KNOWLEDGE TRANSLATION REGARDING THE DO-LIVE-WELL FRAMEWORK

Knowledge translation: The Development, Evaluation, and Follow-up of Online and In-person Do-Live-Well Workshops for Occupational Therapists

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Lay Abstract

The purpose of this dissertation is to present the processes of how knowledge about the Do Live Well (DLW) framework, a Canadian health promotion approach, has been disseminated and applied in Canadian occupational therapy practice. This dissertation presented three major contributions: (a) It describes the detailed processes of developing theory- and evidence-based educational workshops regarding the DLW framework for Canadian occupational therapists (OTs) that could be replicable in continuing education for health care professionals. (b) It compares the effectiveness of an online DLW workshop compared to a traditional in-person DLW workshop for Canadian OTs and explores learners' experiences in participating in the two different educational workshops. (c) It offers an understanding of workshop participants' experiences and perspectives on the use of the DLW framework in practice after they completed the workshops.

Abstract

This dissertation presents knowledge translation processes regarding the Do-Live-Well (DLW) framework for Canadian occupational therapists (OTs) and consists of five chapters. The first chapter explains why this DLW educational research was needed and provides a description of the theoretical frameworks used in the DLW educational project, including knowledge translation, program evaluation, and adult education frameworks.

In chapter 2, I described the process of developing the equivalent online and in-person educational workshops that were evidence- and theory-based. Three phases were undertaken to develop the DLW workshops: (1) understand DLW training needs, (2) develop educational content and apply the problem-based learning approach, and (3) conduct a usability test of the online workshop website. The findings from each phase were used in DLW online and in-person workshops.

In chapter 3, findings of a mixed-methods study are presented. The study was designed to (1) compare the effectiveness of online education with in-person learning regarding the DLW framework for Canadian OTs and (2) further explore workshop participants' experience in both learning formats. While there were no statistically significant differences in knowledge gained, the in-person group was more satisfied with their learning. Participants in both groups valued the importance of personal interactions in learning; the online learners said online learning did not provide the same quality of in-person interactions that in-person education provided.

In chapter 4, I explored workshop participants' experiences of using the DLW framework in practice three months after DLW workshops by asking about benefits, facilitators, and barriers of using the DLW framework in practice. Participants valued the importance of the DLW

framework, but there were challenges of using the DLW framework, associated with structural, organizational, provider, innovation, and patient factors.

In chapter 5, the contributions of the DLW educational project are discussed by providing insights related to knowledge translation using Knowledge-To-Action cycle.

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List of Abbreviations

DLW: Do-Live-Well

DOI: Diffusion of Innovation

KTA: Knowledge-To-Action

OT: Occupational Therapist

PBL: Problem-based Learning

Declaration of Academic Achievement

This sandwich thesis consists of three manuscripts: one, chapter two, was accepted in the *Journal of Occupational Therapy Education*, and the other two, chapters three and four, were prepared for submission to the *Journal of Medical Internet Research* and *Canadian Journal of Occupational Therapy*.

I am the first author of all these manuscripts and played a key role in conducting literature reviews, selecting appropriate methodology, applying theories and models, collecting and analyzing the data, and preparing the manuscript submission.

Authors of the first article (accepted by the *Journal of Occupational Therapy Education*) will retain copyright of the article, and my coauthors have granted irrevocable, nonexclusive license to McMaster University and Library and Archives Canada to reproduce this material as a part of the thesis. Coauthors of the remaining articles have also granted permission to reproduce the articles as part of the thesis. Upon acceptance of the articles for publication, full copyright will be obtained from the respective journals. Copyright has not yet been assigned.

1. **Kim, S., Gewurtz, R., Bayer, I., Larivière, N., & Letts., L. (In-press). The Development of Theory- and Evidence-based Educational Workshops for Occupational Therapists. *Journal of Occupational Therapy Education.***

   All coauthors were engaged in the establishment of theoretical and methodological conceptualization of developing educational DLW online and in-person workshops for Canadian occupational therapists (OTs). Both online and in-person DLW workshops were delivered in February 2020. This manuscript, describing the detailed process of developing the DLW workshops, was accepted by the *Journal of Occupational Therapy*

Education. This manuscript was previously presented at Norman Education Research Day 2021 in June.

2. **Kim, S., Bayer, I., Gewurtz, R., Larivière, N., & Letts, L. (In preparation). Comparing Online and In-person Educational Workshops for Canadian Occupational Therapists and Understanding Their Learning Experiences**

   All coauthors provided valuable, constructive feedback on interpretating the results and incorporating quantitative and qualitative results to meet the purpose of using a mixed-methods research design. This manuscript was prepared for submission to the *Journal of Medical Internet Research (JMIR)* and previously presented at the virtual 25th annual International Association of Medical Educators (IAMSE) meeting, where its abstract was nominated for the outstanding poster presentation award.

3. **Kim, S., Larivière, N., Bayer, I., Gewurtz, R., & Letts, L. (In preparation) Occupational therapists' application of the Do-Live-Well framework: A Canadian health promotion approach**

   All coauthors offered revisions on this manuscript and provided constructive feedback on organizing the results using a framework. This manuscript was prepared for submission to the *Journal of Canadian Occupational Therapy*.

Chapter 1. Introduction

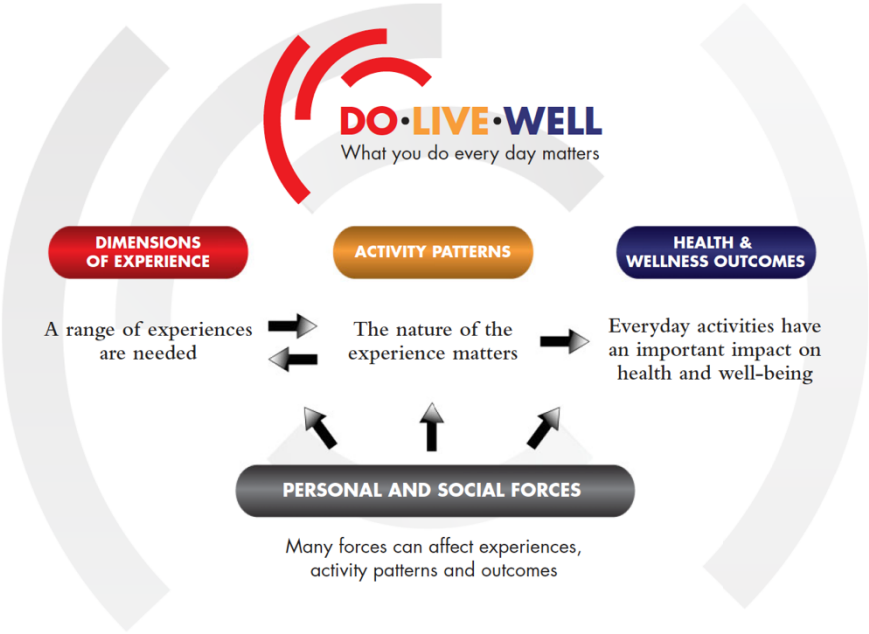
The Do-Live-Well framework, an Occupation-Focused Health Promotion Approach

Humans are occupational beings, and individuals by nature want to participate in meaningful occupations (Wilcock, 1995). Occupations are what people do every day to take care of themselves, enjoy their lives, and contribute to society (Townsend & Polatajko, 2007). Occupational therapists (OTs) support people's health and well-being by encouraging them to engage in different occupations that are meaningful to them (Townsend & Polatajko, 2007). Although occupation is a core concept in occupational therapy, it has not been consistently used in current occupational therapy interventions for many reasons, including environmental, therapist, and client barriers (Lloyd et al., 2019). A structured framework may allow OTs to better understand the importance of occupations for people's health and to improve OTs' clinical reasoning for making decisions and recommendations (Duncan, 2020).

The Do-Live-Well (DLW) framework is a health promotion approach that was developed by Canadian OTs. The key idea of the framework is to encourage individuals to participate in a range of occupations that provide opportunities for diverse experiences that support their health and wellbeing. The DLW framework consists of four main constructs: (a) dimensions of experience, (b) activity patterns, (c) personal and social forces, and (d) health and wellness outcomes (Figure 1).

Figure 1

The Four Key Constructs of the DLW Framework



Note. The publisher provides non-exclusive permission for re-use of the figure of the original article (Moll et al., 2015) in dissertations/thesis without the need for a formal request.

For the first construct, dimensions of experience, a key message is that participating in a range of different types of occupations can result in positive health outcomes (Moll et al., 2015). There are eight different dimensions of experiences that can be linked to positive health outcomes: (a) activating your body, mind, and senses; (b) connecting with others; (c) contributing to community and society; (d) taking care of yourself; (e) building security/prosperity; (f) developing and expressing identity; (g) developing capabilities and potential; and (h) experiencing pleasure and joy (Moll et al., 2015). Participating in occupations that provide opportunities for a range of experiences can contribute to one's health and wellness. There is a body of evidence that supports the links between each dimension of experience and

positive health outcomes. For example, participating in occupations that can strengthen the community, such as volunteering, is tied to low mortality and depression rates, greater functional ability, and higher self-reported health and well-being in older adult populations (Gottlieb & Gillespie, 2008; Grimm et al., 2007; Onyx & Warburton, 2003).

The second construct of the DLW framework is activity patterns that can affect a person's health and wellness (Moll et al., 2015). There are five activity patterns: (a) engagement, (b) meaning, (c) balance, (d) control/choice, and (e) routine (Moll et al., 2015). Activity patterns are on a continuum — optimal activity patterns may lead to health benefits, whereas too much or too little of a particular activity pattern are linked to potential health risks. For example, if a person is optimally engaged in an activity, they can experience flow, "the experience of complete absorption in the present moment" (Nakamura & Csikszentmihalyi, 2009, p. 195). However, if a person is overly engaged in an activity, they can become fatigued and burnt out (Gallagher, 2013). Furthermore, lack of engagement in an activity can result in poor mental health and social problems (Williams & Murray, 2013).

The third construct is personal and social forces. Personal forces (e.g., age, educational level, socioeconomic status) and social forces (e.g., accessibility, cost, supportive environment) can affect one's occupational engagement (Moll et al., 2015). For example, the degree of difficulty experienced during an occupation often increases with age; On the other hand, declines in cognitive and physical functions are negatively associated with occupational engagement (Kolanowski et al., 2006). In terms of social forces, poverty and personal support allowed individuals with schizophrenia to better engage in their daily activities (Chugg & Craik, 2002).

The last construct is health and wellness outcomes resulting from participating in a wide range of occupations with an optimal activity pattern and sufficient personal and social support

(Moll et al., 2015). In the DLW framework, a broad scope of health and wellness is emphasized that includes physical and mental health as well as social, emotional, and spiritual health and wellness (Moll et al., 2015). Detailed descriptions of the framework have been previously published by Gewurtz et al. (2016b) and Moll et al. (2015).

Each of these four constructs is further delineated and summarized in Table 1. A key message of this framework is that if people participate in diverse activities with an optimal activity pattern, and their personal and social supports are sufficient, they can achieve a wide scope of positive health and wellness outcomes (Moll et al., 2015).

Table 1

Components of the DLW Framework's Four Key Constructs

Construct	Components
Dimensions of experience	Activating your body, mind, and senses
	Connecting with others
	Contributing to community and society
	Taking care of yourself
	Building security/prosperity
	Developing and expressing identity
	Developing capabilities and potential
	Experiencing pleasure and joy
Activity patterns	Engagement
	Meaning
	Balance
	Control/choice
	Routine
Personal and social forces	Personal: age, gender, ethnicity, health, etc.
	Social: accessibility, affordability, restrictive rules, etc.
Health and wellness outcomes	Physical, mental, social, emotional, and spiritual health and wellness

Do-Live-Well Educational Workshop: From Knowledge to Action

The DLW framework may support OTs' occupation-focused practices, and there has been growing interest from OTs to learn more. However, the DLW framework has not been widely adopted in OT practice mainly because of a lack of opportunity to disseminate knowledge about it. Thus, the DLW team thought the best way to disseminate this knowledge widely would be through educational workshops developed for Canadian OTs. Although in-person workshops were initially considered, the idea of developing an online workshop was of interest because it might allow broader knowledge dissemination across Canada and internationally.

Online learning has become popular, however, its effectiveness for OT education has not been well studied. In a systematic literature review of the effectiveness of online learning for health care professionals (Vaona et al., 2018), online education did not differ from traditional education in terms of imparting knowledge. However, among the studies included in the review, only one included OTs as participants, along with other health care professionals, and the proportion of OTs in that one study among other health care professionals was low (8%–11%). Thus, the evidence of the effectiveness of online versus traditional in-person learning for OTs has not yet been sufficiently established.

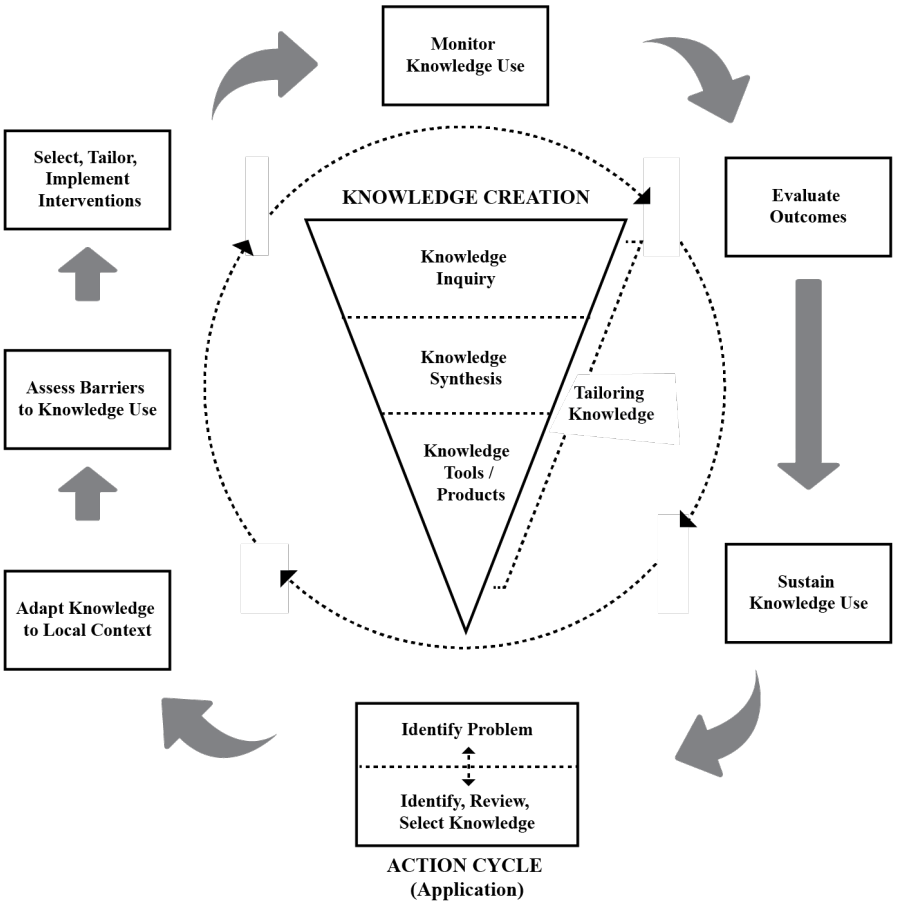
As a result, with the help of the DLW team, I decided to create in-person and online workshops consisting of the same content and incorporating the same learning and teaching principles and evaluate the effectiveness of an online workshop compared to an in-person workshop. In addition to quantitative comparisons, I believed it would be valuable to explore learners' experiences in both learning formats to better explain the quantitative findings and understand what may be missing in the data. The ultimate goal of a DLW educational workshop is to facilitate learners' adoption of the DLW framework in practice. Thus, we also conducted a

qualitative study to find out OTs' perspectives on the experiences of using the DLW framework in practice after they participated in the workshops. Understanding what aspects of the DLW framework worked well and what did not work well, and what were some challenges and successes of its application, would allow the DLW team to think about ways to provide more practical DLW education in the future.

Theories play a key role in guiding processes of knowledge translation (Colquhoun et al., 2010). The overall process of this educational project was guided by the knowledge-to-action (KTA) process (Graham et al., 2006), suggesting the completion of the process of KTA for continuing education for health professionals. The KTA process consists of two main concepts: knowledge creation and action cycle (Graham et al.,2006). The following seven components of KTA's action cycle (Figure 2) were used to guide the process of this DLW educational research: (a) identify the problem that needs to be addressed and identify, review, and select the knowledge; (b) adapt the identified knowledge to the local context; (c) assess barriers to using the knowledge; (d) select, tailor, and implement interventions; (e) monitor knowledge use; (f) evaluate outcomes of using the knowledge; and (g) sustain ongoing knowledge use (Graham et al., 2006). For example, by following the first step, the identification of the problem that needs to be addressed, I discuss why the DLW workshops were required, providing a rationale for this educational research project. To assess barriers to the use of knowledge of DLW, we interviewed Canadian OTs who applied the DLW framework.

Figure 2

The Process of the KTA Framework



Note. The publisher approved the re-use of this figure of the original article (Graham et al., 2006).

Theoretical Underpinnings of the DLW Workshops

The DLW online and in-person workshops have the same content and incorporate the same learning and teaching principles, a problem-based learning (PBL) approach.

Problem-Based Learning

Problem-based learning (PBL) is a learner-centred approach defined as "the learning which results from the process of working toward the understanding of, or resolution of a problem" (Barrows & Tamblyn, 1980, p. 18). Since the late 1960s, it has been widely used in different disciplines. Its underlying principles are "partnership, honesty, openness, respect, and trust" (Baptiste, 2003, p. 18). In PBL, the role of the learners is emphasized; they are asked to actively participate in their learning by identifying their needs for learning (Baptiste, 2003; Fadilla et al., 2021). The PBL approach facilitates learners' motivation to work with peers to solve presented problems, improving their communication and teamwork skills (Alrahlah, 2016).

In an effort to explain the relationship between teaching and learning theories and the PBL approach in health professional education, Gewurtz et al. (2016a) articulated eight key principles of the PBL approach: (a) adult learners are independent and self-directed, (b) adult learners are goal oriented and internally motivated, (c) learning is most effective when it is applicable to practice, (d) cognitive processes support learning (e) learning is active and requires active engagement, (f) interaction between learners supports learning, (g) activation of prior knowledge and experience supports learning, and (h) elaboration and reflection supports learning (p. 59). These principles can guide the development of a PBL educational environment for OTs. In occupational therapy education, PBL has improved learners' clinical reasoning skills (Scaffa & Wooster, 2004), and student OTs have reported that PBL was helpful in developing their information management and communications skills and clinical reasoning (Hammel et al., 1999). These benefits were also helpful for OTs in practice to communicate with team members and solve problems (Reeves et al., 2004). Although a PBL approach is widely used in some in-person occupational therapy education (Baptiste, 2003), the incorporation of a PBL approach in

online occupational therapy learning has not been well described. Thus, as part of the DLW education project, in Chapter 2, I describe how the eight key PBL principles articulated by Gewurtz et al. (2016a) were applied in the development of both online and in-person workshops.

Knowledge-to-Action Framework

As introduced earlier, this DLW educational project was guided by the action cycles of the KTA framework. On top of the action cycle, knowledge creation presents the process of how knowledge is developed through knowledge inquiry, synthesis, and products (Graham et al.,2006). This knowledge creation phase was used to highlight the need for the DLW framework for OTs, and how the DLW framework was developed in the following chapters of this thesis dissertation.

Adoption of the DLW Framework

Training programs should be evaluated to (1) "improve the program", (2) "maximize [the] transfer of learning to behavio[u]r and subsequent organizational results", and (3) "demonstrate the value of training to the organization" (Kirkpatrick & Kirkpatrick, 2016, p.23). The concepts of the training evaluation model by Kirkpatrick and Kirkpatrick (2016) were used to evaluate the outcomes of DLW educational workshops. In addition, as the key purpose of providing a DLW educational workshop was to promote OTs' use of this occupation-focused DLW framework in practice, workshop participants' adoption of the DLW framework was evaluated using a diffusion of innovation model (Rogers, 2003).

Kirkpatrick's Model of Training Evaluation

There are four levels of the training evaluation model, including reaction, learning, behaviour, results (Kirkpatrick & Kirkpatrick, 2016). The first level, reaction, is to evaluate the degree to which training participants respond positively to training; the second level, learning, is

to assess the degree to which learners obtain new knowledge and skills; the third level, behaviour, is to evaluate the degree to which training participants use new knowledge in practice; the fourth level, results, is to measure the outcomes of using new knowledge (Kirkpatrick & Kirkpatrick, 2016). The first three levels of the training evaluation: reaction, learning, and behaviour, were incorporated into the workshop evaluation questionnaires as knowledge test, factors influencing adoption of the DLW framework, and satisfaction with the workshop.

Diffusion of Innovation

Diffusion of innovation (DOI) is a model explaining how new knowledge (innovation) is disseminated over time in a certain social group within a communication channel (Rogers, 2003). DOI includes four main constructs that assess an innovation and its potential for the uptake within a target population: (a) attributes of the innovation, (b) communication channels, (c) time, and (d) the social system (Rogers, 2003).

There are five attributes of an innovation: its relative advantages, compatibility, complexity, trialability, and observability. This innovation construct explains that potential users are more likely to adopt new knowledge when they perceive the new knowledge as beneficial, fitting well with their existing beliefs and values, and easy to understand and use and when they can expect a visible outcome of its usage (Rogers, 2003).

Communication channels explain how knowledge is disseminated from one person to another. A communication channel transmits new knowledge between one who is knowledgeable and experienced in its use and one who is not yet. According to this model the degree to which two people who interact have similar beliefs and personal backgrounds, such as education and

socioeconomical status, communication between them regarding new knowledge is more likely to be effective (Rogers, 2003).

The next construct, time, explains the process of deciding how to use new knowledge. An individual is first exposed to new knowledge, is persuaded to use it, decides whether to use it or not, implements it, and confirms continuous use of the new knowledge over time. Time also explains how individuals adopt new knowledge at different rates as innovators, early adopters, early majorities, late majorities, and laggards (Rogers, 2003).

Finally, the social system construct explains how diffusion of new knowledge occurs within a certain social system and, thus, how the structure of the social system affects the adoption of the new knowledge. In other words, if an individual's social system is more welcoming of new knowledge, the person is more likely to adopt it (Rogers, 2003).

The DOI framework highlights the most opportune time for workshop evaluations by considering the time construct of DOI described in Chapter 3. In addition, the constructs of attributes of innovation, communication channels, and the social system are applied in the development of a questionnaire to ensure a comprehensive evaluation of the potential factors for adoption of the DLW framework among OTs who participated in the workshops.

Thesis Chapters and KTA's Action Cycle

Considering the importance of transferring the knowledge regarding the DLW framework to OTs, this DLW educational project consists of three components (Chapter 2-4). In the following chapters, I (1) describe the process of the DLW online and in-person workshop development (Chapter 2), (2) report the effectiveness of the online workshop compared to the in-person workshop and describe OTs' experience and perspectives on their participation in both learning formats (Chapter 3), (3) explore how OTs have applied the DLW framework in their

practice after the workshops (Chapter 4), and finally (4) provide comprehensive discussions regarding the DLW educational project and recommendations for future direction (Chapter 5).

As stated earlier, this DLW educational research project followed the key components of KTA's action cycle (Graham et al., 2006). The focus of each chapter based on KTA's action cycle is as follows:

Chapter 2: Identify Problems and Adapt Knowledge to Local Context; Assess Barriers to Knowledge Use; and Select, tailor, and implement interventions

Chapter 3: Evaluate outcomes of using the knowledge; and Sustain ongoing knowledge use.

