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Abstract

Debriefing for Meaningful Learning (DML) is a method of debriefing grounded in the theory of reflection used following a simulation or clinical learning experience to engage participants in an interactive dialogue aimed at examining and evaluating their thinking and decision-making processes. With increasing adoption of DML worldwide, a sustainable training program for nurse educators is needed. Attending conferences and workshops that provide training is challenging for many nurse educators because of time and cost constraints. One promising solution is the train-the-trainer (TTT) model. In this article, the development and implementation of a TTT model of DML debriefer training, adaptable to both academic and clinical nursing professional development, is described.

Introduction

Training academic nurse educators to teach students or clinical nurse educators to teach new to practice and seasoned nurses is challenging. Regardless of the environment, nurses who are also teachers in academic or practice settings require training and ongoing development in active learning methods in addition to continuing education to maintain their clinical expertise. In academic settings, nurses commonly acquire training in new pedagogical methods through receiving instruction at conferences and workshops, reading the literature, or watching colleagues (Cheng et al., 2015). However, attending conferences and workshops can be challenging for nurse educators because of time and cost constraints (Cheng et al., 2017; King et al., 2021; Vázquez-Calatayud et al., 2021). Moreover, although many workshops and conferences are available, they lack follow-up and feedback on debriefing performance (Cheng et al., 2017). Many nurse educators rely on on-the-job training (OJT). Although clinical nurse educators report heavy use of OJT, Fritz (2018) identified unrealistic expectations, role ambiguity, poor orientation, lack of mentoring, and inadequate knowledge as key barriers in these roles.

Despite these challenges, there is a dire need for nurses who are equipped to navigate complex care settings in an uncertain post-pandemic environment. Simulation is one educational method that has been increasingly used by nurse educators for continuing education in practice settings and to help prepare prelicensure students for entry into practice. Debriefing, the final phase of each simulation-based experience (SBE), focuses on reflective thinking processes and feedback to improve future performance (International Association for Clinical Simulation and Learning [INACSL] Standards Committee, 2021a). Nurse educators require debriefing training to engage both students and practicing nurses in reflective thinking and ensure they develop and maintain the complex higher reasoning skills required for thinking like a nurse. However, they often do not receive this training (Fey & Jenkins, 2015).

Debriefing for Meaningful Learning (DML) is a method of debriefing grounded in the theory of reflection. It is used following a simulation or clinical learning experience to engage participants in an interactive dialogue aimed at examining and evaluating their thinking and decision-making processes (Dreifuerst et al., 2020). To date, training in the use of DML has commonly been provided by a handful of DML experts, including the developer, because of the challenging nature of learning and implementing this debriefing method without appropriate training and feedback (Bradley, 2019). However, as nursing programs worldwide increasingly adopt DML for onboarding of new faculty, continuing with such a training model has become unsustainable, leading to exploration of an alternative process (Triplett et al., 2020). One promising solution to provide accessible training in DML is the train-the-trainer (TTT) model. This article describes the development and implementation of a TTT model of DML debriefer training, adaptable to both academic and clinical nursing professional development.

Train-The-Trainer Models

The TTT model, also known as training by mentorship or the ripple effect (Servey at al., 2019), has been widely acknowledged as an effective strategy for developing a sustainable group of trainers who can then train others in their respective professional settings to broaden the reach of training (Triplett et al., 2020). Similar to the "see one, do one, teach one" approach, the purpose of using a TTT model is to have experts train professionals on a defined task or topic by providing them with the knowledge and skills needed to not only understand, implement, or apply the task or topic but also train, supervise, and mentor others (Centers for Disease Control and Prevention [CDC], 2019; Poitras et al., 2021). According to the CDC (2019), TTT programs should include competent instructors who can direct participants to resources, lead discussion, and reinforce learning. Trainers should listen effectively and make observations while also supporting participants with continued and targeted follow-up.

