervision* - 2017 *Standards*
- Combined frameworks draw qualities, behaviors, values, knowledge, skills, fitness & abilities required to prepare faculty to teach online with technology.
- *Standards* & TPACK guide an examination of the extent to which these elements are addressed in existing programs & are based on empirical research.

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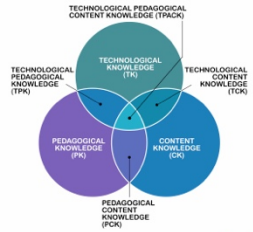
13

SW-TPACK model



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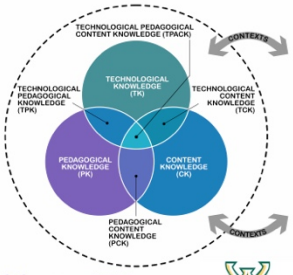
14

SW-TPACK model



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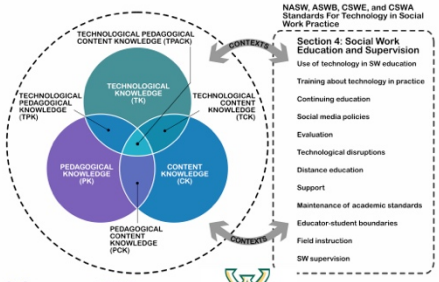
SW-TPACK model



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Paper ID: 54497
Title: "Introducing SW-TPACK"
Accepted as: Virtual Paper

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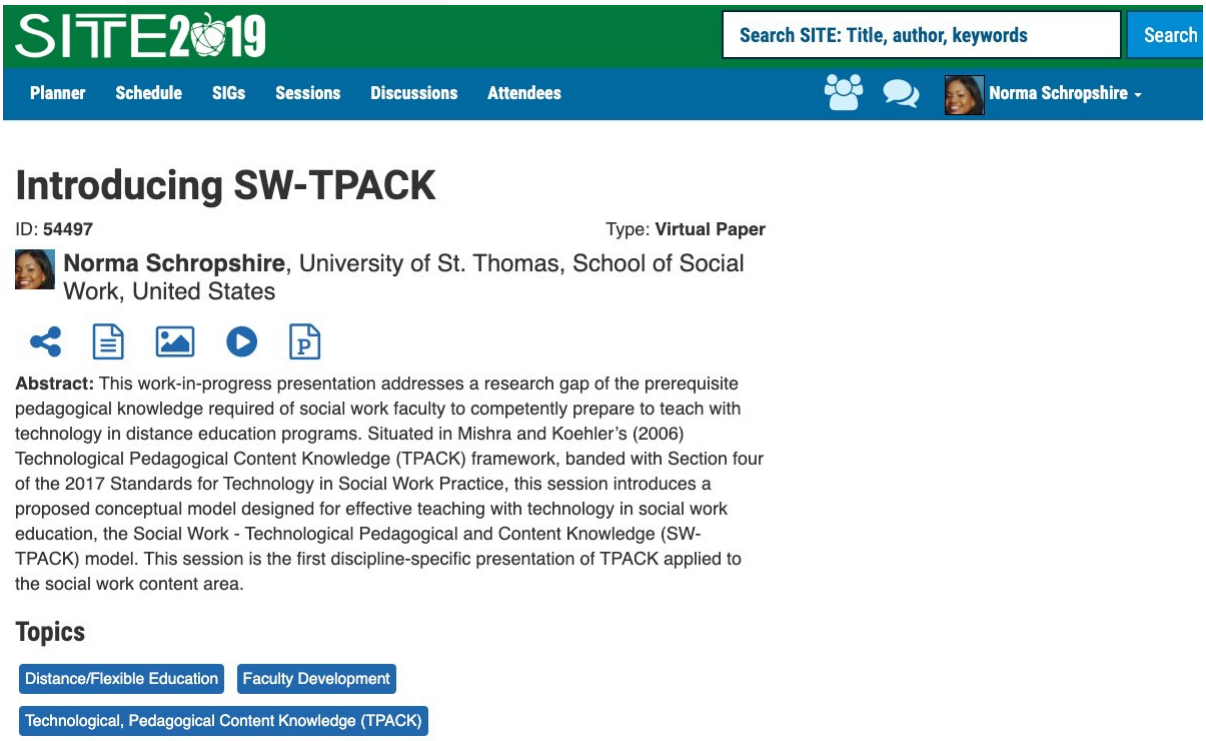