Chapter 4: Monitor knowledge use

Chapter 5: Sustain knowledge use

Together, the chapters of this thesis provide evidence and insights related to the application of theories to development, evaluation, and application of knowledge into practice.

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Chapter 2: Kim, S., Gewurtz, R., Bayer, I., Larivière, N., & Letts., L. (In-press). The Development of Theory- and Evidence-based Educational Workshops for Occupational Therapists. *Journal of Occupational Therapy Education.*

Preface

This first manuscript in this dissertation, titled "The Development of Theory- and Evidence-based Educational Workshops for Occupational Therapists," was accepted in the *Journal of Occupational Therapy Education*. The inception of this study came from the training needs for the DLW framework from OTs across the world. Online education can be a great method to disseminate knowledge worldwide, but its effectiveness in occupational therapy education has not been well studied. In addition, there was a lack of descriptions on how health professionals can develop equivalent online and in-person educational interventions. Thus, as a preimplementation study of comparing the effectiveness of online and in-person education for OTs, in the following chapter, I describe the detailed process of developing equivalent online and in-person DLW workshops for Canadian OTs. The research team applied three phases to develop evidence- and theory-based educational workshops: (a) understanding the training needs for the DLW framework, (b) developing workshop content and applying the problem-based learning (PBL) approach, and (c) conducting a usability test of the online DLW workshop website. The detailed descriptions on the development of online and in-person education may support occupational therapy educators' reflections on the key processes to adopt when developing curriculum.

The Development of Theory- and Evidence-based Educational Workshops for Occupational Therapists

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Keywords: Continuing education, professional development, Online, Education, Health promotion

Abstract

The Do-Live-Well (DLW) framework is a health promotion approach developed by Canadian occupational therapists (OTs). As the DLW framework is relatively new, it has not been widely adopted by OTs. In order to facilitate OTs to incorporate the DLW concepts in their practice, there should be more learning opportunities, and online and in-person workshops have been chosen to be a specific interest of this study. The purpose of this project was to develop theory- and evidence-based in-person and online educational workshops for OTs as a pre-implementation study to increase the knowledge of the DLW framework among OTs. In order to develop workshops, we incorporated three different phases. First, we interviewed four OTs who have been applying the DLW concepts in practice to understand their use of the framework and training needs, and it has been identified that OTs experienced difficulty applying the DLW concepts in practice and wanted opportunities to learn more about the DLW framework. Next, problem-based learning (PBL) guided the workshop development, and the same eight key PBL principles were incorporated in both the in-person and online workshops. Finally, four different experts completed usability testing of the online workshop website to improve its learning environment. The online workshop website was improved based on the feedback from the usability testers. The next step of this research will be to compare effectiveness of in-person and online platforms for workshop delivery. The detailed development process described in this project may assist occupational therapy educators in developing theory- and evidence-based educational delivery methods.

Introduction

The use of theoretical frameworks is integral to occupational therapy (OT) practice. Frameworks make explicit assumptions about humans and occupations and guide professional and clinical reasoning (Duncan, 2011). The Do-Live-Well (DLW) framework is a recent evidence-informed health promotion approach (Gewurtz et al., 2016b; Moll et al., 2015) developed by Canadian occupational therapists (OTs) to encourage persons of all ages to think about their time use and to enhance their opportunities to engage in activity patterns that can promote health and well-being. This framework has four main sections: dimensions of experience, activity patterns, forces influencing activity engagement, and health and well-being outcomes (Moll et al., 2015). According to the framework, individuals of all ages and any health conditions should have opportunities to engage in daily activities that allow them to experience a range of dimensions and optimal patterns of activity while having access to sufficient personal and social support, resulting in a wide range of positive health and well-being outcomes. (Moll et al., 2015). This framework allows OTs to develop tools that promote health and wellness through meaningful occupational engagement and articulate their unique and valuable perspective (Moll et al., 2015). To date, there has been interest in the DLW framework among Canadian and international OTs, but this relatively new framework has not been widely adopted into OT practice, due in part to challenges of translating knowledge into practice.

The DLW framework was developed in Canada. Previous knowledge dissemination activities, focused on spreading knowledge of this framework, included publishing details in scientific journals and launching the DLW website (www.dolivewell.ca). In-person educational opportunities were also made available, such as lectures and workshops. There was a workshop

in Quebec that provided DLW content in French to OTs in various practice settings. However, the educational opportunities in English were primarily for clinicians in mental health practice; training has been limited for OTs in different practice settings. In addition, the previous training sessions in English have been conducted in specific regions of Canada, primarily urban centers in Alberta and Ontario. Thus, there is a need for more educational opportunities targeted to OTs in various practice settings and in different countries and geographic regions.

Online education may provide opportunities for OTs to learn more about the DLW framework, which may enhance their application of this new framework in practice. Online continuing education is increasingly being accessed by health professionals around the world (Institute of Medicine, 2010). This delivery modality has advantages such as easy access to materials, a customized learning pace, use of multimedia, and interaction among learners in different geographic regions (Greenhalgh, 2001; Harden, 2005; Ruiz et al., 2006; Stark et al., 2021; Wong et al., 2010). Furthermore, Chick (2020) demonstrated online learning to be an optimal way to maintain education while ensuring the safety of learners and educators during the COVID-19 pandemic. In OT education, a single group study evaluating the effectiveness of online continuing education reported improved self-efficacy of OTs in school-based practice (Suman & Provident, 2018). Little is known, however, about the effectiveness of online education for OTs compared with traditional in-person education (Hollis & Madill, 2006). Recent systematic reviews (Richmond et al., 2017; Vaona et al., 2018) of the effects of online programs for health professionals suggests little or no difference between e-learning and traditional learning in terms of health professionals' behavior, skills, or knowledge. In these reviews (Richmond et al., 2017; Vaona et al., 2018), only one randomized controlled trial (RCT)

(Maloney et al., 2011) included OTs as participants, along with other health care professionals. This RCT study showed no difference in attendance, adherence, satisfaction, knowledge, and self-reported change in the practices between online and in-person fall-prevention exercise education groups (Maloney et al., 2011). Since only 8%–11% of participants in this study were OTs (Maloney et al., 2011), the results might be difficult to generalize to the broader OT community. In addition, this systematic review focused mainly on the difference in duration of delivery between online education and in-person education when providing detailed explanations of interventions. Lack of detailed descriptions of the learning and teaching approaches as well as whether the online and in-person education involved equivalence in delivering knowledge also makes generalization of the findings from this review difficult.

In OT education, problem-based learning (PBL) is a widely accepted educational approach and considered effective in improving learners' clinical reasoning skills (Scaffa & Wooster, 2004). The PBL approach encourages learners to draw on their existing knowledge and make it the foundation for acquiring new information associated with a problem (Colliver, 2000; Dochy et al., 2003). PBL environments encourage learners to engage deeply in the learning process rather than memorize information to take a test (Baptiste, 2003; Newble & Clarke, 1986; Vu et al., 1998). Problem-based learning has been mainly applied in in-person learning environments (Barrett & Moore, 2010), and there has been no research on how the PBL principles can be equally applied to online education for OTs. Thus, information is lacking about the development of a PBL-inspired online educational format for OTs and the evaluation of its effectiveness compared to the traditional in-person PBL environment.

Given the lack of evidence on the effectiveness of online education for OTs, despite its potential benefits, there is a need to compare the effectiveness of in-person and online workshops to disseminate knowledge of the DLW framework to OTs. In this paper, the authors describe a pre-implementation study that was conducted to develop the educational interventions to increase the knowledge of the DLW framework among OTs. The objective of this study was to develop evidence-based online (asynchronous) and in-person (synchronous) DLW workshops for OTs that contained the same content and applied the same PBL approaches by incorporating three methods: (1) understanding experience of using the DLW framework, (2) incorporating PBL principles, and (3) conducting usability testing for an online educational platform. The overarching research question was, "How do the three methods support the development of educational workshops for OTs regarding the DLW framework?"

Workshop Development Processes and Outcomes

The researchers developed the educational interventions in three sequential phases, with the findings from each informing the development of the DLW for both in-person and online workshops. This project did not require ethics approval because it was considered program development.

Phase 1. Understanding Current Users' Perspective and Experience of Using DLW Methodology

In order to understand OTs' perspectives and experiences of using the DLW framework in practice, we aimed to interview Canadian OTs who were using the DLW framework from August to October 2017, with the intent that this would help provide guidance on what is

important to include in a workshop focused on the DLW framework. Canadian OTs known by the research team to be applying the DLW concepts in their practices were invited to participate if they could undertake an interview conducted in English. The respondents chose the interview method (telephone, video call, or in person). A preliminary semi-structured interview guide was developed and revised after discussion with the DLW research team and an OT expert. The semi-structured interview guide included the following topics: interviewee background, description of the DLW application, and need for training. The first author conducted all the interviews, including one by telephone, two by video call using Skype, and one in person. The data were coded related to the research question in a systematic fashion across the entire dataset by the first author. Next, codes were collated into potential initial themes, which were subsequently defined. Then, members of the research team (SK, LL, RG, NL) reviewed the clarity of the final themes to ensure the research question was answered.

Outcomes

The participants were four Canadian OTs who worked in different practice settings; two were from primary care settings, and the other two were from mental health care settings. Their working experience ranged from 3 to 22 years. Their client populations varied based on their different practice settings, including individuals with mental health issues and chronic conditions.

Identified Themes. Three main themes were identified based upon the perceptions and experiences related to OTs' use of the DLW framework.

DLW Helped Clients Think About Their Daily Activities. Participants acknowledged the use of the DLW framework in their practices; the framework aligned well with OT because both emphasize the importance of occupations as a means of promoting health and well-being. The DLW framework provided their clients with a different point of view in relation to daily activities and health by allowing them to think about how they spend their time to improve wellness. One participant stated that the DLW framework was especially useful when her clients did not know what they want to work on or when they were overly engaged in activities; her clients often had difficulty reflecting upon what activity changes they would like to bring to their current routine. The DLW framework guided conversations about the types of activities that can support a client's health and well-being, which assisted in client-directed goal setting.

OTs Struggled with the Application of the DLW Framework. Most participants used the DLW website to explain concepts to their clients. Although the participants agreed that the DLW framework was useful in their practices, they thought the framework was abstract and the website self-directed, so it would be challenging for laypersons to read, think about, and implement the concepts. Some of the participants found that it was not easy for clinicians to put the theoretical ideas into practice. Thus, they wanted worksheets or tools developed specifically for the DLW framework.

***OTs Needed DLW Training*.** OTs have made many requests for DLW training opportunities, and the participants also emphasized the importance of such opportunities. They felt that examples of how and when to use the DLW framework with different client groups would be beneficial for clinicians. They also stated that the dimensions of experience and activity patterns sections should receive the most attention during the workshop because these sections are relatively new aspects of OT practice, compared with the other two sections, Health and Wellness Outcomes and Forces Influencing Activity Engagement.

Phase 2. Development of the DLW Workshop Content and Application of Key PBL Principles

Methodology

The content for the educational interventions (in-person and online workshops) was developed through an iterative process. The first author drafted the initial workshop content by incorporating resources previously used and developed by the DLW team as well as findings from Phase 1. The draft was then shared with the remaining DLW research team. In Phase 1, it was identified that OTs wanted to know more about the application of the DLW framework. Therefore, the DLW team decided to use case scenarios in different practice settings so that the acquired knowledge regarding the DLW framework could be applied by OTs in their own settings.

To create a more effective learning environment, eight key principles of PBL (Gewurtz et al., 2016a) were used throughout the content development process of the in-person and online DLW workshops: self-directedness, internal motivation, prior knowledge and experience, applicability

in practice, cognitive process, active learning, interaction between learners, and elaboration and reflection. The content developed for the educational interventions, including PowerPoint slides, presentation scripts, case scenario videos, and discussion questions, was the same for both the online and in-person workshops.

Outcomes

Through the iterative process and findings from the qualitative interviews, content for both in-person and online workshops was developed with the following key elements.

Overall Structure. The content of both in-person and online workshops consisted of four main sections, each covering the key sections of the DLW framework: (1) dimensions of experience, (2) activity patterns, (3) the notion of forces influencing activity engagement, and (4) health and well-being outcomes (Moll et al., 2015).

To ensure consistency between in-person and online workshops, PowerPoint slides and written scripts were prepared. Five case scenarios related to different OT practice settings, selected by the DLW team, were developed for the workshops in the form of video recordings of interviews with five different clients: a recently retired man, a woman with lower back pain, a woman with rheumatoid arthritis, a child with coordination problems, and a paramedic with mental health issues. The details of how the in-person and online workshops are organized are outlined in Table 1.

Table 1

Information About the Workshop Sessions

Introduction of instructors, participants, and learning and teaching approach	
Session 1	Introduction of case scenarios
	Health promotion & health and well-being outcomes
Session 2	Introduction of the DLW framework
	Dimensions of activity
Session 3	Activity patterns
	Social and personal support
Session 4	Application of the DLW framework
	Large group case scenario discussions
Wrap up (Q&A / Reflection), Post-evaluation	

Program Length. The in-person workshop was designed as a 1-day, 8-hour workshop, while the online workshop was designed to take a total of approximately 8 hours for four modules/sessions, with initial plans to make the workshop available for 4 weeks.

Planned Delivery Format. Content delivery was planned through the use of PowerPoint slides, and the written script used to record the content for the online workshop. The online workshop is delivered through an online website that is available to workshop participants for a specified duration, and participants are allowed to access the content at their own pace, moving through and between sections as desired. Participants in both in-person and online workshops receive a workbook consisting of a workshop schedule, a written summary of case scenarios, a DLW figure, and tools specifically related to the DLW concepts.

Members of the DLW team agreed to facilitate small and large group discussions during both in-person and online workshops. Discussion topics were generated for use after each session, and opportunities designed for participants to share their opinions freely during discussions. Participants in the online group are asked to leave their answers in the discussion forum on the website and freely leave comments on other learners' responses. Before they learn about the details of the DLW framework, the researchers ask the participants in both workshops to rank their top 3 preferred case scenarios. Then, each participant is assigned to a small group in which members discuss the application questions specific to the assigned case scenario. The large group discussion allows applicants to learn about the cases of other groups and understand how the different groups have applied the DLW concepts to the cases.

Finally, the researchers ask participants in each workshop to reflect on their learning processes and answer the following questions during a large group discussion: (1) what did you learn from the workshop? and (2) did you achieve your learning goal?

Delivery: Application of the PBL Principles. The manner in which PBL principles have been applied in both the online and in-person workshop are presented in this section.

(1) Self-directedness: Adult learners are independent and take responsibility for their learning; they are the experts on their own learning needs. The DLW team applied this principle by encouraging learners to set personalized learning goals and identify their ideal learning strategies and resources. Additionally, the choice of a case scenario from a possible five was included to provide a tailored workshop experience that can actively engage learners.

(2) ***Internal motivation:*** This principle asserts that adult learners engage in learning when they perceive the need to learn. Learners in the DLW workshop were asked to develop learning objectives based on their learning needs prior to the workshop.

(3) ***Prior knowledge and experience:*** According to this principle, learning occurs as learners build upon prior knowledge and experience, which helps learners reflect on beliefs and values and also broadens their perspectives. In the DLW workshops, the DLW team prompted learners to use their existing knowledge to solve problems. For example, in small group discussions, participants were asked to reflect on their usual practice and then how that may change as they consider application of the DLW framework.

(4) ***Applicability in practice:*** Adult learners improve their comprehension when the new knowledge is applicable in practice. Thus, the DLW team provided participants with an opportunity to select the scenarios relevant to their practices. Later in the workshop, learners were encouraged to reflect on their use of the DLW framework using the Do-Live-Well Training Toolbox, which asks how to integrate DLW principles into their practice.

(5) ***Cognitive process:*** Learning is facilitated through cognitive demands and requires different strategies based on learners' knowledge level. Thus, the DLW team examined participants' knowledge of the DLW framework before the workshop through a questionnaire and make adjustments to the content.

(6) Active learning: Learning is active, and facilitators encourage learners to actively participate in their learning process. Following this principle, the DLW team provided five video case scenarios and ask questions regarding the application of the DLW framework. In the process of answering the questions, the participants used their existing knowledge and problem-solving skills to actively engage with other workshop participants.

(7) Interaction among learners: Learning is promoted through sharing knowledge with others, understanding others' perspectives, and examining one's own perspectives accordingly. In the DLW workshop, the facilitator highlighted the importance of mutual respect and cooperation among participants and asked them to share their perspectives on the DLW framework by actively participating in discussions, both in small and large groups. Especially in small groups of four to five people, learners interacted more actively with others.

(8) Elaboration and reflection: The learning process is solidified by allowing learners to analyze, synthesize, and integrate new knowledge. By the time the workshop was over, the DLW team provided participants with an opportunity to reflect on what they learned from the DLW workshop. The DLW team asked if they were able to achieve their learning goals and prompted discussions on the use of the DLW concepts in their own practice.

Phase 3. Usability Test of the DLW Online Educational Platform

Methodology

After developing the content for the educational interventions, Articulate 360 software was used to create e-learning modules for the online workshop and WordPress was used to develop an educational platform to host the online workshop content and activities. A usability test of the online platform was conducted to identify any potential difficulties with using the online learning option (Zaharias & Poylymenakou, 2009). The researchers aimed to include individuals in four different expert areas: a graphic designer, a web developer, a university instructor, and an OT as a learner. Each individual was asked to focus on aspects of usability most aligned with their expertise. Based upon the results of the usability test, revisions were made to the workshop materials and online workshop website to improve the DLW online learning environment before launching it for OTs.

Outcome

The online learning website to deliver the content of the online workshop was designed, developed and evaluated for its usability. One person in each expert area, a total of four, agreed to participate in the usability testing. They freely accessed the website and completed the usability testing questionnaire (Zaharias & Poylymenakou, 2009); the times to complete the test ranged from 1 to 2 weeks. They all had more than 4 years of work experience in their fields.

Quantitative Results. Table 2 summarizes the scores and percentages from questions on the usability testing questionnaire that employed the 5-point Likert scale. As each individual completed only a predetermined selection of components of the questionnaire, there were

differences in total raw scores between participants. There were a few questions that the participants did not score for undetermined reasons; in that situation, the average score for the category was entered to address missing data. The overall usability score for the online workshop website ranged from 85% - 92%.

Table 2

Summary of Quantitative Results From Usability Testing Questionnaire

	Graphic designer	Web developer	University instructor	OT learner
Navigation [30]	26	28	29	26
Accessibility [30]		26		26
Consistency [15]	14		12	15
Visual design [20]	18		15	18
Interactivity [25]	21	23	24	19
Content and resources [50]			43	43
Media use [15]	13		11	12
Learnability [20]				16
Learning strategy [20]			20	17
Feedback [10]			N/A	8
Summed score / total score	92 / 100	77 / 85	154 / 175	200/ 235
Overall percentage (%)	92%	91%	88%	85%

Qualitative Results. Through the direct content analysis of free-text answers, the following three key categories of responses were identified.

It Was Easy to Access and Navigate the Website. The participants appreciated that the access mechanism of the website was well designed so that learners could easily explore the website and control their learning activities. When they re-entered the website, the menu before they left appeared immediately, and the menus they previously completed had changed color, so they did not have to remember how far they had progressed in the workshop. Both the web developer and learner recommended including a contact person's information in case there was a technical issue exploring the website.

Visual Design Could Be More User Friendly. The website used similar fonts, appropriate font sizes, images, and infographics, which made it easy for learners to read and understand the content. However, the users recommended having a different image for the front page and other pages for better visual design. Additionally, the font for some citations was not sufficiently large for users, and the icons on the first screen were difficult to see owing to the color of the background image. In addition, animations used in the PowerPoint slides may have distracted users from focusing on the content.

Clarified Terms, Resources, and Activities May Allow Users to Learn the DLW Concepts Better. Overall, each section was concise, helping users better focus on content and reduce distraction. Furthermore, the learner commented that it was great to see examples of a wide variety of client groups, which may resonate more with clinicians who work with a particular

group. The instructor recommended changing some wording for clarity and including missing references. The OT learner recommended including some resources that learners could download and use when learning. Moreover, the learner said that it would be helpful to see the progress of learning in each module, and she hoped to see more learning activities to attract attention and maintain interest and motivation.

Final Refinements to the Online Workshop. The researchers further refined the website of the DLW online workshop based on participants' usability test results and feedback. First, to improve the visual design and provide differentiation, the researchers used different images on the front page and on other pages, and we increased the font size of some slides for better readability. Moreover, the researchers removed unnecessary animation to allow learners to better focus on the content. Some wording was changed for better clarification and booklet was prepared containing learning resources to use while learning (which was subsequently included in the in-person workshop as well). Last, the researchers also added contact information in case learners experienced technical issues while exploring the website. All these modifications to the online workshop did not affect the similarities between the online and in-person workshops in any way.

Discussion

In this three-phase process, an initial understanding was gained of the ways OTs use the DLW framework by interviewing OTs who were using the framework in their routine practice as well as their needs for training. Understanding learners' needs is important in developing educational interventions (Graves, 1996). As can be deduced from the three themes of the current use of the

DLW framework, OTs using DLW concepts believed that the framework fit into their clinical settings and would be useful when having conversations with their clients about wellness. However, they wanted to learn more about the application of the concepts to their real-world practice. To meet this need, the researchers developed five case scenarios representing different practice settings so that potential users would have an opportunity to think about how to use the concepts in practice during the workshop. Providing case scenarios during education allows health care professionals to focus more on their learning because they are provided with examples of persons with lived experience that can resonate with their context (Thistlethwaite et al., 2012). Furthermore, case scenarios were presented in the format of video recordings of interviews with clients. This delivery method was found to be more acceptable and time-efficient when compared to the traditional written case scenarios (Gavgani et al., 2015). The OTs also thought that the theoretical concepts of the DLW framework might not be easily understood by their clients, which might hinder its implementation in their daily lives. They wanted structured worksheets or tools designed specifically for the DLW framework. Thus, the DLW team developed a workbook consisting of various resources and tools that could be used when they applied the DLW framework in their practice. The use of a workbook was designed to deliver knowledge in a more concise way and facilitate learners' active engagement in their learning (Utami et al., 2020).

In our second phase, the content for both in-person and online workshops was developed which incorporated key principles of PBL. Considering the importance of theoretical approaches when delivering knowledge (Aliakbari et al., 2015; Cartney, 2000; Hartzell, 2007; Mann et al., 2009; Pinney et al., 2007; Pololi et al., 2001), it was critical to apply a learning and teaching approach

to guide the development of DLW workshops. The PBL approach allowed us to develop a learner-centered educational environment by encouraging learners to actively participate in the learning process in both face to face and online platforms. Small and large group discussions were included in the in-person workshops and discussion forums in the online workshops by considering the core principles of PBL: facilitating collaborative and active learning, stimulating cognitive process, and using prior knowledge (Gewurtz et al., 2016a). Discussion is considered an important method in the learning process to assist learners in understanding different perspectives from other learners, examine their assumptions, get more connected to the knowledge, and develop abilities to integrate knowledge (Brookfield & Preskill, 2012). In addition, online discussion forums are cost efficient and allow learners to ask questions about content or usability issues. They can also provide learners with an opportunity to socialize with other learners (Ng, 2009).

In our final phase, the researchers conducted usability testing for the online workshop because the technology used to deliver the workshop content can affect learning (Sandars & Lafferty, 2010). The feedback received was used to improve the usability of the workshop website based on suggestions from our usability testers. The COVID-19 pandemic is putting more emphasis on the importance of online learning. In order to provide efficient education in this situation, it will be important to design online education programs based on evidence and theory. OT educators may be able to improve their online educational programs by incorporating a usability test as an essential component of developing a user-friendly online learning platform.