TTT models have been used successfully across many sectors, including the health sciences for training in bioinformatics (Via et al., 2019), opioid use disorder (Gordon et al., 2020), interprofessional health care teams (Kienlin et al., 2021), and simulation (Rholdon et al., 2020). TTT models are also used wherever training is needed by many yet provided by few, which includes, but is not limited to, community organizations, private industry, and government agencies (CDC, 2019). Moreover, the TTT model has demonstrated promise as a resource-efficient method to provide clinical and educational training programs by offering ongoing support to trainees through a pyramid, or tiered approach (Peterson et al., 2017). Pyramidal training was initially developed to provide training to large groups of individuals and involves training multiple tiers of individuals (trainers/trainees) (Whalen & Henker, 1971). Training begins with an expert training tier one, followed by those in tier one providing the training to tier two. This promotes a progressive building of new skills to a larger group using limited resources (Peterson et al., 2017; Poitras et al., 2021).

Positive outcomes from TTT initiatives related to health care education include cost savings, ease, and efficiency in reaching multiple individuals with just-in-time educational opportunities, repetitive learning options, and mastery learning (Anderson & Taira, 2018; Attard Tonna & Bugeja, 2018). As a first step in transforming novices to experts, TTT models increase the collective wealth of knowledge and provide a sustainable conduit for deploying information efficiently and effectively. The goals of a TTT approach are to (1) increase content knowledge, (2) develop the skills of future trainers, and (3) build a community of competent trainers (Servey et al., 2019). To achieve this, an initial training in content knowledge is delivered to trainers that incorporates a variety of strategies, including didactic instruction, practical demonstrations, role-playing, group discussions, case studies, video presentations, and hands-on practice. This initial training by experts is then followed by instruction in training others. The opportunity to observe an expert is a critical component of this type of training because observing experts leads to consistency (Cheng et al., 2015).

Deliberate practice also supports the development of a strong mental model where learning by mimicking the expert (Ericsson, 2002) and learning by doing (Forstrønen et al., 2020) are foundational. Although there is no single best design for a TTT program, a blended learning approach combining both interactive and didactic teaching and learning while concurrently providing future trainers with printed materials, website support, and supervision has been found to achieve positive outcomes (CDC, 2019). These characteristics work well with learning to use simulation and debriefing in health care and educational environments. Debriefing training, in particular, is an iterative process that requires structure but also adaptability (Cheng et al., 2017). As individuals within the TTT model develop debriefing skills and knowledge, the goal is for them to eventually transition into the role of trainer.

Simulation Use in Academic and Clinical Environments

Health care simulation in both clinical and academic settings significantly improves patient care and outcomes (Anderson et al., 2020; Theilen et al., 2017) while being a cost-effective training modality for complex training and application of new skills contextually (Theilen et al., 2017). In situ and just-in-time training for uncommon clinical practices also improve documentation and patient outcomes (Hardy et al., 2020; Theilen et al., 2017). The increased use of simulation in both academic and clinical health care environments has led to a critical need for facilitators who can first develop and facilitate the simulation and then lead participants in an evidence-based debriefing. With increased use of simulation for nursing staff development (Donovan et al., 2021), the need for formal training in this pedagogy, including debriefing, has also increased (Kim & Yoo, 2020; Lee et al., 2020). Simulation development, facilitation, and debriefing all require training and practice (Gilbert et al., 2021; Johnson, 2020). Additionally, a structured debriefing is widely accepted as the time of the simulation experience when the most learning occurs (Lee et al., 2020; Michelet et al., 2020). To ensure consistent learning outcomes, nurse educators need training in the process of the debriefing method they are using as well as the underlying concepts and theoretical underpinnings.