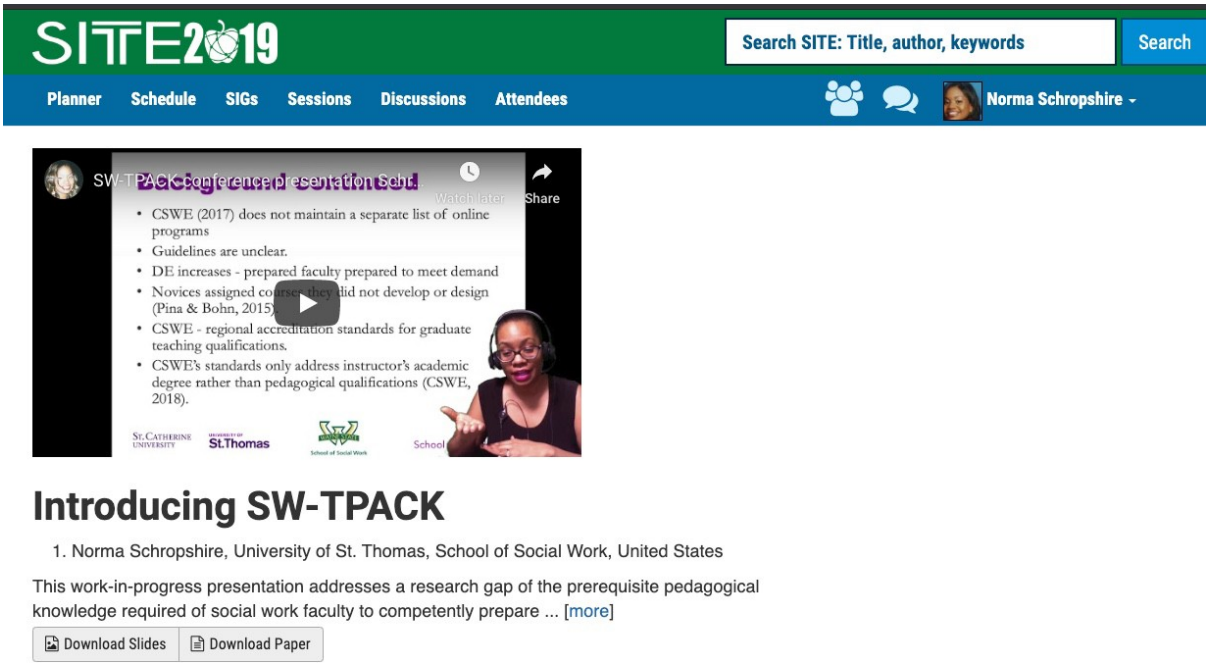

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Appendix A: NASW, ASWB, CSWE, And CSWA Standards for Technology in Social Work Practice. Section Four: Social Word Education and Supervision

Table A1

NASW, ASWB, CSWE, and CSWA Standards for Technology in Social Work Practice. Section four: Social Work Education and Supervision

Section 4 Standards	Advice / Guidance
4.01: Use of Technology in Social Work Education	Social workers who use technology to design and deliver education and training shall develop competence in the ethical use of the technology in a manner appropriate for the particular context.
4.02: Training Social Workers about the Use of Technology in Practice	Social workers who provide education to students and practitioners concerning the use of technology in social work practice shall provide them with knowledge about the ethical use of technology, including potential benefits and risks.
4.03 Continuing Education	Social work educators who use technology in their teaching and instruct students on the use of technology in social work practice shall examine and keep current with relevant emerging knowledge.
4.04: Social Media Policies	When using online social media for educational purposes, social work educators shall provide students with social media policies to provide them with guidance about ethical considerations.
4.05 Evaluation	When evaluating students on their use of technology in social work practice, social work educators shall provide clear guidance on professional expectations and how online tests, discussions, or other assignments will be graded.
4.06 Technological Disruptions	Social work educators shall provide students with information about how to manage technological problems that may be caused by loss of power, viruses, hardware failures, lost or stolen devices, or other issues that may disrupt the educational process.
4.07 Distance Education	When teaching social work practitioners or students in remote locations, social work educators shall ensure that they have sufficient understanding of the cultural, social, and legal contexts of the other locations where the practitioners or students are located.
4.08 Support	Social work educators who use technology shall ensure that students have sufficient access to technological support to assist with technological questions or problems that may arise during the educational process.
4.09: Maintenance of Academic Standards	When social work educators use technology to facilitate assignments or tests, they shall take appropriate measures to promote academic standards related to honesty, integrity, freedom of expression, and respect for the dignity and worth of all people.
4.10: Educator-Student Boundaries	Social work educators who use technology shall take precautions to ensure maintenance of appropriate educator– student boundaries.
4.11: Field Instruction	Social workers who provide field instruction to students shall address the use of technology in organizational settings.
4.12: Social Work Supervision	Social workers who use technology to provide supervision shall ensure that they are able to assess students' and supervisees' learning and professional competence.