Strengths. While the researchers intended the reporting of our intervention development process as an essential preparatory step to our future interventional trial, the reporting of our development process also allows OT educators to gain insights on how to develop an educational program that takes into account learners' needs. The three-phase process reported here provides educators with a description of how to incorporate the PBL principles equally in both online and in-person learning environments so that learners can be actively engaged in their learning process regardless of the types of educational delivery methods. There have been studies incorporating PBL in the continuing education of health care professionals, but they lacked detailed description of how the PBL principles were applied in the educational intervention development (Smits et al., 2003; Taylor et al., 2004). To our knowledge, this study is the first to explain how the key PBL principles can be equally used for online and in-person workshop development.

Limitations. The use of different measures in our three-phase process allowed us to develop and refine the in-person and online workshops aimed at delivering knowledge about the DLW framework for OTs. There are, however, still more aspects to address in the future, such as incorporating more activities (e.g., games, quizzes, role-playing, etc.) that can enhance learning motivation (Chan, 2012; Cheong et al., 2013). For example, role-playing activities may suit the PBL environment and improve learners' critical thinking, which may affect their decision-making and problem-solving in practice (Chan, 2012). It might not be easy to implement role-playing online; however, creating videos of real-life practice situations might allow each learner to select a preferred character, such as a client, caregiver, or health care provider. The instructor would need to provide constructive feedback on learners' decision-making and offer them a

chance to reflect upon their role-playing experience. In addition, the researchers ruled out possible synchronous activities to explicitly differentiate online education from in-person learning. However, considering that OTs value professional socialization (Hollis & Madill, 2006), future researchers designing online educational interventions for OTs may consider including synchronous activities, such as a video meeting for some synchronous small or large group discussions.

Conclusion

There has been a lack of description of the development of online training workshops in OT continuing education. In this paper, a three-phase process is described that supported the team to develop the educational interventions (in-person and online workshops) intended to increase the knowledge and application of the DLW framework in OT practice. The researchers applied different approaches to develop evidence- and theory-based online and in-person workshops to deliver knowledge about the DLW framework for OTs. The researchers considered the development of these interventions as a pre-implementation project, an indispensable step prior to evaluating and comparing the effectiveness of in-person and online workshops. By reporting our development process, the authors provided an "audit trail" of intervention development which facilitates reproducibility of similar educational interventions (Foy et al., 2007).

Implications for OT Education

- It is important to understand learners' needs, apply a learner-centered approach, and test online educational methods when OT educators develop educational interventions for OTs.
- A detailed description of the workshop development process can provide OT educators with a template of elements to be included and potential process to adopt when developing evidence- and theory-based educational interventions for OTs.

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Chapter 3: Kim, S., Bayer, I., Gewurtz, R., Larivière, N., & Letts, L. (In preparation). Comparing Online and In-person Educational Workshops for Canadian Occupational Therapists and Understanding Their Learning Experiences

Preface

The second manuscript in this dissertation, titled "Comparing Online and In-person Educational Workshops for Canadian Occupational Therapists and Understanding Their Learning Experiences," was prepared to be submitted in the *Journal of Medical Internet Research (JMIR*). The inception of this study was driven by the increasing learning needs of OTs about the DLW framework. Online learning has been considered a method to share this knowledge with OTs across the world. Online learning has become popular among health professionals, and a systematic review (Vaona et al., 2018) reported that there is no difference in the effectiveness of online education compared with traditional in-person learning. However, only one study from this systematic review included OTs as participants along with other health professionals, and thus, the effectiveness of online learning for OTs is not well known. There was also a lack of studies that explored learners' experiences with both online and in-person learning. In this regard, the researchers conducted an explanatory sequential mixed-methods study to compare the effectiveness of online and in-person educational workshops regarding the DLW framework and to understand the workshop participants' experiences and perspectives on participating in both online and in-person learning. The quantitative results presented there showed no statistically significant difference in knowledge obtention regarding the DLW framework between the online and in-person workshop groups, but a difference existed in their satisfaction with the workshop. Our qualitative findings suggested the online and in-person learning formats each have their own

benefits and barriers, but participants in both learning formats considered personal interactions a great facilitator of learning. Adding synchronous interactions into online learning may improve learning experience in online education.

Comparing Online and In-person Educational Workshops for Canadian Occupational Therapists and Understanding Their Learning Experiences

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Keywords: Online education, Occupational Therapy, Occupational Therapists, Continuing education

Abstract

Background

The Do-Live-Well (DLW) framework is an occupation-focused health promotion approach. Many occupational therapists (OTs) have been interested in training opportunities regarding this relatively new framework. Traditionally, in-person educational interventions are the main way that OTs obtain knowledge, but online learning has become popular among health care professionals. However, its effectiveness and learners' experience in online learning have not been well studied in occupational therapy education.

Objectives

The purposes of this study were to evaluate the effectiveness of the online and in-person education DLW workshop for Canadian OTs and to understand their experiences in both types of workshops.

Methods

An explanatory sequential mixed-methods study design was used, where quantitative data were collected first; then, qualitative data was later used to explain the quantitative findings further. A quasi-experimental design and interpretative description methodology were used at quantitative and qualitative phases, respectively.

Results

Quantitative Results

43 OTs completed pre, post, and follow-up evaluations in the study (in-person, n=21; online, n= 22), Participants' practice setting varied, including geriatric, hospital, long-term, mental health, pediatric, primary, and private settings. *Primary outcome*. There were no statistically significant differences in knowledge changes at three-time points (p=.57 – .99) between the groups. In the

online group, the knowledge scores at follow-up were lower compared to the posttest results, meaning that knowledge gain were reduced over time in online group (p=.001). *Secondary outcomes*. There were statistically significant differences between groups in factors influencing DLW adoption at the posttest (p=.001) and satisfaction with the workshop (p<.001) at the posttest in favour of the in-person group.

Qualitative Results

18 OTs (9 from each group) participated in an individual interview. Out of the 18, 10 were applying the DLW framework in their practice, and 8 did not use it.

Five themes were identified regarding learners' workshop experience:

1. Relevance to Their Practice and Interests may Improve Learning
2. Familiar Learning Environment May Facilitate Learning
3. Synchronous In-person Interaction is Valuable in the Learning Process
4. Ease of Access to Learning should be Considered
5. Flexibility in Online Learning can be Both Beneficial and Challenging

Conclusions

The quantitative results of this study reported no difference in knowledge acquisition between the in-person and online workshop groups, indicating online education is as effective as the in-person workshop. However, participants' satisfaction with the workshop was statistically significantly higher in the in-person workshop. The qualitative findings described participants' perceived benefits and challenges of each educational format. The participants in both online and in-person workshop groups valued in-person interactions in learning, but the participants in the online workshop group expressed online learning lacked in-person like interactions. Thus,

adding synchronous in-person interactions in online learning may improve learners' educational experiences in online learning.

Introduction

Each day, human beings engage in various occupations, defined as sets of activities for purposes, such as self-care, leisure, and productivity, and are a core concept of occupational therapy [1]. Occupation-focused frameworks are used by occupational therapists (OTs) to understand occupational issues, enabling the provision of services that are responsive to clients' needs and goals [2]. The Do-Live-Well (DLW) framework is an evidence-driven Canadian health promotion approach developed by OTs [3]. The key message of the DLW framework is that engaging in daily patterns of activity that allow for an optimal range of experiences with sufficient personal and social supports can lead to a wide range of positive health and well-being outcomes [3]. Despite interest in this relatively new framework from OTs around the world, continuing education to support the adoption of the framework in practice has been limited to only certain areas of Canada, including Quebec and Ontario. Based on requests nationally and internationally, the developers of the framework identified a need to provide educational opportunities to meet these expanding learning needs.

The importance of health-care professionals engaging in continuing education activities to advance their professional knowledge and expertise has long been emphasized [4]. OTs have used continuing education as a primary resource to maintain and improve their knowledge, ensure clinical competency, and pursue personal development [5,6]. The importance of continuing education in occupational therapy practice has been addressed in literature [7–9]. Although the most common type of continuing education for OTs is through in-person delivery methods such as conferences, presentations, and seminars or workshops [6], online education has become increasingly popular in health-care professions across the world [4].

In this study, the term online learning was defined as "learning experiences via the use of some technology" (p.2) [10]. The advantages of this online delivery modality have been shown in health professional education, such as easy accessibility to learning without geographical restrictions, customized learning pace, and multimedia use [11–14]. In particular, the novel coronavirus outbreak in December 2019, leading to public health restrictions through 2020 and 2021, has dramatically changed the means of delivering knowledge from traditional in-person learning to online methods [15]. This indicates that online learning is no longer simply an option but rather an essential educational delivery route. Although the importance and availability of online education in occupational therapy education has been emerging since the beginning of the 21st century [16], the effectiveness of online education as a continuing educational opportunity compared to in-person education for OTs has not been well studied. A systematic review comparing the effectiveness of online and traditional in-person learning reported little or no difference in health professionals' knowledge, behavioral changes, or skills [17]. However, these results may not be definitively generalized to occupational therapy education because only a small proportion of study participants were OTs (only 8–11% of OTs in one Randomized Controlled Trial (RCT)) [17]. Furthermore, although the existing studies provide quantitative results in terms of the effectiveness of online and in-person learning, they lack an understanding of how the participants experienced these educational delivery methods. This understanding of what does or does not work well in both educational methods may help educators in occupational therapy improve future learning environments. Thus, research is needed to compare the effectiveness of online and in-person education delivery methods and understand participants' learning experiences in occupational therapy continuing education.

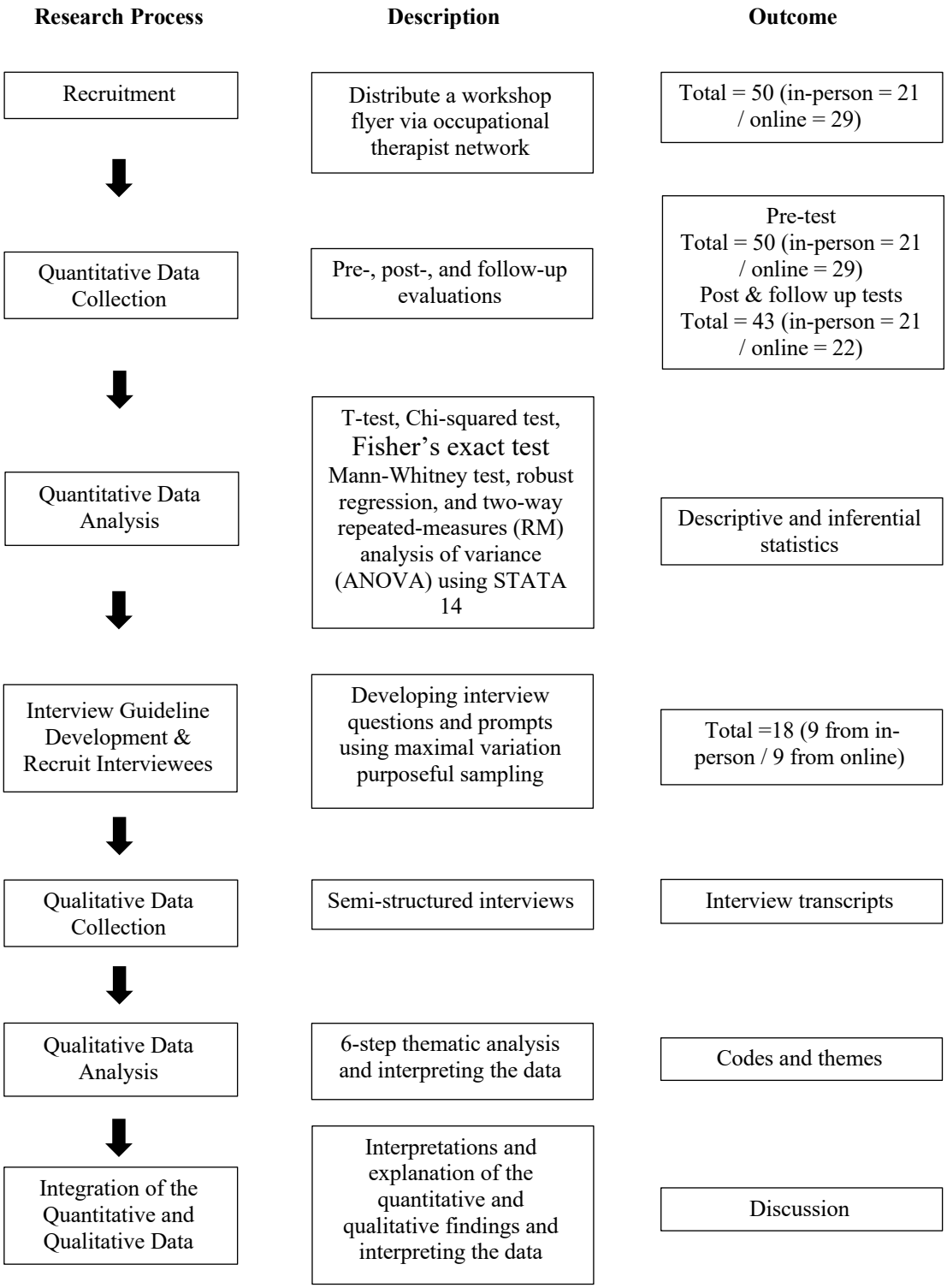
The objective of this study was to compare the effectiveness of an online DLW workshop compared with an in-person model for Canadian OTs and to understand the learners' experience of participating in both online and in-person workshops. The primary research questions of this study are "What is the effectiveness of the online DLW workshop compared to the in-person DLW workshop?" and "What are the perceived benefits and challenges of participating in both educational delivery methods?"

Methods

Study Design

This study received approval from the Hamilton Integrated Research Ethics Board (HiREB Project#: 4114). An explanatory sequential mixed-methods study design was used to evaluate the effectiveness of online and in-person DLW workshops and to understand participants' experiences in learning about the framework [18]. This study consisted of two phases, in which quantitative data were collected first, and then qualitative data were later used to expand on the findings from the quantitative data. Figure 1 presents a visual diagram of the study process. ***Quantitative Phase*:** A pre-, post-, and follow-up quasi-experimental design was used to compare the immediate and subsequent outcomes of the online workshop with those of the in-person workshop. Participants were not randomly assigned due to geographical limitations. ***Qualitative Phase*:** An interpretative description approach [19] was used to understand learners' perceived benefits and challenges of participating in the workshops. Interpretative description was considered appropriate for use because it allows a flexible approach to capturing the experiences of participants and for researchers to apply research findings to practice [19].

Figure 1: Overview of the study design including the research process, description, and outcome for each stage



Participants

***Quantitative Phase*:** Participants were Canadian OTs who enrolled in either the online or in-person DLW workshop. We recruited participants by distributing a research flyer via Canadian OT communities and offered the workshop free of charge as part of the study participation. Canadian OTs practicing in any setting were eligible to participate in this study because the DLW framework is designed to be applied with people of any age, health condition, capacities and occupational challenges. The target sample size was 51 in total; this estimate was based on an expected effect size of 0.9 gain in knowledge [20], where the power of 0.8 and alpha of 0.05 and a 20% dropout rate were applied. A workshop flyer was posted on the Canadian Association of Occupational Therapists website, and the DLW team members shared the flyer with colleagues in their network to recruit eligible participants. ***Qualitative Phase*:** Although there is no guideline for calculating sample size in qualitative research [21], and interpretative description can be performed with almost any sample size [19] it is recommended to have at least 12 participants to reach data saturation in this type of design [22]. We recruited online and in-person workshop participants for a semi-structured 1:1 interview. We sent an invitation to all workshop participants via email to seek participation in an interview 3 months after the workshop. We hoped that we would gain various perspectives of participants in different clinical settings who used the DLW framework to varying degrees regardless of their education, work experience, and gender [23].

Workshop Description

Both the online and in-person workshops consisted of four sessions (please see the Table 1 for the schedule). Workshop content was scripted to ensure that both online and in-person workshops delivered the same content. The in-person workshop was a single-day 8-hour workshop, and the online workshop was planned to last 4 weeks, also taking approximately 8 hours. A problem-based learning approach was incorporated to facilitate a learner-centered learning environment. For example, participants were divided into five groups according to the case scenario they had chosen; they had a chance to answer reflective questions through discussions. To meet the purpose of this study, we limited the interactions provided in the online workshop to asynchronous components, recognizing that synchronous activities using technology is possible, but was not the focus of our study. Although the online workshop was asynchronous/pre-recorded, discussion forums were provided online to give learners an opportunity to interact and share their perspectives with one another as well as educators with expertise in the DLW Framework. The details of the workshop development process are described elsewhere [24].

Table 1: Workshop Schedule

Introducing instructors, participants, and learning and teaching approach	
Session 1	Introducing case scenarios
	Health promotion & health and well-being outcomes
Session 2	Introduction of the DLW framework
	Dimensions of activity
Session 3	Activity patterns
	Social and personal support
Session 4	Application of the DLW framework
	Large group case scenario discussions
Wrapping up	(Q&A / Reflection), Post-evaluation

Data Collection

Quantitative phase. We developed the pre (Appendix 1), post (Appendix 2), and follow-up (Appendix 3) questionnaires specifically for this study through a literature review and consultation with four occupational therapy research experts from the DLW research team. The purpose of the consultation was to ensure that appropriate questions were included to measure the outcomes of the workshop. Three levels of the training evaluation model by Kirkpatrick and Kirkpatrick, including reaction, learning, and behaviour, were used to decide on the content of the questionnaires [25]. The questionnaires at each time point consisted of slightly different content packages (Table 2) but aimed to capture comprehensive understanding of the effectiveness of the workshop. We incorporated the key constructs of the Diffusion of Innovation (DOI) model [26] into the questionnaire, in particular for questions about Factors Influencing DLW Adoption. This was intended to ensure a comprehensive evaluation of the appropriate parameters to determine the potential for adopting the DLW framework among OTs. The DOI model explains how new knowledge (innovation) is disseminated in a certain social system over time, and the main constructs used are attributes of innovation, communication channels, and the social system [26]. After developing the initial versions of the questionnaires, the researchers pretested them qualitatively with four graduate students in the rehabilitation science program at McMaster University (will be deleted for peer review). The questionnaires were refined based on the students' feedback and discussions with the DLW research team members. For example, the level of knowledge questions was adjusted, and more detailed instructions were added.

Table 2: Questionnaire Content

Questionnaire	Content
Pretest	Part 1. Background Information about the Participant
	Part 2. Current Status of the Use of the DLW Framework
	Part 3. Factors Influencing DLW Adoption
	Part 4. Knowledge Questions
Posttest	Part 1. Factors Influencing DLW Adoption
	Part 2. Knowledge Questions
	Part 3. Satisfaction with the Workshop
Follow-up test	Part 1. Current Status of the Use of the DLW Framework
	Part 2. Factors Influencing DLW Adoption
	Part 3. Knowledge Questions

Primary outcome. The primary outcome was knowledge of the DLW framework. The DLW research team tested how much participants knew about the DLW framework at three time points (pre, post, and 3 months follow-up) through two multiple-choice questions and eight true-or-false questions. Each question had a value of 1 point for a correct answer; if a respondent answered all questions correctly, they earned 10 points. The participants were asked to complete the pre-workshop questionnaire one week before the workshop to evaluate participants' baseline level of knowledge of the DLW framework. Then, the participants were required to complete the post-workshop questionnaire immediately following the workshop; and three months after the workshop, participants were asked to complete the follow-up questionnaire.

Secondary outcomes. The secondary outcomes included the following: (1) changes in factors influencing DLW adoption, (2) satisfaction with workshops, and (3) current usage of the DLW framework. For factors influencing DLW adoption, the questions asked about the advantages, compatibility, complexity, trialability, and observability of DLW use [26]. Participants also evaluated their communication channel, social system, and intention for the DLW use. All participants were asked to complete their evaluations at three time points (pre, post, and three months follow-up). The questionnaire included ten questions, a six-level Likert scale (1=Strongly Disagree to 6=Strongly Agree) and the total score ranged from 10 to 60. The core ideas of the questionnaire were the same for the pre, post, and follow-up questionnaires, with the exception of one question asking about the participants' desire to apply the DLW framework that was removed for the follow-up test. Participants were asked to score their satisfaction with their workshop experience immediately after the workshop. The satisfaction questionnaire consisted of 16 questions, with a Likert scale ranging from 1=Strongly Disagree to 7=Strongly Agree, and its total score ranged from 16 to 112. Example questions include: the accessibility of the workshop was convenient; the learning environment encouraged me to actively participate in learning; and the time frame of the workshop was appropriate. Finally, participants were asked about their current use of the DLW framework by answering a yes/no question both at pretest and follow-up questionnaires. They were also asked about the frequency with which they have used the DLW framework with their clients and at an organizational level, where 0 indicated 'never use it', and 10 indicated 'use it all the time'.

Qualitative Phase. The first author developed the qualitative interview guide based on the findings from the follow-up quantitative data analysis. The goal of this qualitative phase was to understand what worked well and what did not work well for participants in both learning formats by acquiring a comprehensive understanding of the participants' learning experiences. The interview questions focused on exploring each participant's experiences in the workshop, including facilitators and challenges of participating in the workshop and engaging with the workshop content, as well as recommendations for future workshops. Each interview lasted for 40–60 minutes. Due to the COVID-19 pandemic, all participants were interviewed online using the videoconferencing platform Zoom. The interviews were audio and video recorded with participant consent.

Data Analysis

Quantitative Phase. All statistical analyses were conducted using STATA version 14 [27]. Descriptive statistics were generated to present the participants' characteristics and the variables of interest. The t-test was used to find the differences in the mean total scores of the normally distributed variables of the two groups. If the variable was not normally distributed, the Wilcoxon-Mann-Whitney test was conducted. To find differences in categorical variables between the two groups the chi-squared test was used and Fisher's exact test was applied in analysis of small samples. Robust regression was conducted as an alternative to analysis of covariate and linear regression because of the violation of normality and homogeneity of variance assumptions, respectively. Two-way repeated-measures (RM) analysis of variance (ANOVA) was used to find any statistically significant differences over time in variables.

Qualitative Phase. Interviews were transcribed verbatim by the first author and data analyses were supported with use of NVivo 12 [28]. We followed the 6-step analytical process described by Braun and Clarke [29]. This process included the following: familiarizing with the data through repeated readings, developing codes, grouping codes into themes, reviewing themes, generating definitions and names of the themes, and writing a report [29]. The first author read all transcripts several times and immersed herself into the data. Then, the first author generated initial codes relevant to the primary goal of the qualitative phase, which was understanding the benefits and challenges of participating in an online/in-person workshop. When generating the themes, the researchers realized that both groups' participants had some experiences with both formats, although not in the DLW workshop. For example, participants in the online group had prior experience with in-person learning and shared various perspectives on the benefits and challenges of participating in both formats. Thus, rather than generating themes comparing the experiences of participants in the online and in-person workshop, we generated themes describing participants' comprehensive perspectives and experiences regarding both formats. Then, the first author presented the data analysis process and reported initial themes to the research team. The themes were refined and finalized through discussion amongst the research team.

To establish the credibility of the findings, the first author wrote reflective notes for each interview participant and discussed with the research team whether the identified themes answer the research questions [30]. Furthermore, detailed descriptions of the research methods were provided to ensure the dependability of the qualitative findings [30].

Results

Quantitative Data

Participants' Characteristics

Initially, 50 OTs agreed to participate in the study (in-person, n=21; online, n=29). Seven people in the online group did not complete the post and follow-up evaluations. Thus, data comparing 21 in-person and 22 online workshop participants are presented. There was no statistically significant difference in the demographic characteristics between the 2 groups. The detailed characteristics of the participants are presented in Table 3.