Debriefing Training

The newest Healthcare Simulation Standards of Best Practice recommend that debriefing be facilitated by a person, or persons, who demonstrates competence and proficiency and is skilled in evidence-based debriefing practices (INACSL Standards Committee, 2021b) with ongoing participation in a professional development plan or program (INACSL Standards Committee, 2021a). Use of a theoretically derived and evidence-based debriefing method has led to the development of new knowledge and positive learner outcomes (Johnson, 2020; Kim & Yoo, 2020; Lee et al., 2020). As the use of simulation continues to proliferate across all aspects of academia (Smiley, 2019) and clinical health care environments (Gilbert et al., 2021), the importance of developing simulation faculty (Peterson et al., 2017) further highlights the need for training in structured, theoretical, evidence-based debriefing methods. According to Cheng et al. (2017), "The quality of debriefing and eventual impact on learning outcomes is highly dependent on the performance of the educator who facilitates the debriefing" (p. 319).

Despite guidelines recommending that simulation facilitators have formal training and competency assessment in debriefing (INACSL Standards Committee, 2021a, 2021b), few academic or practice debriefers report receiving formal training or having their competency in debriefing evaluated (Bradley, 2019; Fey & Jenkins, 2015). There are several reasons why, including the limited availability of training, the cost of training, the need for repeated use of the debriefing training to ensure muscle memory and maintained competence, and the limited availability of instruments to reliably evaluate specific debriefing behaviors (Bradley, 2019). Without ongoing faculty development, debriefers may lose their debriefing skills (Cheng et al., 2015). In fact, most debriefing assessment is focused on the debriefing experience (Cheng et al., 2015) rather than on the level of skill or development of the debriefer in using a specific debriefing method. Currently, little is known about how to best train debriefers while promoting retention of debriefing skills (Cheng et al., 2015).

Cheng et al. (2020) also acknowledge that educators have varying levels of experience when learning debriefing skills. Debriefing training may be most successful when a conceptual framework that uses observations, best practices, evidence, and expert opinion is employed (Cheng et al., 2020). Short- and long-term retention of debriefing skills can be promoted with a debriefing training such as TTT that focuses on learning to use a structured debriefing method, the development of a debriefing worksheet to use while learning the debriefing method (Robinson et al., 2020), and the assessment of skills attained (Cheng et al., 2017). Paige et al. (2015) reported that simulation facilitators demonstrated statistically significant gains in self-efficacy when debriefing independently after participating in a TTT workshop. Therefore, nurse educators' preparedness to effectively debrief may be substantially improved with TTT programs.

Development and Implementation of the DML Train-The-Trainer Model

Development and Planning

Developing the DML TTT curriculum required extensive planning. Didactic training included a 4-hour in-person workshop that (1) outlined the history of DML development, (2) reviewed the INACSL Standards Committee (2016) debriefing standards, (3) introduced/reviewed Socratic questioning, (4) provided specific details regarding how to implement DML, and (5) described how to evaluate one's own debriefing with the Debriefing for Meaningful Learning Evaluation Scale (DMLES). The curriculum and resources were also developed for an additional 2-hour training session during which trainers would learn to train others using best practices in TTT methodology (**Table 1**).

Table 1. Training Curriculum

Session title	Goals	Overview and methods of presenting content
	DML learning training	
Overview of debriefing and DML	Understand the importance of debriefing Understand the underlying principles of DML	Slide presentation of active learning, theory, and debriefing
Active learning and getting started with DML	Understand how to prepare for DML Understand the importance of using DML	Slide presentation of debriefing and DML
The process of using DML	Use the DML worksheets Learn DML method	Demonstration and practice of the components of DML Group discussion about how to use DML
Deliberate practice and planning for implementation	Understand effective techniques of DML Demonstrate DML behaviors and worksheets	Role-playing Practice DML
The process of using the DMLES	Understand how to use the DMLES	Slide presentation of how to use the DMLES
		Group discussion about how to use the DMLES Practice using the DMLES
DMLES deliberate practice	Demonstrate how to self-assess and assess others with the DMLES	Deliberate practice of implementing DML based on viewed simulation
	DML—training others	
Review DML and DMLES	Understand how to implement DML Understand how to evaluate others with the DMLES	Slide presentation reviewing active learning, theory, debriefing, and DMLES Group discussion about how to use the DMLES
How to train others	Understand how to access training materials Understand how to train peers	Demonstration of resources website Slide presentation reviewing how to train other

DMLES feedback	Demonstrate how to use DMLES Demonstrate how to give oral/written feedback to peers	Demonstrate how to provide feedback Deliberate practice of providing feedback based on viewed simulation

Note. DML = Debriefing for Meaningful Learning; DMLES = Debriefing for Meaningful Learning Evaluation Scale.