Note. Adapted from *Standards for Technology in Social Work Practice,* by National Association of Social Workers, Association of Social Work Boards, Council on Social Work Education, & Clinical Social Work Association, 2017, NASW Press, pp. 44–53. The NASW, ASWB, CSWE, and CSWA provides interpretations for each standard in this table: https://www.socialworkers.org/includes/newIncludes/homepage/PRA-BRO-33617.TechStandards_FINAL_POSTING.pdf.

Appendix B: TPACK Domains

Table B1

TPACK Domains

Name	Description
Technological, pedagogical, and content knowledge (TPACK)	TPACK- is the knowledge intersection between technology, pedagogy, and content and a form of wisdom that master instructors draw upon to deliver instruction (Koehler & Mishra, 2006, 2008).
Technological Content Knowledge (TCK)	TCK- recognizes the methods, influences, constraints and affordances by which content and technology interact (Koehler & Mishra, 2006, 2008).
Technological pedagogical knowledge (TPK)	TPK- is the insight that when specific technologies are applied teaching practices and learning experiences are modified (Koehler & Mishra, 2006, 2008).
Pedagogical content knowledge (PCK)	PCK- "is the teaching of specific content, covers the core business of teaching, learning, curriculum, assessment, and reporting, such as the conditions that promote learning and the links among curriculum, assessment, and pedagogy" (Koehler & Mishra, 2008, p. 14).
Technology knowledge (T or TK)	TK- is an understanding that technology is in a state of constant change and this knowledge is a potential mastery or fluency in information technology (Koehler & Mishra, 2008).
Pedagogical knowledge (P or PK)	PK- is a deep expertise in learning and instructional methods and comprises academic goals, principles, and intentions (Koehler & Mishra, 2008).
Content knowledge (C or CK)	CK- is the exact subject matter delivered by a teacher (Koehler & Mishra, 2006, 2008).

Note. Adapted from "Technological Pedagogical Content Knowledge: A framework for Teacher Knowledge," by P. Mishra and M. J. Koehler, 2006, *Teachers College Record, 108*(6), 1017–1054. (https://doi.org/10.1111/j.1467-9620.2006.00684), and "Introducing Technological Pedagogical Content Knowledge" [Conference session], by P. Mishra and M. J. Koehler, 2008, paper presented at the Annual Meeting of the American Educational Research Association, New York, NY, United States.

Appendix C: Shulman's Model of Pedagogical Reasoning and Action

Table C1

Shulman's Model of Pedagogical Reasoning and Action

Process	Description
1: Comprehension for Understanding	Teacher's explore ideas, information, curriculum structure, subject matter, student's background knowledge, learning objectives and purposes for the lesson
2: Transformation of Ideas	Teachers examine the collective student group to select, and prepare the specific materials and procedures for instruction and determine if these preparations require further adaptation to learners' individual or group characteristics
3: Instruction	Teachers examine their own actual teaching activities and methods to ensure that these acts are purposeful and intentional in the teaching and learning process
4: Evaluation	Throughout the entire lesson the teacher assesses student understanding or misunderstanding and self-adjusts one's teaching performance and reevaluates all assessment activities accordingly
5: Reflection	In light of the results of the student's and teacher's/self-performance the teacher critically reconstructs, deconstructs, analyzes, and reviews anything that needs to be modified which leads to New Comprehension.
6: New Comprehension	The teacher recognizes what was learned by the teacher and students; this reflection develops deeper understandings of needs, content and purposes for instruction

Note. Shulman's six processes represent elements that teachers observe in themselves and students. The model is an unsequenced, interactive cycle of six nonlinear processes to develop a tacit knowledge base for good teaching that offers an opportunity to unpack the complicated and perplexing nature of praxis (Wilson, Shulman, & Richert, 1987; Shulman, 1987a; Finger & Finger, 2013; Harris et al., 2017).