Table 3: Participants' Characteristics

Variables	In-person	Online	Total	*p* value
Age	n=21	n=22	n=43	.86
Mean (SD)	39.29 (11.1)	38.3 (9.70)	38.79 (10.32)	
Sex	Female=21	Female=21	Female=42	.99
	Male=0	Male=1	Male=1	
Education level	BscOT=4	BscOT=7	BscOT=11	.74
	MScOT=17	MScOT=22	MScOT=39	
Overall years of	n=21	n=29	n=50	.80
experience as an OT	13 (11.73)	12.46 (8.64)	12.69 (9.94)	
Mean (SD)				
Years of practice in	n=21	n=29	n=50	.64
the current	8.28 (9.89)	6.26 (6.33)	7.11 (7.99)	
setting/domain				
Mean (SD)				
Resources used to	Journal=0	Journal=1	Journal=1	.053
learn about DLW	Lecture=1	Lecture=2	Lecture=3	
before the workshop	Website=8	Website=8	Website=16	

	More than one of above=6	More than one of above=2	More than one of above=8	
	None of above=6	None of above=15	None of above=21	
Practice setting	Geriatric=1	Geriatric=3	Geriatric=4	.46
	Hospital=1	Hospital=3	Hospital=4	
	Long-term=1	Long-term=1	Long-term=2	
	Mental=10	Mental=8	Mental=18	
	Pediatric=1	Pediatric=2	Pediatric=3	
	Primary=3	Primary=3	Primary=6	
	Private=1	Private=0	Private=1	
	None of above=2	None of above=9	None of above=11	
Preference	In-person=17	In-person=20	In-person=37	.65
	Online=2	Online=6	Online=8	
	None=2	None=3	None=5	
Use of the DLW in	Yes=2	Yes=0	Yes=2	.17
practice	No=19	No=29	No=48	

Primary Outcome

Effects of the Workshops on Knowledge Regarding the DLW Framework. At baseline, the in-person group (n=21) reported a mean of 5.48 (SD=1.75) out of 10 on their knowledge of the DLW framework, while the online group (n=29) reported a mean of 5.39 (SD=1.69) out of 10, meaning participants knew about half of the core concepts of the DLW framework that were tested in the knowledge questionnaire. The t-test presented no statistically significant difference between the groups at baseline (p=.87).

Immediately following the workshop, the participants who attended the in-person workshop reported a mean of 7.62/10 (SD=0.22), while the participants in the online workshop reported a mean of 7.81/10 (SD=0.27); no statistically significant difference in knowledge regarding the DLW framework between the two groups immediately following the workshop (p=.57).

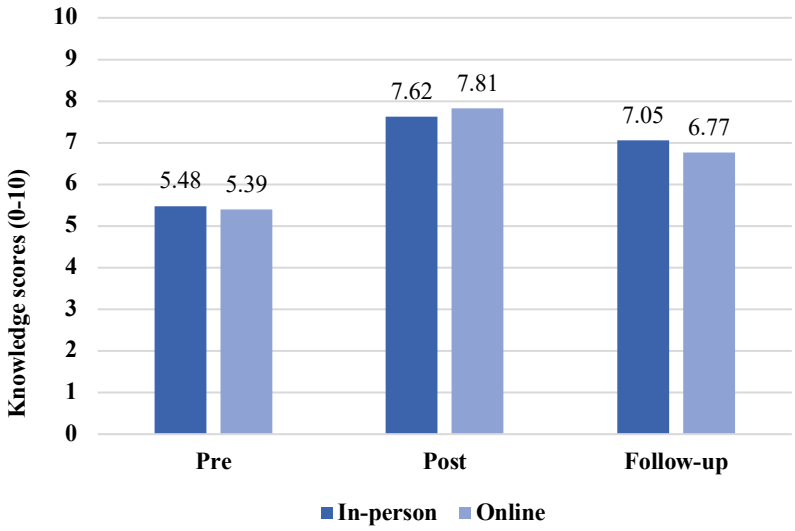
Similarly, at the follow-up evaluation, there was no statistically significant difference in knowledge regarding the DLW framework between the groups (p=.99) (in-person reported a mean of 7.05/10 (SD=1.12); the online group had a mean of 6.77/10 (SD=1.80).

In terms of the knowledge differences over time among the online and in-person workshops, Mauchly's test of sphericity validated the use of the two-way RM ANOVA (p=.63). There was no statistically significant interaction between the type of workshop and time regarding knowledge of the DLW framework [$F(2, 48)=0.90$, p=.41]. The main effect for the workshop type was not statistically significant [$F(1, 48)=0.15$, p=.70], meaning there was no difference in knowledge means between the in-person and online groups over time. On the other hand, there was a significant main effect for time [$F(2, 48)=40$, $p<.001$]. The pairwise comparisons indicated that in the in-person group the knowledge change was reported between

the pretest and posttest (Contrast=2.14 [95% CI 1.42–2.87], $p<.001$), meaning that knowledge improved immediately following the workshop. In addition, knowledge improved in follow-up evaluations compared to preworkshop knowledge (Contrast=1.57 [95% CI 0.84–2.30], $p<.001$). This result revealed an improvement in knowledge regarding the DLW framework at the post- and follow-up evaluations when compared to the baseline scores. On the other hand, there was no knowledge change between the posttest and follow-up test (Contrast=-0.57 [95% CI -1.30–0.16], $p=.12$), which means that knowledge remained the same three months after the workshop.

In the online group, there was knowledge change between the pretest and posttest (Contrast=2.42 [95% CI 1.70–3.14], $p<.001$), between the pretest and follow-up test (Contrast=1.16 [95% CI 0.44–1.88], $p=.002$), and between the posttest and follow-up test (Contrast=-1.26 [95% CI -1.97–-0.54], $p=.001$). Knowledge improved both at the posttest and follow-up evaluations compared to the pretest results. However, the knowledge scores at the follow-up evaluations were lower compared to the posttest results, which means that there was some reduction in knowledge gains over time. The changes in knowledge of each group at the three time points are presented in Figure 2.

Figure 2: Changes in Knowledge over Time

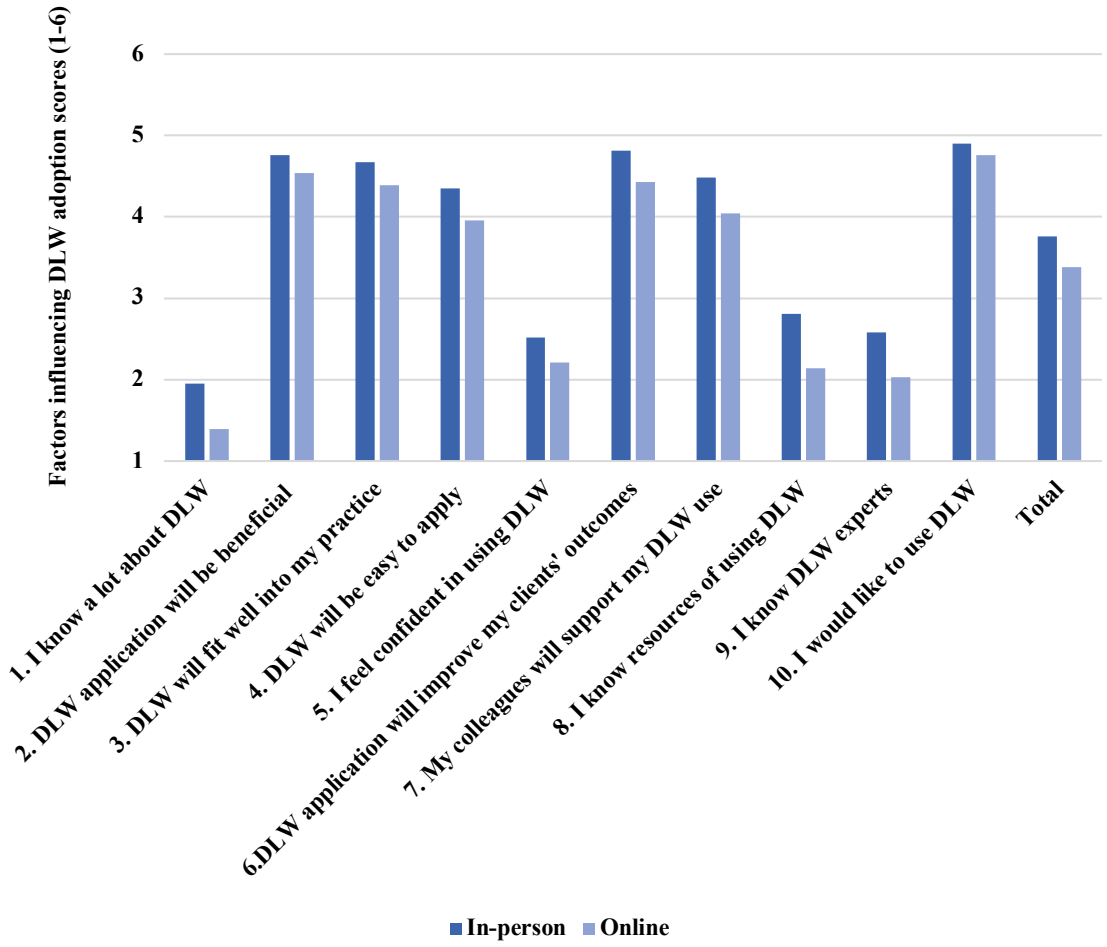


Secondary Outcomes

Effects of the Workshops on the Factors Influencing DLW Adoption. The mean total score of the pretest for the factors influencing the application of the DLW framework in practice was 38.24 (SD=5.19) out of 60 for the in-person group and 33.82 (SD=6.05) out of 60 for the online group. This represented a statistically significant difference using a t-test between the 2 groups in terms of the factors influencing the application of the DLW framework in practice (p=.01). The participants in the in-person group showed higher scores for all questions regarding influencing factors (see Figure 3), indicating more positive perceptions of their situations that would support adoption of the DLW in their practices. Both groups presented the lowest score on the question that asked about how much the participants knew about the DLW framework (in-person = 1.95/online = 1.39), and the highest score was their willingness to use the DLW framework in practice (in-person = 4.9/online = 4.76). A pretest had been conducted before participants took the DLW workshops, and both groups scored low in terms of their knowledge

of the DLW framework, confidence in using it, and how well they knew the resources and experts that would help them understand the DLW framework. Participants felt the DLW framework would be beneficial in their practice and improve their clients' health outcomes. Also, they believed the DLW would fit well in their practice, be easy to apply and co-workers would support their use of the DLW fmamework. The question asking about how much participants knew about the DLW resources presented the largest difference in the mean scores between the two groups. The question asking if the DLW framework would be beneficial in their practice presented the smallest gap between the two groups.

Figure 3: Difference in Influencing Factors of Each Item between the Online and In-person Groups at Pretest



Immediately following completion of the workshop, the mean total score of the factors influencing the use of the new knowledge in practice was 52.10 (SD=4.89.) and 43.82 (SD=8.16) out of a maximum score of 60 in the in-person and online groups, respectively. Since there was a statistically significant baseline difference in the factors influencing the adoption of the DLW framework between the two groups (p=.01), the robust regression procedure was conducted using the pretest result as a covariate. Independent variables were group and the mean total score

at pretest, and the dependent variable was the mean total score at posttest. The robust regression result still presented a statistically significant group difference [$F(2,39)=13.98$, $R^2=0.5094$, $p=.001$] after controlling the covariate, and the participants in the in-person group presented higher scores on each item of the questionnaire (Figure 4). The in-person group scored an average of 5.17 more points than the online group after controlling for the pretest results as a covariate (Table 4).

Compared to the pretest results, both groups had increased scores for every question except that the participants in the online group scored lower in the question asking how easy it would be to apply the DLW framework in practice. Specifically, both groups presented a large increase in the questions asking about their knowledge of the DLW framework, confidence in its use, the extent of their knowledge of its resources and experts, compared to the pretest results.

The in-person group presented the highest score on the question regarding their willingness to use the DLW framework and the lowest score on the question regarding their confidence in using the DLW framework in their practice. The online group presented the highest score on the question regarding the benefit of the DLW framework and the lowest score on the question regarding the ease of using the DLW framework in their practice.

The largest difference between the groups was the question asking about how well they knew DLW experts; in other words, compared to the online group, the participants in the in-person group felt they knew the DLW experts better.

Figure 4: Difference in Influencing Factors of Each Item between the Online and In-person Groups at Posttest

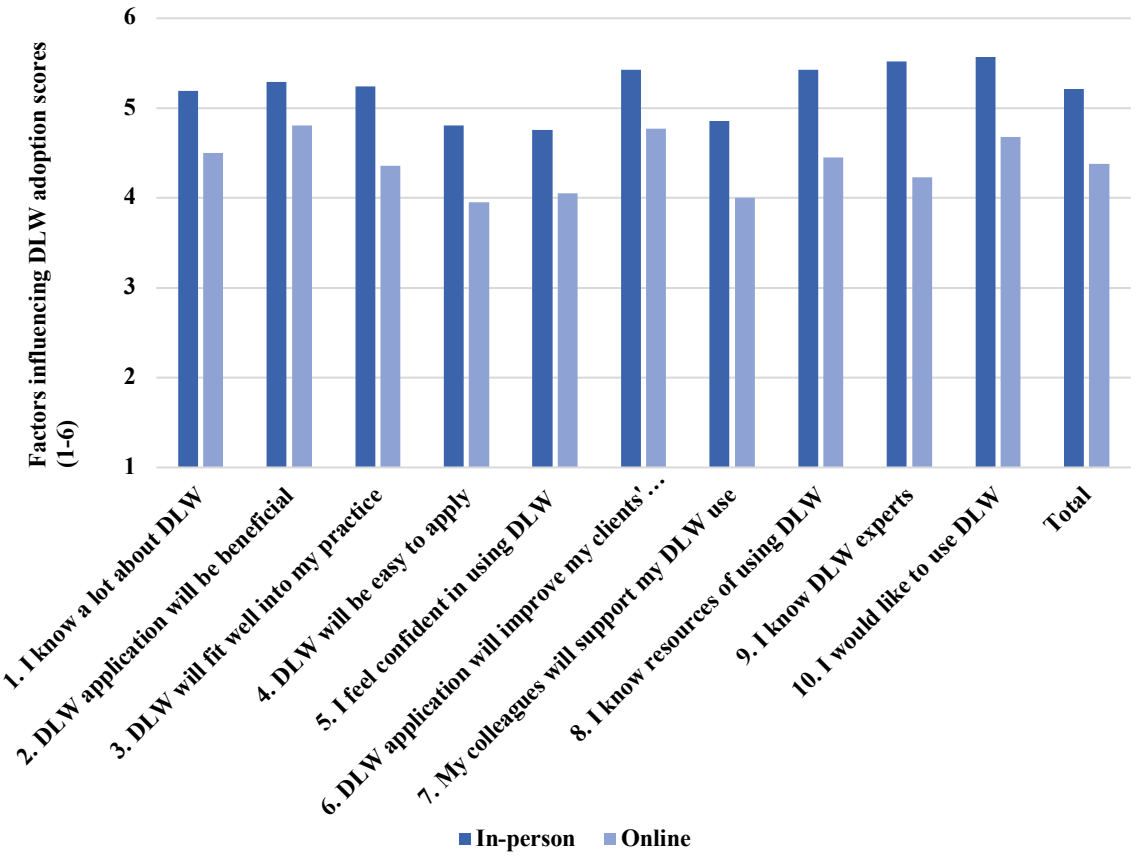


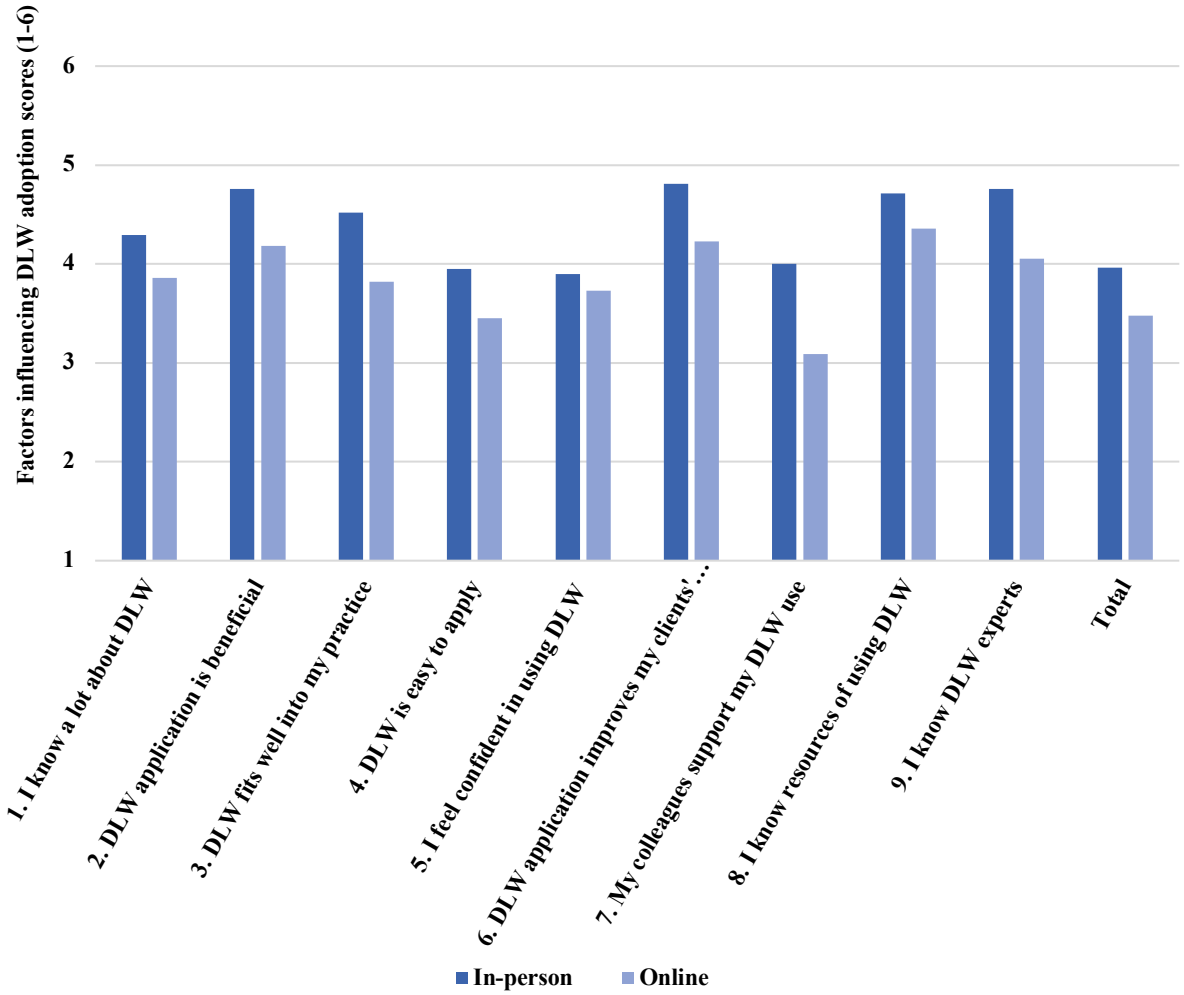
Table 4: Robust Regression of Posttest for Factors Influencing DLW Adoption

Variable	*B*	*Robust Std. Error*	*t*	*P>|t|*	*F*	[95% Conf. Interval]	
						Lower Bound	Upper Bound
Group	-5.17	1.48	-3.49	0.001		-8.16	-2.18
Pretest	.65	.14	4.71	0.000		.37	.93
Constant	27.09	5.31	5.11	0.000	13.98	16.36	37.82

* R^2=0.5094

Three months after the workshop at the follow-up evaluation of the factors influencing the adoption of the DLW framework, the in-person group presented a mean total score of 39.62 (8.24), while the online group reported a mean total score of 34.77 (8.72) out of a maximum score of 60. Each item's score is presented in Figure 5; the participants in the in-person group scored higher in all items, just as with the pre- and posttest results.

Figure 5: Difference in Influencing Factors of Each Item between the Online and In-person Groups at Follow-up Test



The robust regression was also performed, and no statistically significant difference was noted between the groups after controlling for the covariate [$F(2,39)=1.69$, $R^2=0.14$, $p=0.19$] (Table 5). The in-person group presented the highest score on the question regarding their belief on the positive impact of the DLW framework for their clients' health outcomes and the lowest score in the question asking about the confidence of using the DLW framework in their practice. The online group presented the highest score in the question asking about their accessibility in

the DLW resources and the lowest score in the question asking about their colleagues' supports in DLW applications.

Both groups presented decreased scores for every question compared to the posttest. The difference in a total mean score of the questions between the two groups mostly became smaller compared to the posttest except for the questions asking about the benefit of the DLW framework in practice and colleagues' support in its use. The largest difference between the groups was evident in the question asking if their colleagues would support their DLW application. In other words, the in-person group felt more positive about their colleagues' support in the DLW application. The smallest difference between the groups was regarding the question about participants' confidence in the DLW application; the in-person group showed decreased scores compared to the posttest. Throughout all phases (pre-, post-, and follow-up test), the in-person group presented higher scores for all questions asking about the factors influencing the DLW adoption.

Table 5: Robust Regression of Follow-up Results for Factors Influencing DLW Adoption

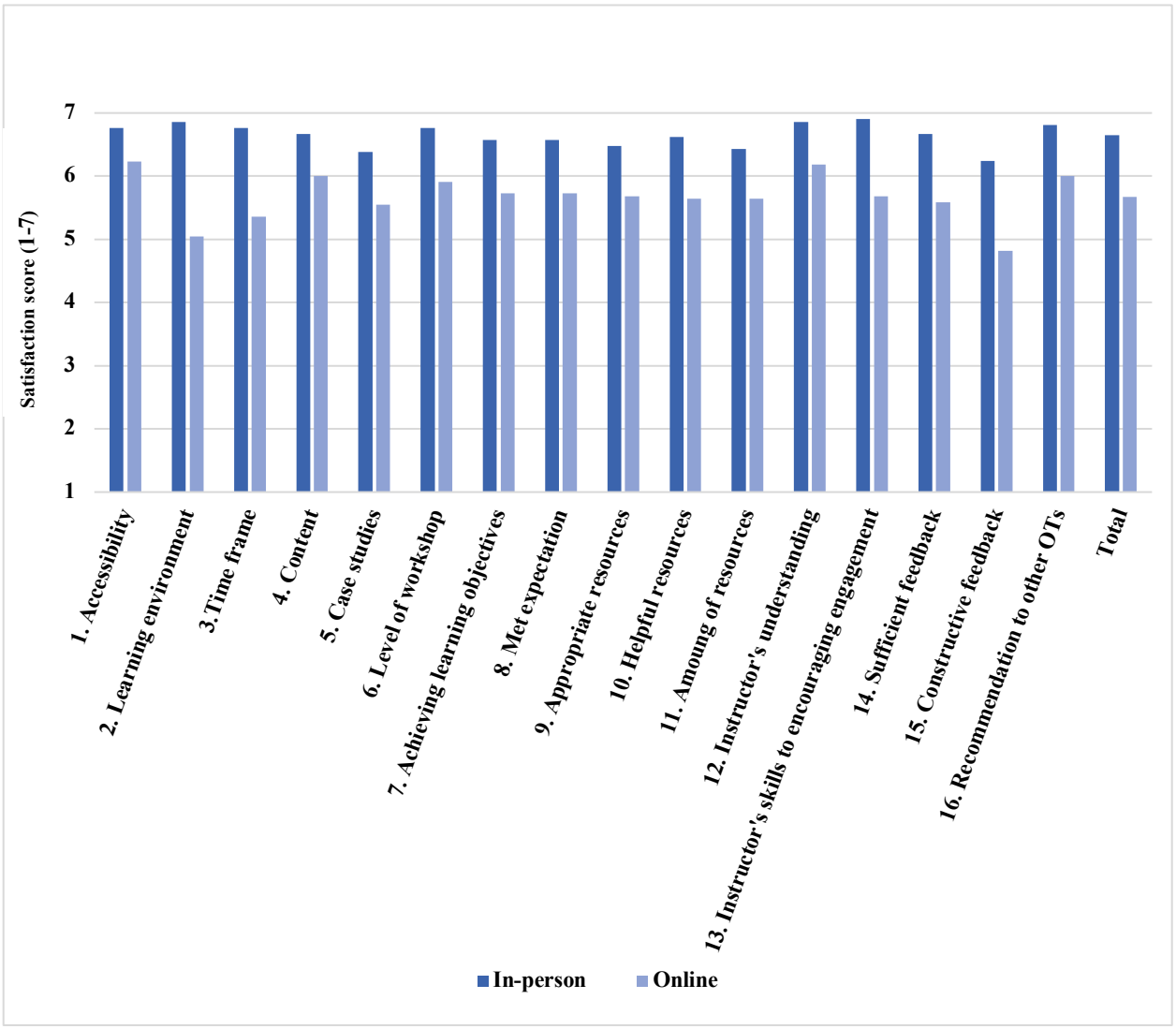
Variable	*B*	*Robust Std. Error*	*t*	*P>|t|*	*F*	[95% Conf. Interval]	
						Lower Bound	Upper Bound
Group	-2.73	2.06	-1.32	0.194		-6.90	1.45
Pretest	.44	0.28	1.56	0.127		-0.13	1.00
Constant	25.34	7.85	3.23	0.003	1.69	9.47	41.21

* R^2=0.14

Satisfaction with the Workshops. Immediately following the workshop, the participants in the in-person group were more positive in their appraisal of the workshop (mean total score=106.38, SD=6.73) than the online group (mean total score=90.77, SD=16.11). The Mann-Whitney test presented a statistically significant difference between the groups in their satisfaction with the workshop ($p<0.001$). The participants in the in-person group scored higher for all items asking about their satisfaction with the workshop (Figure 6). The in-person group was most satisfied with the instructors' skills in encouraging participants' engagement and least satisfied with the instructors' constructive feedback.

The online group was the most satisfied with the accessibility of a learning method and least satisfied with the instructors' constructive feedback. The largest difference between the groups was on the question asking about the learning environment in favour of the in-person group, and the smallest difference between the groups was on the question asking about the accessibility of learning.

Figure 6: Difference in Satisfaction of Each Item between the Online and In-person Groups at Posttest



Effects of the Workshops on DLW Application after the Workshop. Three months after the workshop, nine people out of 21 (42.86%) in the in-person group said they had been using the DLW framework. In the online group, six people out of 22 (27.27%) said they had been using the DLW framework. The chi-square test revealed no statistically significant difference in the use of the framework after the workshop (χ^2=1.15, p=.28). The clinical practices

of the 15 OTs applying DLW concepts in practice coming from both groups were as follows: mental health (n=6 / in-person=5, online=1), primary care (n=4 / in-person=2, online=2), accessibility service (n=1 / in-person=1), pediatrics (n=1 / online=1), and private setting (n=1 / in-person=1).

The mean frequency of the DLW framework usage with clients was 2.62 (2.54) (on a frequency scale of 0 – 10) for the in-person group (n=21) and 1.59 (2.13) for the online group. (n=22). The Mann-Whitney test presented no statistically significant difference between the groups (p=.13). In terms of the OTs' frequency of usage of the DLW framework other than for their clients [in-person (n=21), mean=2.71/10, SD=2.47 / online (n=22), mean=1.95/10, SD=2.30], there was no statistically significant difference between the groups (p=.22). The results of all outcomes at the three time points are described in Table 6.

Table 6: Mean Scores for the Primary and Secondary Outcomes at the Three Time Points

Outcomes	Pretest			Posttest			Follow-up Test		
	In-person (n=21) Mean (SD)	Online (n=29) Mean (SD)	*P*-value	In-person (n=21) Mean (SD)	Online (n=22) Mean (SD)	*P*-value	In-person (n=21) Mean (SD)	Online (n=22) Mean (SD)	*P*-value
Knowledge regarding DLW	5.48 (1.75)	5.39 (1.69)	.87	7.62 (0.22)	7.81 (0.27)	.57	7.05 (1.12)	6.77 (1.80)	.99
Factors influencing DLW adoption	38.24 (5.19)	33.82 (6.05)	.01	52.10 (4.89)	43.82 (8.16)	.001	39.62 (8.24)	34.77 (8.72)	.19
Reaction to the workshop		N/A		106.38 (6.73)	90.77 (16.11)	.0005		N/A	
Use (yes or no)				N/A			Yes=9 No=12	Yes=6 No=16	.28
Use with clients (0–10)				N/A			2.62 (2.54)	1.59 (2.13)	.13
Use at an organizational level (0–10)				N/A			2.71 (2.47)	1.95 (2.30)	.22

Qualitative Data

Participants' Characteristics

In total, 18 OTs (9 from each group), including 1 male and 17 females, participated in an individual interview on average 14 weeks following the end of their workshop participation. Their mean age was 39.56 years (SD 9.95), and their mean work experience was 13.44 (9.57) years. Four OTs had their bachelor's degree, and 14 had a master's degree in occupational therapy. Out of the 18, 10 were applying the DLW framework in their practice, and 8 did not use it. Their practice settings were as follows: mental health (n=6), primary care (n=2), hospital (n=2), and others (n=8) including education, long-term care, ophthalmology clinics, pediatric, accessibility, private practices, rehab units, and veterans' centers.

Five themes from the ideas that were discussed frequently were identified in relation to the OTs' experience of participating in online and in-person workshops, focusing on its facilitators and challenges.

Theme 1. Relevance to One's Practice and Interests May Improve Learning

Participants seemed to engage in learning better when the content was relevant to their practice or interests. The learners, in both the online and in-person workshops, were able to choose the ***case scenario*** that was relevant to their practice or interest. Being able to choose the case scenario increased the learners' motivation. In this regards, one participant in the online group said,

> *I like the fact that I could choose one that was relevant, I think I would have a much harder time obviously with a setting or a population that I am not familiar with. So that was a nice way to learn*. [Interviewee 18]

In addition, some participants seemed to like ***discussions or conversations that were directly related to their practice or interests***. Some found a downside of the in-person workshop was listening to conversations that were not directly related to their practice or interests. Unlike online learning, where people could freely choose what to read based on their interests, people in the in-person workshop had to sit down and listen to every conversation, which could lead to a loss of interest or motivation for learning. One participant in the in-person group said,

> *I mean, I think sometimes it might have been that people were really passionate about maybe a certain area that I might not have as much interest in, so you would need to certainly wait.* [Interviewee 7]

Theme 2. Familiar Learning Environment May Facilitate Learning

Some participants felt they learn better when the learning environment is comfortable. Some participants in the in-person group said they like the in-person learning because they were ***familiar*** with its environment. They described in-person learning as "old school" learning where their instructor is physically in front of them. Some said the in-person workshop was a familiar learning environment, consistent with how they have studied in the past. Thus, for some learners, the familiar learning environment allowed them easily to engage in their learning because that was how they have always learned. Two participants in the in-person group expressed this by saying,

> *I think it is the familiarity and how I am used to learning because with that I can adapt.* [Interviewee 3]
>
> *Oh, I learn better if the person is actually in front of me.* [Interviewee 5]

Often with in-person learning, learners are provided printed materials. During our in-person DLW workshop, we also provided a printed workbook, and this paper-based material

seemed to allow learners to better focus on their learning. One participant in the in-person workshop said,

> *Having paper-based materials typically right in front of me as well is helpful. That is how I typically retain information better. This brain of mine functions better.* [Interviewee 9]

An electronic version of the workbook was provided to participants in the online workshop. One participant in the online workshop felt less familiar with the online learning environment and used her own learning strategy to overcome the challenges she experienced. The participant mentioned it was not easy for her to go back and forth among the webpages to find an appropriate reference to answer the discussion questions. Thus, she used her own notes and wrote down the key point of the lecture, which she used to answer the discussion questions. In this way, she made the online context more familiar to her own learning style to enhance her engagement with the material. She said,

> *I do like the website format and kind of like typing out responses, but a downside to that is that I kind of always had to reference material from different pages to look at my answers again. What I found helpful is just like I just kind of write my own notes on the side and I refer to that when I write the answers.* [Interviewee 13]

Theme 3. Synchronous In-person Interaction is Valuable in the Learning Process

Participants in both the online and in-person workshops found synchronous in-person interaction to be a great facilitator of their learning. They mentioned that ***nonverbal communication cues*** were important in their learning. One participant said,

> *I feel like the in-person, the face-to-face interactions would allow me to take in cues that you may not necessarily be able to get when you are doing even the phone call or*

teleconference. I truly believe that there is a lot of information in nonverbal communication. [Interviewee 8]

In addition, it seemed ***dynamic discussions*** were another important aspect in learning, whereby learners actively exchanged opinions with peers and instructors on various topics regarding the DLW framework. This active process of sharing thoughts exposed them to different perspectives that they had not previously encountered. One participant shared her thoughts regarding the dynamic discussion:

I think that for me it is the discussions, from hearing others' point of view, and then how other people apply it to situations that I might not even have thought of. [Interviewee 3]

On the other hand, one participant in the online group said there was no opportunity for dynamic discussions in online learning:

[In online learning] you cannot build as much on top of other people's things. So, you get to see more of what people are saying, but you cannot brainstorm together. [Interviewee 14]

Furthermore, being able to ***ask questions*** the moment they had them was another facilitator in participants' learning. If learners had questions about the content, the learners in the in-person group could immediately ask the instructor. However, unlike the in-person learning environment, it was not easy to ask a question in real time through the online learning platform. One participant in the online group said,

Because it [online learning] was offered asynchronously you did not necessarily have a chance to ask a question at the moment if there was a question. [Interviewee 15]

Similarly, participants liked to receive ***immediate feedback*** from peers or instructors during their learning. One participant in the in-person group said.

I really liked to have immediate feedback from not just the peers but also the organizers of the workshop. [Interviewee 8]

Finally, the learners in the in-person workshop liked to ***meet other OTs*** from different practice settings. One participant in the in-person group said,

I really enjoyed meeting other people in that course and seeing what they are doing in their practice. I think a lot of them had a unique OT role and also, how they are using the Do-Live-Well method. [Interviewee 5]

On the other hand, one participant in the online group expressed the online workshop did not provide the same quality networking opportunities as the in-person workshop:

The disadvantage [of online learning] is that you do not necessarily get that face-to-face networking quality. [Interviewee 18]

Theme 4. Ease of Access to Learning Should be Considered

Accessibility to learning seemed to be an important aspect that educators should consider when they provide educational opportunities. The participants in both the online and in-person workshop groups identified some benefits and challenges of accessing each learning format.

First, the participants in the in-person workshop group mentioned ***commuting*** was a challenge in accessing the workshop location. For learners who did not have cars, commuting to the workshop location was difficult. Additionally, the cold weather in the winter in Canada affected their access to learning. Two participants in the in-person group commented that

The challenge is the commute time. Driving there, at the parking, getting the day off work to do it. [Interviewee 1]

I think the weather was not that nice. It was cold. I mean the commute was not that bad from Toronto to Hamilton but obviously, that would have deterred quite a few people if they do not have a car or it is too far to be able to access. [Interviewee 5]

Some participants in the online workshop group mentioned that the online workshop was a ***safe way*** of learning. Owing to the COVID-19 pandemic, online education was being considered a safe and primary route by which learners could take courses without worrying about risks. One participant in the online group said,

I think benefits of online is that, like especially in this COVID season, you can be safe and like kind of not be at risk of being exposed to COVID for sure. [Interviewee 13]

In addition, learners in the online group said a benefit of online learning was that it was ***free from geographical restrictions***. Some learners took the online courses in Alberta and even while traveling outside of Canada; thus, learners took courses wherever they had online access, which made learning more accessible for them. One participant in the online group expressed,

I am in Kingston…being able to take it here and in Argentina, that was beneficial. [Interviewee 14]

However, if the learner did not have the necessary ***equipment*** to take the online class, such as online access and a computer, there were restrictions on taking the course itself, which affected learning. In regard to this equipment requirement and its inherent challenges, a participant in the online group said,

It was finding a computer that I can use because I do not have my own computer. [Interviewee 10]

Theme 5. Flexibility in Online Learning Can be Both Beneficial and Challenging

According to the opinions of the participants in the online workshop group, the flexibility of online learning seemed to be both an advantage and a disadvantage. First, ***self-paced*** learning was found to be a facilitator of their learning process. In online learning, learners could choose the best time of the day to take the course, which possibly decreased potential distractions. Moreover, learners were able to control the speed of learning based on their individual learning styles. A participant in the online group shared her thoughts:

> *I would say that you can do it at your own pace. So if you have a setting like I do, where you can have interruptions, you think you might have a certain amount of time to set aside, but you then are interrupted with something that you would like to do or it needs to be done, that you can go ahead and do that, and then you can continue your learning.* [Interviewee 10]

Another benefit of online learning was ***repeatability***. In online learning, learners could repeat the course whenever they want. For example, they could repeat the specific content that they do not understand well, and this ability to repeat the course helped learners better understand and remember the content. One participant in the online group shared her experience of being able to repeat the content:

> *I liked that I could actually review the videos. I went back to watch them a few times to remind myself what you think. I think I actually went back with one of the later parts of it and went back and watched it again one of the earlier ones. I like that aspect to which I do not think you could do in an in-person setting. You would have to just remember what was happening.* [Interviewee 16]

However, flexibility of learning also hindered the learning process because some learners ***procrastinated*** on completing their course. The learners postponed taking online courses for various reasons. One participant in the online group said,

> *I think I procrastinate. I think it is easier to not set a time to do it. Whereas if it is in-person you are just there. You do not have an option. Okay, you go. For the most part or that is the only time they are offering it. So that is the time you have to get up.* [Interviewee 14]

Some participants also had difficulty ***prioritizing*** taking the online course over other tasks, which affected their overall engagement in learning. A participant in the online group expressed the difficulty of prioritizing as follows:

> *So, for me, making it a priority was a bit of a challenge, because I had the flexibility to do it whenever, I did end up doing most of it like the night before it closed. So that was not necessarily how I had anticipated being able to use it. Because of that, my participation in the online forums was pretty minimal.* [Interviewee 12]

Discussion

Considering the appeal and current popularity of online learning, we examined the effectiveness of an online PBL-based DLW workshop compared to a PBL-based in-person DLW workshop. We also gained insights into learners' perspectives on their participation in both learning formats. The quantitative data presented no statistically significant difference between groups in knowledge change at the three time points (pre-, post-, and follow-up testing), but there was a reduction of the knowledge over time in the online group. A statistically significant difference existed in factors influencing the DLW adoption and satisfaction with the workshop at posttest. However, there was also no difference in the use of the DLW framework three-months after the workshops. We also identified the key aspects of participants' learning experience through our qualitative data: relevance to practice and interest, familiar learning environment, synchronous in-person interaction, ease of access to learning, and flexibility in online learning.

Similar to a recent review of the effectiveness of online learning compared to traditional in-person learning for health care professionals [17], the quantitative results about knowledge change showed no differences in knowledge gained between the groups [17]. This suggests that online learning is as promising as traditional learning for obtaining knowledge. Undoubtedly, acquiring knowledge is important for health care professionals as they need foundational knowledge to solve various clinical problems in practice [31]. The participants in our study who attended the in-person workshop had a more satisfying learning experience in all aspects of the workshop based on our quantitative results. Bray and colleagues identified that learners considered interaction as an important factor that led to learning satisfaction [32]. This is further endorsed through our qualitative findings, in which participants highlighted the importance of interaction with instructors and peers in the learning process. There were no synchronous interactions in the online workshop in our study; and thus, the participants in the online groups who felt the lack of personal interactions might have been less satisfied with the workshop, as our satisfaction results showed. In addition, this aspect of social interaction may influence the long-term effect of knowledge retention. This study reported a reduction of knowledge in the online group over time, albeit not statistically significant. Real-time social interactions have reported the effectiveness of learning by helping learners "organize their thoughts, reflect on their understanding, and find gaps in their reasoning" (p.3102) [33]. Thus, a lack of synchronous interactions with peers and instructors may negatively impact the learners' knowledge retention in the online group.

In terms of the factors influencing the DLW concepts in practice, right after the workshop, the participants of the in-person workshop seemed to be more positive toward the DLW application in their practice; however, 3 months after the workshop, there was no statistically significant difference in the factors influencing DLW adoption between the

groups. At the time of the research, the COVID-19 pandemic was resulting in significant disruptions in OTs' practice contexts, and learners' perceptions about the DLW application might have been affected by the COVID-19 pandemic. The participants who believed the DLW could be incorporated in their practice have faced barriers to using it during COVID-19 restrictions and changes to practice. Many in-person programs were canceled, and OTs were busy dealing with urgent situations and changed policies, which may have resulted in decisions not to implement DLW concepts as planned. Also, immediately after the DLW workshops, there was the largest difference between the two groups in the question asking about how well the participants knew DLW experts. Compared to the in-person workshop, where the participants could meet and talk with the DLW experts, the participants in the online group may have given this question a lower score because they did not have the same opportunity to meet the experts in person. However, this difference between the two groups did not last three months after the workshops, as indicated by the decreased score in the in-person group. Only one person from the online group contacted the DLW team after the workshop, and it is expected that even though the participants in the in-person group believed they knew the DLW experts well immediately after the workshop, this impression did not last for three months because they did not maintain connections with the experts after the workshop. A recent survey study of OTs' preferences in continuing education has shown that OTs want to receive ongoing individual support even after their education has ended [34]. Thus, we recommend educators provide a way for learners to keep connected with experts of new knowledge even after disseminating the knowledge. A possible way of connecting learners and experts is mentorship. Mentor-mentee programs have been used in occupational therapy education to support less experienced OTs' growth in professional skills [35,36]. A case study reported that a novice OT found mentorship helpful in applying knowledge to a real-world practice, leading to the OT's professional growth [36]. Thus, having a regular

meeting or follow-up check-in opportunity may allow learners to feel connected to the DLW experts, enabling them to sustain their knowledge and support them to apply what they have learned.

The relevance of knowledge to clinical practice and/or interest has been emphasized in our qualitative findings. Regardless of which type of workshop learners participated in, quantitative and qualitative findings suggest that it was helpful in their learning process that they were able to choose a case scenario related to their practice and interest. In a review on learning theories and education for health care professionals, Abela argued that the relevance of new knowledge to learners' clinical practice should be considered when educators decide on the discussion topics [37]. Furthermore, Gewurtz et al. also noted that PBL is premised on the assumption that "learning is most effective when it is applicable to practice" (p. 64) [38]. Therefore, educators planning to develop online and/or in-person learning for OTs should reflect on how new knowledge is relevant to the learners' practice.

In the satisfaction questionnaire, accessibility of online learning was the component that online learners were the most satisfied with. In the literature, accessibility has been recognized as a great benefit of online learning by allowing anyone to access learning materials without restrictions [39]. This benefit of accessibility was made more evident by our qualitative findings. The online workshop participants appreciated they could participate in learning without regional restrictions. Even when travelling abroad during the study period, a participant could take the online DLW courses. The benefit of this accessibility would make learning easier for international learners or learners in remote areas who want to learn more about the DLW framework. Therefore, online education will help educational institutions or associations that want to attract global learners. Although the satisfaction

ratings were lower for the online group, the learners in this group valued the flexibility that online learning provided, given they could take and repeat the modules whenever they wanted because the workshop materials were provided asynchronously. The benefits of the asynchronous feature of online learning are that it supports different learning styles and preferences [40]. However, the importance of synchronous interactions was also emphasized through the interviews with participants of both the online and in-person workshops. Thus, adding synchronous communication to online learning may benefit learners by encouraging them to engage in their learning more actively. In the literature, an opportunity to have synchronous communication allowed learners to discuss the content in-depth and kept them feeling an urgency for learning [41], and therefore, may contribute to the successful completion of online courses. Furthermore, synchronous communication is more related to the social aspect of learning than asynchronous communication [42]. Considering OTs value the social aspect of learning [16], future research on continuing education for occupational therapist should include synchronous discussions via video conferences or live chats to maximize benefits. By doing so, learners may have more time to absorb and reflect on what they have learned and enhance and validate their understanding by asking questions and receiving immediate feedback.

Strengths. To our knowledge, there were no studies that examined the effectiveness of online continuing learning with a comparison group of in-person learners specifically for OTs. This study provided quantitative findings, and the authors were able to directly hear participants' perspectives and learning experiences in both online and in-person learning environments. We believe this study can support occupational therapy educators to develop and provide effective online education by understanding the advantages and disadvantages of the two different educational methods.

Limitations. The online workshop platform allowed us to identify which participants joined the discussion forums and to see their login information via the workshop website, but we did not know if participants completed all of the course materials. Although we assumed that those who did not complete the post-evaluation might not have completed their online course, post-workshop evaluation is not an accurate indicator of the successful completion of the course. Thus, for future educational studies examining the effectiveness of online education, researchers should track learners' course completion if possible. Unless the pre-installed software to track learners' completion is available, researchers may need to ask their participants directly about course completion. Also, all questionnaires used to measure the outcomes of this study were developed specifically for this study, and thus, the reliability and validity of the questionnaires themselves have not been demonstrated. Future studies may focus on developing standard measures to evaluate the effectiveness of educational interventions. In addition, this study was conducted in Hamilton, Canada, but participants were recruited from across Canada. We were not able to randomize our participants because OTs far from the study site could not be included in the in-person group. Future studies may consider offering both online and in-person workshops to all participants and then randomize the participants.

Conclusion

This study suggests that online education can be effective for OTs as online education enabled learners to acquire a similar level of knowledge compared with in-person education. Also, each educational method has its strengths and barriers identified by the learners. Adding a synchronous feature and a mentor/individual follow-up to online learning may facilitate more active involvement by participants in their learning, resulting in a more positive online learning experience.

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Appendices

Appendix 1. Pre Questionnaire

Part 1. Background about you

Identifier (Please enter your first initial in upper case followed by the last four digits of your telephone number with no spaces, e.g., S7787. You will be asked to re-enter this identifier on subsequent questionnaires. This process will allow us to identify changes in scores over time while maintaining anonymity.)

- Total years in OT practice:
- Current Practice Area:
- Years/Months working in your current setting:
- Highest degree:
- Please describe any resources you have accessed related to the Do Live Well framework

  (i.e., lectures, presentations, website, or journal publications):
- What format of delivery would you prefer?

  a. In-person b. Online c. No preference
- Please describe the reasons for choosing this delivery method:
- Please tell us your learning objectives and expectations for a workshop:

Part 2. Current Status of the Use of the DLW framework

Are you currently using the DLW framework? **Y** or **N**

If **yes**,

1. On a scale from 0-10, how often do you use the DLW framework with your clients?

0	1	2	3	4	5	6	7	8	9	10

0: I never use the DLW framework with my clients
5: I use the DLW framework with the about half of my clients
10: I use the DLW framework with all of my clients

2. On a scale from 0-10, how often do you apply the DLW framework in your practice? (This includes things of varying scope you do in your practice except for the direct use with your clients. E.g., documentation, team communication, collaborative work with other disciplines, or writing a referral form)

0	1	2	3	4	5	6	7	8	9	10

0: I never use the DLW framework in my practice
5: I use the DLW framework in my practice at about 50% rate
10: I use the DLW framework in my practice all the time

Part 3. Factors Influencing Adoption of the DLW framework and Intention to Use it

Please rate the extent to which you agree with the following statements.

1. I know a lot about the DLW framework.

Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Slightly Agree (4)	Agree (5)	Strongly Agree (6)
○	○	○	○	○	○

2. Applying the DLW framework will be beneficial for me as a clinician.

Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Slightly Agree (4)	Agree (5)	Strongly Agree (6)
○	○	○	○	○	○

3. The DLW framework will fit well into my clinical setting.

Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Slightly Agree (4)	Agree (5)	Strongly Agree (6)
○	○	○	○	○	○

4. The DLW framework will be easy for me to apply in my practice.

Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Slightly Agree (4)	Agree (5)	Strongly Agree (6)
○	○	○	○	○	○

5. I feel confident in applying the DLW framework in my practice.

Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Slightly Agree (4)	Agree (5)	Strongly Agree (6)
○	○	○	○	○	○

6. Applying the DLW framework in my practice will improve clients' health and well-being.

Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Slightly Agree (4)	Agree (5)	Strongly Agree (6)
○	○	○	○	○	○

7. My colleagues will support me to use the DLW framework in my practice.

Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Slightly Agree (4)	Agree (5)	Strongly Agree (6)
○	○	○	○	○	○

8. I know of resources that can help me better understand about the DLW framework.

Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Slightly Agree (4)	Agree (5)	Strongly Agree (6)
○	○	○	○	○	○

9. I know experts in the DLW framework.

Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Slightly Agree (4)	Agree (5)	Strongly Agree (6)
○	○	○	○	○	○

10. I would like to use the DLW framework in my practice.

Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Slightly Agree (4)	Agree (5)	Strongly Agree (6)
○	○	○	○	○	○

11. Please provide any additional relevant information in the box below.

Part 4: Knowledge Questions

- Multiple Choice Questions (choose the correct answer)

1. Which of the following is *not* one of the DLW dimensions of experience?

   (1) Activating your body, mind, and senses

   (2) Contributing to community and society

   (3) Taking care of yourself

   (4) Saving your energy

   (5) Building prosperity

2. Which of the following is *not* one of the DLW activity patterns?

   (1) Routine

   (2) Control/choice

   (3) Engagement

   (4) Meaning

   (5) Collaboration

- True or False Questions (choose the correct answer)

1. There are three main sections in the DLW framework: dimensions of experience, activity patterns, and health and well-being outcomes. (T / F)

2. Activity patterns consider the nature of what people do but do not necessarily consider how people engage in day-to-day activities. (T / F)

3. Although eight dimensions of experience are intended to be discrete, they are interrelated. (T / F)

4. The DLW framework is designed to be prescriptive so that clinicians can easily and accurately apply its concepts in their practice. (T / F)

5. Patterns of activity engagement affect the extent to which positive health and well-being outcomes are met. (T / F)

6. According to the DLW framework, there are two health and wellness outcomes; physical and mental health. (T / F)

7. The DLW framework is designed to promote reflection and occupational engagement by acknowledging the outcomes of day-to-day activities are always positive. (T / F)

8. The DLW framework is a conceptual model and can be applied at the three levels: an individual, community, and national level. (T / F)

Appendix 2. Post Questionnaire

Part 1. Factors Influencing Adoption of the DLW framework and Intention to Use it

Please rate the extent to which you agree with the following statements.

1. I know a lot about the DLW framework.

Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Slightly Agree (4)	Agree (5)	Strongly Agree (6)
○	○	○	○	○	○

2. Applying the DLW framework will be beneficial for me as a clinician.

Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Slightly Agree (4)	Agree (5)	Strongly Agree (6)
○	○	○	○	○	○

3. The DLW framework will fit well into my clinical setting.

Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Slightly Agree (4)	Agree (5)	Strongly Agree (6)
○	○	○	○	○	○

4. The DLW framework will be easy for me to apply in my practice.

Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Slightly Agree (4)	Agree (5)	Strongly Agree (6)
○	○	○	○	○	○

5. I feel confident in applying the DLW framework in my practice.

Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Slightly Agree (4)	Agree (5)	Strongly Agree (6)
○	○	○	○	○	○

6. Applying the DLW framework in my practice will improve clients' health and well-being.

Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Slightly Agree (4)	Agree (5)	Strongly Agree (6)
○	○	○	○	○	○

7. My colleagues will support me to use the DLW framework in my practice.

Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Slightly Agree (4)	Agree (5)	Strongly Agree (6)
○	○	○	○	○	○

8. I know of resources that can help me better understand about the DLW framework.

Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Slightly Agree (4)	Agree (5)	Strongly Agree (6)
○	○	○	○	○	○

9. I know experts in the DLW framework.

Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Slightly Agree (4)	Agree (5)	Strongly Agree (6)
○	○	○	○	○	○

10. I would like to use the DLW framework in my practice.

Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Slightly Agree (4)	Agree (5)	Strongly Agree (6)
⬭	⬭	⬭	⬭	⬭	⬭

11. Please provide any additional relevant information in the box below.

Part 2: Knowledge Questions

- Multiple Choice Questions (choose the correct answer)

1. Which of the following is *not* one of the DLW dimensions of experience?

   (1) Activating your body, mind, and senses

   (2) Contributing to community and society

   (3) Taking care of yourself

   (4) Saving your energy

   (5) Building prosperity

2. Which of the following is *not* one of the DLW activity patterns?

   (1) Routine

   (2) Control/choice

   (3) Engagement

   (4) Meaning

   (5) Collaboration

- True or False Questions (choose the correct answer)

1. There are three main sections in the DLW framework: dimensions of experience, activity patterns, and health and well-being outcomes. (T / F)

2. Activity patterns consider the nature of what people do but do not necessarily consider how people engage in day-to-day activities. (T / F)

3. Although eight dimensions of experience are intended to be discrete, they are interrelated. (T / F)

4. The DLW framework is designed to be prescriptive so that clinicians can easily and accurately apply its concepts in their practice. (T / F)

5. Patterns of activity engagement affect the extent to which positive health and well-being outcomes are met. (T / F)

6. According to the DLW framework, there are two health and wellness outcomes; physical and mental health. (T / F)

7. The DLW framework is designed to promote reflection and occupational engagement by acknowledging the outcomes of day-to-day activities are always positive. (T / F)

8. The DLW framework is a conceptual model and can be applied at the three levels: an individual, community, and national level. (T / F)

Part 3: Reactions to the workshops

Instruction

Please respond to the following statements by using the 7-point rating scale to indicate the extent to which you agree or disagree with each statement. Please click the number that applies.

7= Strongly agree / 6 = agree / 5= Slightly agree / 4= Neutral / 3=Slightly disagree / 2= disagree / 1=Strongly disagree

1. The accessibility of the workshop was convenient.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree

2. The learning environment encouraged me to actively participate in learning.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree

3. The time frame of the workshop was appropriate.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree

4. The content was helpful to understand the DLW framework.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree

5. The case studies were helpful.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree

6. The level of the workshop was appropriate.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree

7. My learning objectives were achieved.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree

8. The workshop met my expectations.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree

9. The learning resources were appropriate.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree

10. The learning resources were helpful.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree

11. The amounts of learning resources were sufficient.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree

12. The instructor had a good understanding of the topics.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree

13. The instructor had a good skill to encourage participant engagement.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree

14. The instructor provided sufficient feedback.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree

15. The instructor provided constructive feedback.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree

16. I recommend that the workshop be repeated for other occupational therapists.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree

Please provide any suggestions for improvement, comments, and feedback on this workshop in the box below.

What additional content would you like us to cover in the workshop?

For participants of online workshop, please let us know if there were any technical issues you experienced while taking this online workshop.

Appendix 3. Follow-up Questionnaire

Part 1. Current Status of the Use of the DLW framework

Are you currently using the DLW framework? **Y** or **N**

If **yes**,

1. On a scale from 0-10, how often do you use the DLW framework with your clients?

0	1	2	3	4	5	6	7	8	9	10

0: I never use the DLW framework with my clients
5: I use the DLW framework with the about half of my clients
10: I use the DLW framework with all of my clients

2. On a scale from 0-10, how often do you apply the DLW framework in your practice? (This includes things of varying scope you do in your practice except for the direct use with your clients. E.g., documentation, team communication, collaborative work with other disciplines, or writing a referral form)

0	1	2	3	4	5	6	7	8	9	10

0: I never use the DLW framework in my practice
5: I use the DLW framework in my practice at about 50% rate
10: I use the DLW framework in my practice all the time

Part 2. Factors Influencing Adoption of the DLW framework and Use of it

Please rate the extent to which you agree with the following statements.

1. I know a lot about the DLW framework.

Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Slightly Agree (4)	Agree (5)	Strongly Agree (6)
○	○	○	○	○	○

2. Applying the DLW framework is beneficial for me as a clinician.

Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Slightly Agree (4)	Agree (5)	Strongly Agree (6)
○	○	○	○	○	○

3. The DLW framework fits well into my clinical setting.

Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Slightly Agree (4)	Agree (5)	Strongly Agree (6)
○	○	○	○	○	○

4. The DLW framework is easy for me to apply in my practice.

Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Slightly Agree (4)	Agree (5)	Strongly Agree (6)
○	○	○	○	○	○

5. I feel confident in applying the DLW framework in my practice.

Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Slightly Agree (4)	Agree (5)	Strongly Agree (6)
○	○	○	○	○	○

6. Applying the DLW framework in my practice improves clients' health and well-being.

Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Slightly Agree (4)	Agree (5)	Strongly Agree (6)
○	○	○	○	○	○

7. My colleagues support me to use the DLW framework in my practice.

Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Slightly Agree (4)	Agree (5)	Strongly Agree (6)
○	○	○	○	○	○

8. I know of resources that can help me better understand about the DLW framework.

Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Slightly Agree (4)	Agree (5)	Strongly Agree (6)
○	○	○	○	○	○

9. I know experts in the DLW framework.

Strongly Disagree (1)	Disagree (2)	Slightly Disagree (3)	Slightly Agree (4)	Agree (5)	Strongly Agree (6)
○	○	○	○	○	○

10. Please provide any additional relevant information in the box below.

Part 3: Knowledge Questions

- Multiple Choice Questions (choose the correct answer)

1. Which of the following is *not* one of the DLW dimensions of experience?

   (1) Activating your body, mind, and senses

   (2) Contributing to community and society

   (3) Taking care of yourself

   (4) Saving your energy

   (5) Building prosperity

2. Which of the following is *not* one of the DLW activity patterns?

   (1) Routine

   (2) Control/choice

   (3) Engagement

   (4) Meaning

   (5) Collaboration

- True or False Questions (choose the correct answer)

1. There are three main sections in the DLW framework: dimensions of experience, activity patterns, and health and well-being outcomes. (T / F)

2. Activity patterns consider the nature of what people do but do not necessarily consider how people engage in day-to-day activities. (T / F)

3. Although eight dimensions of experience are intended to be discrete, they are interrelated. (T / F)

4. The DLW framework is designed to be prescriptive so that clinicians can easily and accurately apply its concepts in their practice. (T / F)

5. Patterns of activity engagement affect the extent to which positive health and well-being outcomes are met. (T / F)

6. According to the DLW framework, there are two health and wellness outcomes; physical and mental health. (T / F)

7. The DLW framework is designed to promote reflection and occupational engagement by acknowledging the outcomes of day-to-day activities are always positive. (T / F)

8. The DLW framework is a conceptual model and can be applied at the three levels: an individual, community, and national level. (T / F)

Chapter 4: Kim, S., Larivière, N., Bayer, I., Gewurtz, R., & Letts, L. (In preparation) Occupational therapists' application of the Do-Live-Well framework: A Canadian health promotion approach

Preface

The third manuscript in this dissertation, titled "Occupational therapists' application of the Do-Live-Well framework: A Canadian health promotion approach," was prepared for the *Canadian Journal of Occupational Therapy*. As part of the implementation science study, the DLW research provided equivalent online and in-person DLW workshops, compared their effectiveness, and understood learners' learning experiences in both learning formats. However, the researchers did not investigate how the workshop participants applied the DLW framework in practice after the completion of the educational workshops. Thus, three months after the workshop, I interviewed 18 workshop participants to understand the benefits, facilitators, and barriers of using the DLW framework in practice.

Overall, there were different levels of factors that influenced the application of the DLW framework, and we used a multilevel framework to present our findings. The participants valued the DLW framework because it allows their clients to reflect on the meaning occupations that can be related to their health and wellness, but there were some challenges in using the DLW framework, such as a lack of confidence in using the framework and environmental factors of practice settings. On top of this, the COVID-19 pandemic affected the application of the DLW framework.

Occupational therapists' application of the Do-Live-Well framework: A Canadian health promotion approach

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Abstract

Background

The Do Live Well (DLW) framework is an occupation-focused health promotion approach. Online and in-person DLW educational workshops were offered to encourage OTs to apply the DLW concepts.

Purpose

The purpose of this study was to understand workshop participants' experiences of and perspectives on the DLW applications to support OTs' DLW applications in the future.

Method

Interpretative description methodology was used to understand workshop participants' perspectives on benefits, facilitators, and challenges of the DLW framework's use. Semi-structured interviews were conducted and analyzed using an inductive thematic analysis.

Findings

Eight themes were identified as follows: (a) environmental factors of practice settings, (b) co-workers' support, (c) DLW enhanced OT practice, (d) confidence in the DLW use, (e) the nature of the DLW framework, (f) DLW promoted healthy occupational engagement, (g) not everyone was suitable for DLW, and (h) pandemic effects.

Implications

The DLW framework supports occupationally focused practices, and continuous learning support will be needed.

Health promotion is a growing part of the occupational therapy scope (Söderback, 2015), and occupational therapists' (OTs') roles in health promotion include "enabling, mediating and advocating to build healthy public policy; creating supportive environments; strengthening community action; developing personal skills; and reorienting health services" (Letts et al., 1993, p.10). Although it has been established that occupations can promote individuals' health and wellness (Creek & Hughes, 2008; Law et al., 1998; Wilcock & Hocking, 2015), health promotion in Canada has focused primarily on diet, exercise, medical checkups, and smoking (Nettleton, 2021). In addition, there is a lack of guiding models or theories to support OTs' incorporation of health promotion concepts in their practice (Hildenbrand & Lamb, 2013). Thus, an occupation-focused health promotion framework was needed to facilitate health and well-being for Canadians of all ages and abilities.

The Do-Live-Well (DLW) framework is a health promotion approach developed by Canadian OTs. The main idea of the framework is that "what you do every day matters," and the framework was developed to convey the message to individuals that they can have "choices and opportunities for living well" (Moll et al., 2015, p. 11). The DLW framework was designed for use by any individual, group, or community regardless of age and health status (Moll et al., 2015). The framework provides a broad view of health and wellness by focusing not only on physical and mental health but also on emotional, social, and spiritual health (Gewurtz et al., 2016; Moll et al., 2015). The DLW framework comprises four main constructs: dimensions of experience, activity patterns, social and personal forces, and health and wellness outcomes. The framework reflects participating in diverse experiences with optimal activity patterns and sufficient personal and social support, which can result in a wide range of positive health and

wellness outcomes (Moll et al., 2015). The components of each section of the framework are described in Table 1.

Table 1

Components of each section of the Do-Live-Well framework.

Section	Components
Dimensions of Experience	Activating your body, mind, and senses
	Connecting with others
	Contributing to community and society
	Taking care of yourself
	Building security/prosperity
	Developing and expressing identify
	Developing capabilities and potential
	Experiencing pleasure and joy
Activity Patterns	Engagement
	Meaning
	Balance
	Control/Choice
	Routine
Social and Personal Support	Personal forces: age, gender, ethnicity, health, etc.
	Social forces: accessibility, affordability, restrictive rules, etc.
Health and Wellness Outcome	Physical, mental, social emotional, spiritual health and wellness

Because the DLW framework emphasizes the importance of participating in diverse meaningful experiences for better health and well-being, it may provide OTs with a structure within which to think about how they can contribute to healthy populations and communities and help them develop tools or interventions that incorporate occupations in practice. However, it is a relatively new framework and has not been widely adopted by OTs, perhaps because of a lack of opportunities to disseminate the knowledge surrounding this framework. The DLW team has therefore offered educational opportunities for OTs in recent years. As part of this knowledge dissemination effort, a research project compared the effectiveness of in-person and online workshops, and the results of this project are reported elsewhere. Although this project allowed the DLW team to understand the effectiveness of both educational methods and the participants' perspectives regarding their workshop experience, it did not identify how workshop participants used the framework and what challenges, facilitators, and benefits of DLW application they experienced in their practice. It is important to understand which aspects of the framework worked and which did not in different practice settings to support adoption of this framework for OTs in the future. Since our previous study reported no difference in knowledge gained between the online and in-person groups, this project's focus was to explore how the workshop participants applied the DLW framework, regardless of the format for workshop delivery. Thus, the objective of this study was to understand the participants' perspectives on using or not using the DLW framework and what worked and what did not work for their practices. The research question was "What are the OTs' perspectives on the DLW application in practice?"

Methods

Design

This study used Thorne's (2016) interpretative description methodology to understand participants' perceived challenges and benefits of DLW application after they participated in a workshop about the DLW framework. Interpretative description is frequently used in health profession research to answer qualitative questions relevant to applied clinical practice. This methodology was considered appropriate to be used in this study because the researchers wanted to understand how the concepts of the DLW framework could be used in OT practice and what to consider to support OTs' use of the framework. This study was approved by Hamilton Integrated Research Ethics Broad (HiREB Project#: 4114).

Participants

Participants were Canadian OTs who attended both online and in-person DLW workshops. Maximum variation purposive sampling was used to recruit potential participants who were from different practice settings and from both formats of the workshops. Regardless of whether they were currently using the DLW framework, participants were recruited to understand the comprehensive experience of DLW application. The first author contacted all workshop participants to request their participation in a one-on-one interview three months after their completion of the workshop. Guest et al. (2006) recommended that qualitative researchers interview at least 12 participants for data saturation. Considering this recommendation, the target sample size was 10–15 OTs with the possibility to modify the sample size based on saturation in answering the research question. A written consent form was reviewed and signed by the participants once they agreed to the interview.

Data Collection

The first author conducted individual, semi-structured interviews with each participant via the videoconference platform Zoom, and the interview was designed to take 40–60 minutes. If the internet connection was unstable or if the participant could not access the internet, the participant was interviewed by telephone. The interview guide was developed prior to the interviews by the first author and verified by the research team to explore the individual's experience with DLW application in practice during and after workshop participation. The primary focus was on the benefits, facilitators, and challenges of its use in practice. It included 15 open-ended questions on the following three topics areas: (a) how respondents used the DLW framework with their clients; (b) some benefits/challenges of using the DLW framework with clients; and (c) the benefits of using the DLW framework as an OT.

Data Analysis

The data were analyzed using a six-step inductive thematic analysis approach: becoming familiar with the data, developing codes, creating themes, reviewing themes, defining themes, and writing the results (Braun & Clarke, 2006). All interview records were transcribed, and the first author read the transcriptions several times to immerse herself in the data. Then, the first author identified codes in both large and small chunks of the data, which were relevant to the idea of benefits, facilitators and challenges of using the DLW framework in practice. Emerging codes from new transcripts were compared to the existing codes, and similar codes were organized together to create themes. The initially identified themes were reviewed by all authors to increase the trustworthiness of the findings, and the authors discussed whether the identified codes and themes were appropriate and answered the research question. The themes were then refined and finalized by the first author. Since the purpose of this study was to obtain a broad

understanding of the use of the DLW framework in practice, we did not compare participants' perspectives and experiences based on whether they used the DLW framework or not. We tried to gather responses from all participants to create themes that contain comprehensive voices from those who used or did not use the framework. Additionally, the interviewer (first author) was able to see the emotional expressions of the participants if they turned on their camera; the first author added the impression of their expressions into the reflection notes when possible.

Rigour of the Findings

While member checking is used to ensure the credibility of qualitative findings (Baillie, 2015; Merriam, 2009), it was not recommended in the interpretative description methodology to emphasize the importance of researchers' interpretation (Thorne, 2016). Rather than performing member checking, the first author summarized the ideas and wrote a reflection note for each participant, and critical decisions made during the analysis were recorded in the reflective journal to enhance the credibility of the findings (Thorne, 2016). The first author also had several discussions with members of the DLW research team regarding the process of conducting the analyses and the emerging findings (Merriam, 2009). In-depth descriptions of research methods were provided to increase the dependability of the findings (Baillie, 2015).

Use of a Multi-level Framework Influencing the Adoption of New Knowledge

While analyzing the interview transcripts, we recognized levels of factors that influence the adoption of the DLW framework in practice. Therefore, as part of the interpretive stage of analysis, we decided to incorporate a multilevel framework that accounts for the different levels of factors that influence implementation outcomes (Chaudoir et al., 2013). These levels include structural, organizational, provider (OTs), innovation (the DLW framework) and patient (client) factors. The structural level consists of factors related to the physical environment, policies, and

social and economic situations of the implementation site; the organizational-level factors include the degree to which an organization values new knowledge; the provider-level factors include the users' attitudes toward the knowledge implementation; the innovation-level factors include the benefits of implementing new knowledge; and the patient-level factors are patients' characteristics that can affect the implementation of knowledge. In addition to the levels described by Chaudoir et al. (2013), we added an unexpected factor caused by the coronavirus disease 2019 (COVID-19) outbreak.

Results

Participants' Characteristics

Eighteen occupational therapists (OTs), (in-person: n=9, online: n=9), comprising 17 females and 1 male, from different practice settings participated in the interview. The mean age of the participants was 39.56 (SD=9.95), and the mean of their years working in occupational therapy was 13.44 (SD=9.57). Fourteen participants had their masters' degree in occupational therapy, and four had a bachelor's degree in the field.

The participants' self-described practice varied, as follows: mental health (n=6), primary care (n=2), hospital (n=2), education (n=1), long-term care (n=1), ophthalmology clinic (n=1), pediatrics (n=1), accessibility (n=1), private practice (n=1), rehab unit (n=1), and veterans' centre (n=1).

Ten OTs reported they were using DLW concepts in their practice, whereas eight said that they had not applied the DLW framework since their participation in the training workshop.

Themes

The participants shared their experiences and perspectives on applying the DLW framework in their practices. Eight themes were identified according to six levels of factors that influenced the adoption of the DLW framework (Table 2).

Table 2

Identified themes under six levels of factors influencing new knowledge adoption

Factor Level	Theme
Structural	• The Environmental Factors of Practice Settings Affected DLW Applications
Organizational	• Coworkers' Support of the DLW application
Provider (OTs)	• The DLW Framework Enhanced OT Practice • Confidence in the Use of the DLW Framework Affects its Application
Innovation (the DLW framework)	• The Nature of the DLW Framework Prevented or Facilitated Its Application
Patient (client)	• DLW Concepts Promoted Clients' Healthy Occupational Engagement • Not Every Client Was Suitable for the DLW Framework
Unexpected	• Pandemic Effects on DLW Applications

Structural-level Factors

The Environmental Factors of Practice Settings Affected DLW Applications

OTs in various practice settings participated in this study, and each setting had its own practice system. Also, the availability of resources (e.g., human, time, and physical space) differed depending on their practice settings. The practice system and the available resources in each setting affected many participants' applications of the DLW framework.

OTs shared how their practice settings affected their use of the DLW framework. In situations where the practice setting was working well with the existing system, the application of new knowledge seemed to be more challenging. For example, one participant in an acute setting said, "There is a cultural expectation [among] occupational therapists that the information in the fields for those forms are completed with the information that we have all agreed on through committees." (Interviewee 10). This participant also explained that, in an acute setting where there is a rapid cycle of clients coming and going, there was little time to apply the concepts and principles from the framework. However, this feeling of a lack of time may be because this participant thought that application had to be complete, using the entire DLW framework. This participant said,

> There were questionnaires, evaluation tools, like [an] occupational imbalance questionnaire, meaningful activities, wants and needs assessment [in the DLW framework], and generally, I found that there really was not a lot of time to fit them into the process and that maybe they collect more information than is needed to get to what we need to do. (Interview 10)

Another participant in an education department who previously worked in a mental health setting said that it would be hard to apply the DLW framework in outpatient settings owing to a lack of time spent with clients. She said,

> One of the neat things about [the DLW framework] is you can apply aspects of it probably everywhere to a certain degree, but you could probably apply it more fulsomely when you have more time with a client and again when they are in their own setting and when they are not so focused on acute issues related to illness and are more focused on their wellness and moving their life forward. (Interviewee 15)

Thus, regardless of the types of practice settings, the idea that many or all aspects of the DLW framework should be used in practice may have led participants to think that there is not enough time to use this framework.

Similarly, participants noted that some settings were less conducive for applying the DLW framework because of time restrictions. For example, another OT also found that it was difficult to apply the framework in the inpatient setting because length of stays were generally quite short. This participant stated,

> I think part of the challenge that I have is that I am an inpatient therapist, and patients are maybe with me for a very short period of time. Sometimes I have patients that are literally there for 48 hours. (Interviewee 11)

This participant's concern with having enough time may be because she feels she does not know how the DLW framework can be applied in an inpatient setting where there is quick patient turnaround. She continued, "You know what will be helpful are maybe some examples of other inpatient [occupational] therapists, and I think that is the key" (Interviewee 11).

In addition, the available physical space where clients could participate in various activities in a practice setting affected OTs' DLW application in practice. Some practice settings were well equipped to allow clients to engage in a wide range of activities, such as gardening and group exercise, during their stay at the institution or facility, enabling OTs to incorporate the DLW concepts by supporting clients' engagement in different dimensions of experiences. A participant who used the DLW framework in a veterans' centre, said,

> I think it is the facility that I work in [that enables the application of DLW]. I mean . . . they live here, and there are so many resources available to them. I think that really helps, and not looking outside of this building necessarily for activities as we just have such a huge recreational therapy department, creative arts therapy. (Interviewee 5)

Insufficient physical space in practice settings negatively affected DLW application. One participant working in a mental health setting who did not use the DLW framework reported her clinical practice setting lacked space for group programs, which was how she wanted to use the DLW framework with her clients. She said, "if we were to say we want to do a group on this, that would be a challenge because we have very limited space" (Interviewee 18).

The availability of human resources also affected DLW application. The presence or absence of someone who could help with the application of DLW concepts in treatment affected the use of the DLW framework. For example, if a client who is not mobile without assistance wants to go outside to engage in some enjoyable activities, such as gardening or going to see a movie, there needs to be a person who can help the client get outside and assist them in those activities. One participant shared her perspectives on the lack of human resources in using the DLW framework in her practice, which has worsened owing to the physical restrictions put in place during the COVID-19 pandemic:

> Inpatients, or unless they have involved family members, are very isolated. I would probably say I would not be surprised if I talk about this with them, [they] would say, "I would like to get out in the garden." The problem right now, and the problem long-standing, is who is going to do that? The patient is immobile. They have no ability to go anywhere. For the people who have involved families, then I am going to say it is easier because they have families who will take them to birthdays or take them to the park; but there is a large of number of patients that we have [who] have never had social support. (Interviewee 11)

Another participant mentioned staffing issues in long-term care (LTC) settings that prevented her from incorporating the DLW concepts in her LTC practice. Health-care workers are busy taking care of the basic needs of clients, and thus, incorporating the DLW framework in their care would be challenging and considered an additional burden. This participant said,

> A big challenge is, like, staffing issues. Sometimes when it gets really busy, staff just doesn't have time to . . . kind of talk about their day, and then go to another resident. . . a lot of [frontline staff's] main focus is just making sure the resident is like well-fed, they're like clean, like that's kind of their main concern. So a lot of these considerations [regarding the DLW framework] just kind of get pushed aside too, as like an extra additional thing. (Interviewee 13)

Another participant said that, thanks to the presence of student OTs, she was able to collaborate with them to apply the DLW framework:

> I was having a student at the same time [who] did the workshop. I talked with the student about [DLW] and worked with [the student] to see how we could incorporate it into an initial assessment that [clients] had, and how [we] could frame the treatment around using

> the Do-Live-Well framework. It was the both of us working together on how to use it. (Interviewee 3)

Another participant, who had not previously used the DLW framework, presented her willingness to do so in the future with her students. She said, "Having students helps because you can maybe free up a little bit, and you can be more creative or try things out together [when using the DLW framework]" (Interviewee 14). Having a collaborator and someone with available time was helpful for this OT to incorporate the framework into practice.

Organization-Level Factors

Coworkers' Support of the DLW application

As an organization-level factor, it was important for participants to have the support of their coworkers in using the DLW framework and putting new knowledge into practice. Some participants said their team members were supportive of their use of the framework because they respected their colleagues' work and understood the importance of occupational therapy:

> I can use it because they trust me to do whatever I do in occupational therapy. They do and as long as my goals that I am talking about line up with the team, and line up with where the client wants to go or I can explain why this is important to the client. They are good with it. I have had no pushback. (Interviewee 16)

On the other hand, if coworkers are not supportive or do not appreciate the DLW concepts, it might be difficult for OTs to use the DLW framework. One participant in an ophthalmology clinic said, "If the rest of my team is not looking at [clients] through that lens, it could be a little bit more challenging to implement" (Interviewee 14). Thus, coworkers' attitude toward new knowledge can affect the adoption of new frameworks in practice. However, coworker support was not the only factor that influenced the DLW application. Even with the support of one's

colleagues, there still may be other barriers to implementation. One participant said, "I work in a really supportive workplace, so I think they would absolutely support the implementation." (Interviewee 11). However, she expressed she was not yet ready to use it owing to her lack of confidence in using the DLW framework correctly. This demonstrates why it is important to understand different factors that influence framework application. Although one factor may encourage a participant to apply the DLW framework, other factors can affect their adoption of new knowledge and their decision whether to ultimately implement it.

Provider-Level Factors

The DLW Framework Enhanced OT Practice

The DLW developers hoped that OTs could use this framework to create interventions and tools that could improve their clients' health and wellness. Many participants valued the DLW framework concepts and believed using them would improve their practice regardless of whether they used the DLW framework or not. First, they valued how the DLW framework emphasizes the importance of occupation in people's health and well-being, which is the core value of occupational therapy. Regarding the DLW's emphasis on the importance of occupation, one participant who stated they did not use the DLW framework said, "I think it [DLW] just really grounds us in the benefits of occupation [and] just gets back to what occupational therapy is about, which is the benefits of meaningful occupation" (Interviewee 1).

Furthermore, participants identified that the DLW provides a new way to talk and think about occupation, occupational therapy, and what OTs can do to support their clients' health and wellness. By introducing and explaining the different types of occupations described in DLW to their clients, OTs helped their clients better understand what occupations are. One participant

observed, “It was sort of like a fresh way to approach daily occupations with my clients and ask questions” (Interviewee 4).

Some participants especially valued the client-centredness of the DLW framework. By empowering the client to identify and choose the occupation that could better promote their health, the DLW framework appeared to increase clients’ voices in terms of priority setting. One participant who did not use the DLW framework said,

> It is really about being client-centred like we originally professed to be, and finding out what is important from a client’s point of view and worrying less about what a physician is looking for in particular or what we think we are looking for, but looking at what [our clients are looking for] in terms of [their] health and wellness. (Interviewee 10)

Finally, the DLW framework was a tool that can be incorporated as part of a holistic approach to occupational therapy. The DLW framework emphasized not only the importance of participating in different occupations, but also social and personal support for occupational participation. These DLW concepts fit well with the whole-person perspectives of occupational therapy. One participant said,

> I think it really enables me to actually practice much more holistically. As I have said, throughout this, when my work has become so focused on a very small element, that dimension of experience, the reality is that I was not really addressing the whole person. The Do-Live-Well framework is a very concrete way of at least acknowledging the whole person and that, aside from their basic ADLs [Activities of daily living], there are many more dimensions of experiences that are equally meaningful. (Interviewee 11)

Confidence in the Use of the DLW Framework Affects its Application

Along with the belief that the DLW framework could improve their practice, participants' confidence in their knowledge of the DLW framework also influenced their application. One participant using the DLW framework reported that she used it mainly because she knew the DLW concepts well enough to translate them into the practice. She said, "I am more comfortable with the concepts and how to incorporate them into the things that we talk about with my patients." (Interviewee 3).

A participant who did not use the DLW framework said the primary reason she did not use the DLW concepts was because she was unsure if she could correctly use it. Thus, she lacked confidence in her knowledge of the DLW concepts. She said, "It is a little bit of hesitation and anxiety on my part, because I feel like I do not want to do it "wrong". I think I am probably my own biggest barrier." (Interviewee 11).

Innovation-Level Factors

The Nature of the DLW Framework Prevented or Facilitated Its Application

Some of the unique characteristics of the DLW framework seemed to affect OTs' application of the DLW framework. These characteristics include various components, being non-prescriptive, being designed for any individual, and using OT language. Participants shared their perspectives on the nature of the DLW framework that affects their application of it in practice. First, the DLW framework consists of different components, and some OTs felt it contains too much information and could be overwhelming. Thus, for OTs who did not completely understand the DLW framework (even after participating in the workshop), it would be difficult for them to apply it: "Because I do not remember all of the titles [components of the

DLW framework]… So that it is the only reason I do not think I am using the framework." (Interviewee 17).

Moreover, that the DLW framework is not prescriptive affected OTs' DLW application. Some OTs found using DLW difficult as it is conceptual rather than procedural; there are no guidelines to explain steps, making it challenging to apply in practice. One participant said,

> I think we talked about in the workshop that it's not a prescriptive thing. So, I think that is where I struggle and I was struggling in the workshop and in terms of this is not a prescribed program, there's not a set step by step way to use it. (Interviewee 4)

However, some participants valued that the DLW was designed to help anyone with any ability or any health condition at any age: "The other nice thing too is that the Do-Live-Well does not focus on ability or disability at all. It is applicable across the board" (Interviewee 11). This scope allowed OTs to adapt the concepts more efficiently in their practice: "It makes sense to apply these concepts for everyone. I think everyone can benefit from it" (Interviewee 6).

Interestingly, many participants applied the DLW concepts for themselves, family, and friends to promote their own health and wellness and their loved ones', which once again emphasized that the framework is designed for anyone. One participant said,

> I remember when I was taking the course, I was thinking about it even just in terms of my own daily life and I think it is a helpful framework for thinking about how much do you think about your own self. (Interviewee 15)

Additionally, one participant said applying the DLW framework to her own life could help persuade her clients to incorporate the DLW concepts in their daily life.

> So, I feel like as an OT, I need to have to buy in first, right? I need to be able to have the lived experience first for me to be able to tell convincingly to my client that, "Yeah, these are good for you. Why? Because I have been through it." (Interviewee 8)

Finally, language used in DLW either facilitated or hindered its application. Canadian OTs developed DLW, so words used in the DLW framework are very OT-driven; thus, it might be hard for some clients and co-workers unfamiliar with the OT language to understand the DLW concepts. Some participants shared their perspectives on the type of language used in the DLW framework. One said,

> OT jargon might come into play and it might be just considering the target population and what language I am using and describing concepts or describing approaches in a way that is understood and can then be followed through on. (Interviewee 9)

Also, OTs believed they would need to adjust the language based on the clients' level of understanding: "I think people understand those types of terms, recognizing you are going to adjust it for anybody that you are talking to" (Interviewee 14).

Client-Level Factors

DLW Concepts Promoted Clients' Healthy Occupational Engagement

Regardless of whether the participants used the DLW framework, they valued its core concepts of promoting the health and wellness of individuals. Some participants said that the DLW framework helped their clients explore different areas of experience, allowing them to reflect on activities they lack in their daily life and enabling them to participate in various occupations related to their comprehensive health and wellness. For example, a student who always used a computer to study and play games could explore a variety of non-computer-related activities by being introduced the DLW concepts, such as walking a dog and reading a book.

One participant said, “I just think [the DLW framework] gives them the most opportunities to be able to participate in the activities to improve their health and their well-being” (Interviewee 5).

In addition, the DLW framework helped ensure that clients are engaged in occupations with appropriate activity patterns. If a client had an issue in their specific occupation, the five activity patterns specified in the DLW framework allowed OTs to investigate how their clients are engaged in the occupation. One participant shared how the DLW concepts might be helpful in understanding her client’s issues with sleep:

> I think I would look into his activity patterns of the day. Look at what he’s busy with, what kind of activities kind of helps him manage his tremors, what kind of routine he has in the evening times that might lead to restlessness at night. (Interviewee 13)

Also, for clients who feel overwhelmed by their occupations, the DLW’s activity pattern concepts allowed them to reflect on whether they are engaged in their occupation in a balanced way. One participant said, “It’s about how can we make sure that you’re maximizing your time and your day and your routine so that you are healthy, happy, and you feel like you’re working towards something” (Interviewee 6).

An OT who did not use the DLW framework also valued the DLW framework because it may facilitate clients’ motivation to be involved in different activities that can be related to positive health outcomes. She said, “[the] Do Live Well framework increases [a] sense of satisfaction, levels of motivation perhaps, and [clients’] ability to actually engage in those activities as a means to recover from depressive symptoms beyond just activating” (Interviewee 18).

Not Every Client Was Suitable for the DLW Framework

However, it seemed the status of clients affected the DLW application. Participants perceived there was little room for incorporating the DLW framework for clients whose basic needs had yet to be met or who functioned at lower levels. Children or clients with cognitive impairment could also have difficulty understanding the DLW concepts: "For our clients, I think it is their ability to understand the information [that determines the usability of DLW]" (Interviewee 5). "All the examples that [DLW seems] to be giving were much more for adults. Like you lost your job, or you lost this, or this is happening. So, there was not as much concrete form of evidence [for young children]" (Interviewee 7). "For my current patients who are [at] a much lower functional level, I think it is really challenging [to use DLW]" (Interviewee 13).

As the DLW framework is client-centred, it requires clients' engagement in determining gaps in their daily activities and discussing what they want to do to improve their health and wellness. However, if the client is less motivated to participate in different activities and change their existing activity patterns, it could be difficult to incorporate the DLW concepts. One participant said,

> I think it really depends on a lot of factors but one of them is their motivation level. Some of our [clients], you can talk all you want, but if they are not willing to give up certain behavioral patterns, then you cannot really force them, right? (Interviewee 8)

Some OTs have also had conflicting ideas about whether it is appropriate to use the DLW framework for certain populations. One participant in the LTC setting said it might not be appropriate to use the DLW framework in practice for people in forensic settings because they do not have much choice and control in participating in activities. However, an OT working in a forensic psychiatric setting said DLW concepts fit very well with her practice because her clients

are often referred to her based on a lack of structure in their lives. Thus, the activity patterns gave her clients routines that promoted their health and wellness. She said, "To help them get structure in their life—help them start doing something. I think that the activity patterns fit very well with that, and then the rest of it though just kind of flows with it" (Interviewee 16).

Unexpected Factor

Pandemic Effects on DLW Applications

Since COVID-19 began to spread in Canada in late 2019, many regulations and measures have been enacted to prevent the virus from spreading further. These restrictions changed practice contexts by reducing in-person interactions. This change could have negatively affected how many OTs applied DLW. Given that the interviews were conducted in May 2020, during the first months of the pandemic, the virus-related constraints in practice, such as social distancing and movement restrictions, may have prevented OTs from adding new knowledge to their standard routines, especially when their practice was not ready to transition their OT sessions from in-person to online. One participant expressed her frustration with the situation, saying,

> I think right now with COVID, though, it is difficult because [patients] are not interacting with people as much. A lot of the groups have been cancelled. So, there is a lot more time spent in the room, which is sad to see, so I think it is hard right now to be able to implement more. (Interviewee 5)

In addition, it was not easy to apply some of the DLW concepts under the physical restrictions implemented during the pandemic. For example, "connecting with others" and "contributing to society" are most conducive to in-person environments, so it was difficult to participate in those activities with social distancing measures in place. One participant said,

> But right now, it is going to be very difficult because of COVID. They will not be able to go out and do whatever they want to. If their goal, say, is to connect with their community, when, say, if they are living in a group home, they are in lockdown, they cannot go out, then there is no point. (Interviewee 8)

On top of that, owing to the severity of COVID-19, some OTs were struggling with increased stress and responsibilities. Thus, the timing was not ideal to implement new ideas in practice. One participant said, "The fear of a novel virus and how am I going to keep myself and my family safe, it was such a huge cognitive load that I do not and literally could not process much of anything else" (Interviewee 11).

Another participant said that because of COVID-19, her role changed from being a practicing clinician to educating clinicians. As she was not directly working with clients, she was not able to use the DLW framework. She said,

> I have not been able to use it directly with individual clients and that is because of COVID right now. I am hopeful that I would be able to apply it or at least use it to inform my practice if not using it in a full out implementation way. (Interviewee 12)

However, some OTs found that COVID-19 facilitated their use of the DLW framework in their practice. They used the DLW framework to identify gaps in clients' daily occupations in this isolated situation. One participant shared her ideas on how DLW was helpful in this pandemic:

> I didn't use it pre-COVID only because I hadn't had a chance to kind of incorporate it really into my practice at that point. But I found with COVID a lot of people were isolated obviously. And that just particularly going through the dimensions of experience

> with the clients was really helpful at trying to find some gaps maybe in where they might be struggling in terms of their day-to-day health and occupations. (Interviewee 5)

Further, one OT developed a quick COVID-19 resource guideline based on the DLW framework:

> I use aspects of it. I use the interest checklist. I have used sort of the meaningful activity survey, especially now I created a quick resource guide for COVID. So again, kind of using elements of the tools that are within the framework for people to kind of reassess or really reflect on how the current pandemic has changed their engagement in occupation. (Interviewee 2)

Discussion

This qualitative study explored OTs' experience and perspectives on DLW application in practice after participating in a DLW workshop by incorporating the different levels of factors influencing the DLW adoption. Each level allowed us to understand a wide range factors that facilitated or hindered participants' incorporation of the DLW framework. Qualitative data analyses resulted in eight themes concerning some benefits, facilitators, and challenges of the DLW application in OT practice. These results provide insight into what aspects of the DLW framework worked well or did not work well and what factors affected their DLW application, which may contribute to OT practice in applying the health promotion approach. Overall, the findings support the DLW framework's value in OT practice and provide the DLW research team essential insight for promoting its use.

OTs' ultimate goal is to promote people's overall health, wellness, and quality of life by encouraging them to participate in a variety of meaningful occupations (Hammell, 2017). This

idea fits well with the core concept of the DLW framework: improving people's health and wellness by exploring potential benefits of experiences derived from an occupational lens, with optimal activity patterns. Some participants of this study may have believed the DLW framework is helpful in their practice because of this close link to the core theory of OT; the DLW framework allows them to support their clients' healthy occupational participation by identifying gaps in their daily life and exploring different dimensions of experience that could be related to positive health and wellness. The authors believe the core concepts of the DLW framework would allow OTs to reflect in-depth on their roles as health promoters. Tucker et al. (2014) discussed the four aspects explaining the similarities between OT practice and health promotion: client-centred practice, holistic approach, environmental focus, and population health. Our findings indicated that the DLW framework has a close link to these four aspects. Participants valued that the DLW framework is client-centre, holistic, and designed for people of any age and ability. Furthermore, the social force of the framework allowed OTs to identify the environmental factors influencing occupational participation. Thus, the DLW framework may guide OTs' use of health promotion concepts in their practice.

Because of their practice environment, OTs experienced some challenges in applying the different DLW concepts in their practice. Lack of time, treatment space, and human resources prevented them from incorporating the framework in their OT practice, such as exploring different dimensions of experience within a restricted time and having limited physical space that hindered the way they wanted to use the DLW framework. Similarly, cross-sectional research regarding facilitators and barriers of occupation-based practice also identified a lack of space and time as a barrier to occupation-based practice (Lloyd et al., 2019). Thus, while using occupation to promote clients' overall health is a core tenet of OT practice, and OTs implement occupation-

based practice (Wilcock & Hocking, 2015), they may confront environmental restrictions based on their practice settings.

The DLW framework was designed to work for anyone with any ability at any age, and it is not prescriptive, allowing for broader application, which OTs from this study valued. However, as the DLW framework does not provide a specific step-by-step guideline for a specific population, some participants experienced difficulty conceptualizing and applying the DLW concepts in practice. OTs may need to customize the DLW application according to their clients' needs; they may feel uncomfortable using the concepts about which they feel uncertain. Thus, we believe there should be ongoing learning opportunities for OTs who seek support in using the DLW framework, in addition to increased focus on application during any workshops designed to support OTs' understanding of the framework. There are different ways to provide ongoing training, such as supervision and refresher training (O'Donovan et al., 2018). The DLW team would encourage leaners to contact DLW experts. The DLW team could also offer regular meetings with workshop participants so that people who have been using the DLW framework can share their experiences and ideas with those who have not had a chance to use the DLW framework yet. We understood that participants wanted to learn about application examples in their practice settings. Thus, learning specific examples of how an OT uses the DLW framework in a particular practice setting would allow therapists to better understand how to apply its concepts in their own practice. In addition, OTs do not need to use all concepts of the DLW framework, but this message might not have been well translated to the participants during the workshops. Thus, future educational opportunities would make sure to emphasize the flexibility in using the DLW framework in practice.

OTs acknowledge different occupation-based theories, frameworks, or models so that they can choose one that is appropriate for their clients (Cole & Tufano, 2007; Duncan, 2020). Incorporating a framework into an OT practice can improve practice by supporting clinical reasoning (Boniface & Seymour, 2011). Study participants supported this idea; they believed the DLW framework can improve their OT practice as an added tool. However, there is not a single universal approach for every client, and OTs need to choose appropriate approaches. Thus, we believe the DLW would function as a new tool for OTs to support their clients' occupational engagement and promote better health.

The literature specified there is no single factor that influences learners to incorporate their knowledge into practice (Grol et al., 2007), and we have demonstrated the importance of a multi-level framework that considers different factors influencing knowledge implementation. For example, one participant was aware of the value of the DLW framework but could not use it because she lacked confidence in her knowledge of the framework. Another participant used the DLW framework because she believed it would improve her clinical practice despite finding the OT jargon used in the framework challenging. This study demonstrated that different levels of factors influence the adoption of new knowledge. Therefore, future educators will need to identify facilitators and challenges at various levels to promote learners' application of new knowledge in practice.

Limitation

Although researchers in this study were able to consider the client-level factors influencing the DLW adoption by understanding the OTs' experiences and perspectives, we did not directly explore clients' experience of the DLW framework. Learning about clients' experiences would take time, but understanding them would be key to evaluating the success of DLW framework in

application (Kirkpatrick & Kirkpatrick, 2006). Therefore, future researchers could evaluate clients' outcomes and examine their experiences in using the DLW framework.

Some participants were not able to use the DLW framework in practice because of practice changes and stress caused by the COVID-19 pandemic beyond our control. Had COVID-19 not occurred, more OTs may have used the DLW framework in practice. Therefore, after the COVID-19 situation has stabilized, follow-up studies will be needed to ask about participants' experiences with the DLW applications.

Conclusion

The application of DLW has some potential challenges, but we believe it would benefit OT practice by emphasizing the importance of occupation for people's health and wellness and benefit OTs by better explaining what OTs do. The DLW team should support OTs' DLW application by providing continuous support after educational workshops, such as a regular meeting with workshop participants to share their experiences of using the DLW framework

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Chapter 5: Discussion

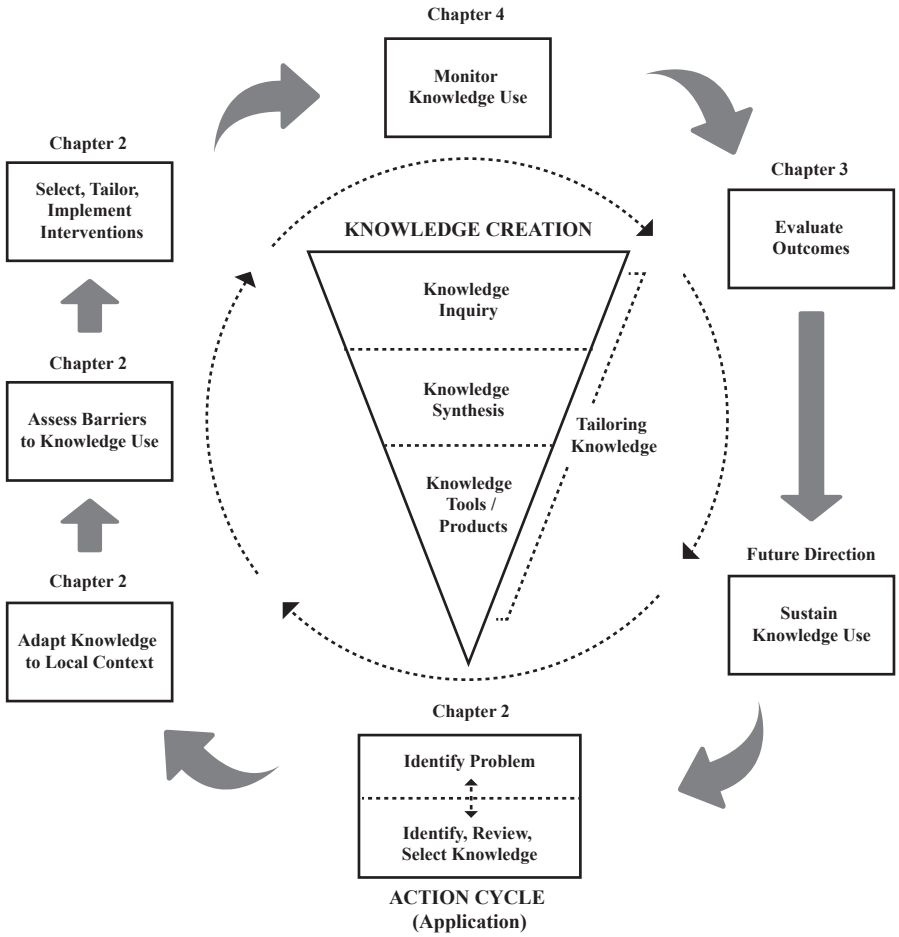
The Do-Live-Well (DLW) educational research project draws on implementation science to facilitate occupational therapists' (OTs') application of the DLW concepts in their practice. The project encompassed three major studies: Development of the online and in-person DLW workshops for OTs (Chapter 2); Evaluation of the online and in-person workshops (Chapter 3); and Understanding OTs' experiences and perspectives on using the DLW framework after the workshops (Chapter 4).

In implementation science, it is important to incorporate theories to guide the process of knowledge translation. Theories can provide justification for decision-making during the development of educational interventions, explain why or how the intervention worked well, and provide future research directions (Colquhoun et al., 2010). In the DLW educational project, the knowledge-to-action (KTA) framework (Graham et al., 2006) was chosen to guide the knowledge translation process because this framework explains the detailed processes of both knowledge creation and implementation (Figure 1).

In this final chapter, I focus on an overview of how the DLW education project unfolded by exploring the key processes of knowledge translation described in the KTA framework. The key findings and knowledge gained through each phase of the project are discussed and finally, recommendations for future research to inform continuing education in occupational therapy and within other health professions are provided.

Figure 1

Knowledge-to-Action Cycle



Note. The publisher approved the re-use of this figure of the original article (Graham et al., 2006). The chapters corresponding to each phase of action cycle are presented.

Knowledge Creation Process

Knowledge creation is the first section of this KTA model (Graham et al., 2006). This knowledge creation section aided in the identification of the need for the DLW framework, an occupation-focused health promotion approach. At the 1st International Conference on Health Promotion, the World Health Organization (World Health Organization, 1986) defined health promotion as below:

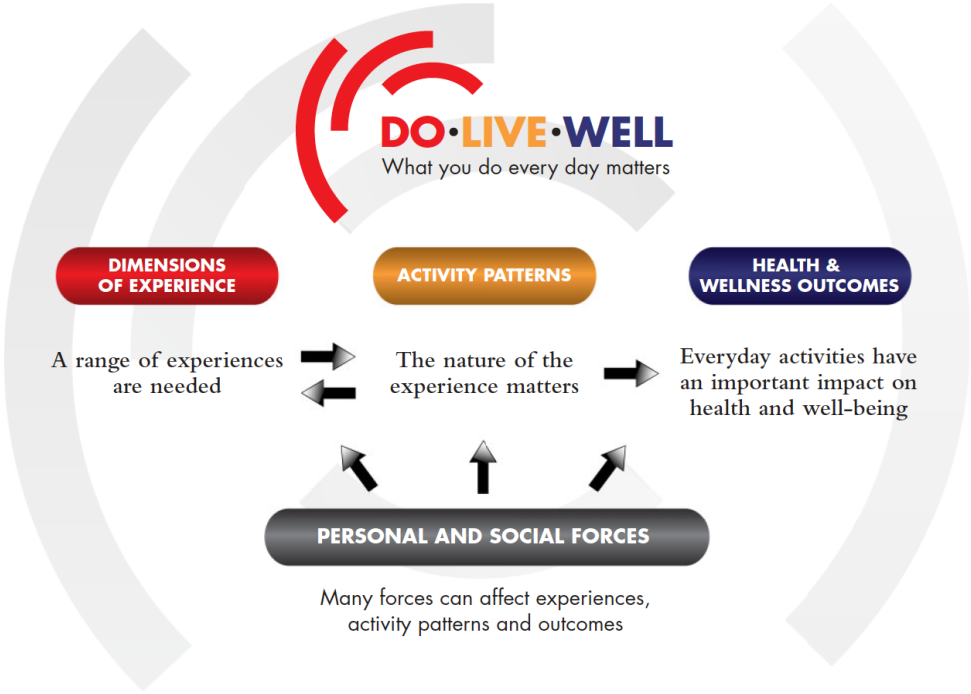
> Health promotion is the process of enabling people to increase control over and improve their health. To reach a state of complete physical, mental, and social well-being, an individual or group must be able to identify and to realize their aspiration, to satisfy their needs, and to change or cope with the environment.

Recognizing the importance of health promotion for improving individuals' health and wellness, Canadian health organizations have taken different approaches to health promotion. For example, the Public Health Agency of Canada developed the physical activity guidelines (Government of Canada, 2004) and the Canada Food Guide to support Canadians in making informed healthy lifestyle choices. Although the focus of these health promotion approaches has been broadened, most of the focus is still on healthy eating, physical activity, regular health checkups, and smoking cessation (Nettleton, 2021), with little emphasis on the significant impact of occupational engagement on the health and well-being of individuals and communities (Wilcock & Hocking, 2015). As a result, an occupation-focused framework was needed to facilitate the health and well-being for Canadians of all ages and abilities. Thus, the DLW team developed the DLW framework explaining how participation in a range of experiences, optimal activity patterns, and sufficient personal and social support can have a positive impact on a wide range of health and wellness outcomes (Moll et al., 2015; see Figure 2). The DLW framework

focuses on how to promote health and wellness through positive occupational engagement. The process of knowledge creation regarding the DLW framework was undertaken over several years, and articles explaining the development process and perspectives that have been incorporated in the DLW framework can be found elsewhere (Gewurtz et al., 2016b; Moll et al., 2012; Moll et al., 2013, 2015). This component of the KTA framework was not part of the research presented in this thesis but forms the background and history of the DWL framework.

Figure 2

Do-Live-Well Framework



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Action Cycle

The second section of the KTA framework is the action cycle. There are different phases in the action cycle of the KTA framework, including identifying problems to be changed and resolved, adapting the knowledge to the local context, assessing barriers to knowledge use, selecting appropriate implementation interventions, monitoring knowledge use, evaluating outcomes, and sustaining the use of knowledge (Graham et al., 2006). Here I provide an overview of the DLW education project described in this thesis by situating it within the phases of the action cycle.

Identify Problems and Adapt Knowledge to Local Context

In Chapter 2, the knowledge dissemination status of the DLW framework was described. The DLW framework is relatively new and has not yet been widely used in Canadian occupational therapy practice; however, since the initial publication about its development in 2015, occupational therapists (OTs) have requested more learning opportunities to support its implementation. The DLW team made an effort to disseminate information on the DLW framework by offering seminars for mental health practice settings in Ontario and Quebec, and through the development of the website: dolivewell.ca. However, practitioners in other practice settings or in other regional areas lacked sufficient learning opportunities. To address this gap, I developed online and in-person educational workshops regarding the DLW framework in collaboration with DLW team. In addition, I compared the effectiveness of the online and in-person DLW workshops after delivering these two educational methods to Canadian OTs.

Assess Barriers to Knowledge Use

When developing an educational program, it is important to understand learners' training needs (Brajtman et al., 2007). Thus, before developing the DLW workshops, I explored how OTs were using the DLW framework in practice and learned about challenges they faced in applying it in order to identify further training needs regarding the DLW framework. In Chapter 2 of this thesis dissertation, results of interviews with four Canadian OTs who had used the DLW framework in mental health and primary care settings were presented. By understanding users' perspectives and experiences of using the DLW framework in their practice, we found that although the users valued the occupation-focused DLW framework for improving clients' health and wellness, they wanted to learn more about how to apply this conceptual framework in their practice contexts. Understanding OTs' experiences of using the DLW framework in practice allowed me to think about how to develop an educational intervention that emphasized learners' needs for more guidance about DLW applications.

Select, Tailor, and Implement Interventions

In Chapter 2, I demonstrated how I incorporated findings from the interviews with OTs into the DLW workshop development and explained the overall process of developing the evidence- and theory-based workshops. Five case scenario videos were created in different practice settings, including mental health, pediatrics, in-patient and out-patient primary care settings, so that learners could have opportunities to incorporate the DLW concepts into real-life cases. Furthermore, to create a learner-centred learning environment, I incorporated the eight key principles of the problem-based learning (PBL) approach (Gewurtz et al., 2016a) into the way knowledge regarding the DLW framework was delivered. Next, the DLW workshop content was developed with iterative discussions with the DLW research team, creating PowerPoint slides

with written scripts to ensure the same content was delivered in both the online and in-person workshops. Finally, I developed the online workshop website using Articulate 360 and WordPress and tested it for its usability. In February 2020, the online and in-person workshops were delivered to Canadian OTs.

Incorporating learning and teaching theories in the development of educational methods is the foundation of the development of educational interventions for health professionals (Aliakbari et al., 2015). Through the work presented in Chapter 2, it became clear how important it is to integrate these theories into the development of educational workshops. Applying a PBL approach to delivering knowledge about the DLW framework enabled me to create a learner-centred environment that facilitates learners' motivation and active engagement in their learning process. In addition, the process used to develop the DLW workshops modelled how to incorporate the fundamental principles of PBL into different educational interventions, online and in-person learning, which has not received sufficient focus in the OT educational literature. Thus, the detailed description of applying the PBL approach to online and in-person workshops may help OT educators develop theory-based educational curricula.

Evaluate Outcomes

In Chapter 3, the effectiveness of the online workshop compared to the traditional in-person workshop was presented. I used the first three levels of Kirkpatrick and Kirkpatrick's (2016) training evaluation model to evaluate the outcomes of the workshops, including reaction (satisfaction with learning), learning (knowledge and skills), and behaviour (intention to use new knowledge). The outcomes included knowledge, factors influencing adoption of the DLW framework, satisfaction with the workshop, and usage of the framework in practice. The researchers also explored participants' experiences and perspectives on both online and in-person

learning formats. We found there was no difference in knowledge levels between the two groups, which was similar to the findings from a review of comparing the effectiveness of online and in-person learning across different health professions (Vaona et al., 2018). However, this review did not report learners' satisfaction with the educational method (Vaona et al., 2018), and the DLW educational research found that the in-person group reported greater satisfaction with the workshop. Participants shared the benefits and challenges of each learning format, but they valued in-person interactions in both learning formats. Interactivity in online learning is defined as "either asynchronous or synchronous opportunities for communication between student-student, student-instructor, and student-content" (Croxton, 2014, p.315). The in-person group with synchronous interactivity mentioned that meeting peers and instructors in-person was a great benefit. They especially appreciated that they were able to get to know other practitioners in different settings, hear about how other OTs would apply the DLW framework in their settings, and receive immediate feedback from their peers and instructors in in-person learning. In contrast, the online learning with asynchronous interactivity participants noted that they missed opportunities for in-person interactions. Although the online workshop provided an opportunity for learners to interact with peers and instructors via asynchronous discussions, this may be different from the interactions that occur in a traditional face-to-face classroom. In the literature, instructors' verbal and non-verbal immediacy behaviours, such as humor, physical proximity, and eye contact, can close the psychological distance between learners and instructors, leading to better learning experiences (Christophel, 1990; Kelley & Gorham, 1988). According to a study comparing the effectiveness of text-based asynchronous online lectures and synchronous lectures using web-conferences, approximately 73% of learners preferred online learning with synchronous web conferences (Skylar, 2009). Thus, adding a synchronous

interaction to online learning may allow learners to engage more in their learning and improve their learning experiences.

Monitoring Knowledge Use

In chapter 4, workshop participants' experiences and perspectives on the application of the DLW framework after the workshop were explored. Eighteen OTs who participated in the online and in-person workshops were interviewed, regardless of their current use of the DLW framework. Since there were levels of factors influencing the participants' DLW application in practice, a multilevel framework to gain a comprehensive understanding of these factors was adopted, which included structural, organizational, provider, client, and innovation levels (Chaudoir et al., 2013). A factor that was not included in these levels was added, since we identified an "unexpected" factor. The participants believed the application of the DLW framework could improve their OT practice by focusing on the importance of occupations for better health and wellness. Additionally, the DLW framework might not be applicable in certain situations, depending on the client's status and availability of resources in a given setting.

In Chapter 4, it became clear that to fully understand the reasons for using or not using the DLW framework, it was important to consider multiple levels of factors. For example, even if OTs' colleagues support their use of new knowledge in practice at an organizational level, they might not use the DLW framework successfully if they lack confidence in their knowledge of it. This finding suggests that implementation researchers should think about ways to promote learners' use of knowledge by considering factors that affect it at various levels.

Future Directions for Online Education for Health Professionals:

Continuous Monitoring of Knowledge Use

After delivering new content, it is important to continuously monitor learners' use of knowledge (Graham et al., 2006). While I conducted follow-up evaluations to determine participants' use and experience with the DLW framework in practice after the workshop, I could not continually monitor how the participants had been using their knowledge application during the 3-month follow-up period. I could have asked learners to create their implementation goal in 3 months and provided a checklist to record their application and any issues that arose while using the DLW framework. Then, I could have had a regular check-in with the learners to monitor their progress of using the DLW framework in practice. These strategies may have enabled me to understand how well the DLW framework was disseminated within OT practice and could be used as an indicator of whether another intervention is required (Graham et al., 2006).

Sustain Knowledge Use

OTs valued individual support after professional development training (Day et al., 2021), and thus, as a future step of disseminating information about the DLW framework via workshops, it may be worthwhile to consider how best to support learners' use of the DLW framework in practice. New knowledge is disseminated over time via communications within a social system (Rogers, 2003). Educators need to understand that learners adopt knowledge at different rates, and that new knowledge needs an effective communication channel to be widely distributed. Rogers (2003) articulated four types of adopters in a knowledge dissemination process: early adopters, early majorities, late majorities, and laggards. In general, the role of early adopters is key in knowledge translation. They provide potential adopters with advice as

opinion leaders in a social system and share their subjective evaluation of new knowledge with peers (Rogers, 2003). They may share their own stories of how they apply the knowledge, discussing the challenges and benefits of its use with their near peers. By hearing about the early adopters' experiences, the potential adopters may be motivated to use the new knowledge and solve any issues regarding its use by consulting with the early adopters. Thus, I believe it is important to provide an effective communication channel where learners at different adoption rates can share their application experiences.

A plausible communication channel related to application of the DLW framework could be social media. Using social media would allow learners to reach out to each other and share various perspectives on the use of the DLW framework in practice (Sandars et al., 2020). Learners who participated in the DLW workshop could be invited to social media groups (e.g., Facebook, Microsoft Teams, Slack). In the social media groups, early adopters could be asked to post their stories of using the DLW framework on social media with their practice information, such as their setting and primary population. We would need to keep in mind that this would be a considerable time commitment. Thus, there should be appropriate incentives or rewards for participating. One strategy to express appreciation for their efforts would be to add their names to a contributor/opinion leader section on the DLW website. Additionally, instructors' constructive feedback on posts or questions could facilitate learners' engagement in social media (Sandars et al., 2020).

Flipped Classroom Approach in Online Learning

Online learning has become a valuable learning format, allowing people from all over the world to participate in learning without geographical restrictions. Health care professionals have been increasingly engaged in online learning. The COVID-19 pandemic has transformed

educational delivery methods and created a greater demand for online learning (Dhawan, 2020), and educators have been asked to develop learning environments that provide learners with the best learning experience possible while ensuring students' safety.

Through a study comparing the effectiveness of the online and in-person learning for OTs regarding the DLW framework, I discovered that there was no difference in the knowledge obtained via online learning versus in-person learning, but that participants in the in-person workshop were more satisfied with their learning environment compared to the participants in the online workshop. Participants in both online and in-person learning formats valued the importance of synchronous interactions with peers and instructors. The online learning format with asynchronous discussions might not have been enough for learners to have the same level of interaction as learners in the in-person learning format, despite our attempts to make the two workshop formats as similar as possible.

A recent quantitative survey of 108 OTs' preferences in continuing education reported that OTs preferred education combined with online and in-person learning over solely online or in-person learning (Day et al., 2021). Since the sample in this study were clinicians (Day et al., 2021), the findings of this survey are even more generalizable in continuing education for OTs. Thus, considering the educational preference of OTs and the emphasis on synchronous interactions from our study, educators could think about how to add synchronous features of in-person learning into the online learning environment. One possible way could be incorporating a flipped classroom approach and synchronous interaction into our online education. Flipped classrooms are widely used in different educational fields. The concept of flipped classroom has been used since 2000 when Lage, Platt, and Treglia articulated it as an "inverted classroom" in which learning activities that traditionally occurred in the classroom now take place outside the

classroom or vice versa (Lage et al., 2000). In a flipped learning environment, learners are first exposed to new knowledge through videos, readings, or other learning materials that encourage self-directed learning. Then, learners learn more deeply about the new knowledge and how to apply the knowledge and build up critical-thinking skills in the classroom through individual or group work (Tobin & Honeycutt, 2017). A systematic review on the effectiveness of a flipped classroom in health professionals' education reported that it significantly improved learners' knowledge ($p < 0.001$) compared to traditional learning, and that learners preferred the flipped classroom over traditional learning environments (Hew & Lo, 2018). In addition, using quizzes before the start of learning in the classroom further enhanced learners' knowledge acquisition (Hew & Lo, 2018).

We could incorporate the concept of flipped classrooms into future DLW online learning. To be specific, future DLW online education might encourage learners to watch lecture videos and case interview videos individually and asynchronously. Useful learning materials, such as DLW worksheets and lecture slides, could be shared with learners before they start learning. Then the learners would be invited to synchronous video conferences where learners would engage with instructors, peers, and learning materials in real time from their own locations. They would take brief quizzes about the content of the lecture, and then instructors would review the content that learners watched in the videos. Learners would be divided into small groups in breakout rooms to answer discussion questions about the case scenario they had chosen. During the synchronous virtual meeting, learners would have a chance to practice DLW applications using the provided DLW worksheets that they can use with their clients. Also, learners would be invited to freely ask any questions relevant to the DLW framework. Instructors may also collect questions from learners who were not able to attend and respond to the questions during the

virtual real-time conferences. To increase interactivity, learners would be encouraged to ask questions or answer the instructors' questions by using chat and poll functions (Luke, 2021). After the synchronous online class, ongoing discussion between the instructor and the learners could take place in the asynchronous online discussion forum. Instructors would leave answers or comments on the discussion, and peers would be welcomed to leave any additional feedback too. As social presence is an important indicator of success in online learning (Hostetter, 2013), opportunities for regular interpersonal interactions with peers and instructors might lead to higher satisfaction with their learning, eventually improving learning outcomes (Swan et al., 2008).

Future Research on Online Education

Because of the COVID-19 pandemic, instructors have been asked to provide online learning as a safer way of teaching. This radical change to online education can place an additional burden on instructors; instructors are concerned about their increased workload, their technical skills, and the accessibility of online education, and they often feel isolated in online teaching settings (Wickersham & McElhany, 2010). Although there have been efforts to better understand learners' experiences of engaging in online learning, there is a lack of research into instructors' perspectives (Regan et al., 2012). In our study we did not explore the instructors' perspectives and experiences in participating in the online versus in-person formats of the DLW workshops; however, this is an area that could be further investigated. Understanding instructors' perspectives on the challenges and benefits of online education may urge educational institutions and departments to help educators overcome these challenges. Thus, future research on educators' experiences of teaching online will be required for creating and delivering better online learning environments for both learners and instructors.

Furthermore, I used the first three components of the training evaluation model by Kirkpatrick and Kirkpatrick (2016) to evaluate the outcomes of the workshops. However, the last component, "Results", which is the extent to which the use of the DLW framework affects clients' health and wellness outcomes, has not been evaluated in this DLW educational project. As the DLW framework is not a standardized intervention program, it may not be easy to measure the outcomes of its use. However, it may be feasible to conduct a follow-up case study with workshop participants and their clients. This study could support understanding of the effects of the DLW application from the perspective of both workshop participants (occupational therapists) and for their clients, by asking clients about the impact of the DLW framework on their health and well-being. In addition, future researchers may use the fourth level of the training evaluation by conducting a pre-post assessment that measures participants' health and well-being outcomes after attending a group intervention that incorporates the DLW concepts.

Conclusion

The DLW framework is a health promotion approach that may help OTs with occupation-focused practice, and the requests for training opportunities regarding this relatively new framework was evident. In this chapter, I discussed the process of translating knowledge regarding the DLW framework for OTs by using the concepts of the KTA cycle. This DLW education project will contribute to health professionals' education by describing the process of developing educational workshops, reporting the effectiveness of online learning compared to traditional in-person learning, and understanding how learners experienced their learning formats and how they applied the new knowledge in practice. Social media may be a feasible strategy to keep connected with learners after delivering knowledge so they can sustain or be motivated to use the new knowledge. Additionally, incorporating the concept of a flipped classroom approach

in online learning may increase learners' satisfaction. Finally, there is a need for future research on understanding educators' experiences and perspectives with online learning in an effort to eventually improve online learning environments.

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