To enhance the learning experience, resources were developed and provided to learners in both paper and electronic formats, with the former distributed at the in-person training (Lane & Mitchell, 2013). Suggested verbiage was provided with examples of types of Socratic questions that would be appropriate to ask. This handout could be used not only for training others, but also as a step-by-step guide as participants were learning the debriefing process. A student guide to participating in DML debriefing was also created. This handout explained the DML process to students, making them aware of what to expect and the preparation needed to participate in DML debriefing.

Numerous videos were created demonstrating the use of DML during adult health, community, virtual, and screen-based simulation debriefings. The videos were purposely created with nursing students at a variety of different levels to demonstrate how debriefers can/should alter Socratic questioning to match the level of learners. The overall goal was to help the debriefer understand that regardless of the type of simulation or the level of the learner, the DML process was the same. Because continual assessment of progress was needed for both trainers and trainees, another video was developed to describe the debriefing evaluation process and how to use each item of the DMLES for both subjective (self) evaluation and objective (peer) evaluation. Other videos included a short DML refresher providing a quick reminder of the DML process, short clips demonstrating each phase of DML, and frequently asked questions.

Assessment/Evaluation Plan

In TTT programs, it is common to schedule regular follow-up meetings to evaluate the efficacy of the training (Lane & Mitchell, 2013) and to identify areas for improvement (Rholdon et al., 2020). The DMLES, a pre-established 20-item behavioral rating scale anchored in the behaviors of DML (Bradley et al., 2021), was used to evaluate the trainers and trainees. Each item describes a behavior consistent with DML. Behavioral anchors equip raters with observable and measurable cues for rating the behaviors as either present or not present with binary options of yes or no. In psychometric testing, the DMLES demonstrated evidence of construct validity, criterion-related content validity, internal consistency reliability (Cronbach's alpha = 0.964), and interrater agreement (Bradley et al., 2021). The DMLES is to be used to provide formative feedback rather than to attain a particular score to determine competence (Bradley et al., 2021). For the purposes of this study, individuals who had a score of less than 16 or 80% received remediation from a DML expert. Although a rating instrument is not essential for a TTT model, it provides a structure for assessment and feedback.

Trainer Identification

A traditional three-step DML TTT education program (champion identification, champion development, and champion implementation) was developed (Lane & Mitchell, 2013) and champions were referred to as DML trainers. DML debriefing trainers could be new to DML, but they had to have at least 1 year of prior experience with simulation and debriefing.

Trainer Development

Trainers are the foundation of pyramid training processes, and much effort was put toward developing these trainers into champions in the DML debriefing method and then ensuring they could integrate this into their trainer role through which they disseminate the training to others (trainees) in their workplace (Lane & Mitchell, 2013). Following TTT methodology, trainers practiced DML debriefing frequently with students in academic

settings or with nurses participating in simulation for continuing education to develop their expertise. After these debriefings, trainers assessed their own debriefing and then immediately completed the DMLES by recalling what had occurred. Next, they watched their recorded debriefing and completed the DMLES again. Comparing the recalled experience with the actual experience is an important aspect of the TTT educational process to fine-tune the ability to recall and self-assess well. A process was developed to allow trainers to upload their recorded debriefing sessions so that they could be objectively assessed by experts and receive feedback. The experts reviewed the debriefing videos and rated the trainers using the DMLES. The scores from the self-assessment and the expert assessment were compared. The expert provided individualized written feedback to the trainer. If needed, an individual videoconference was conducted to evaluate the trainer's understanding of the feedback and provide suggestions for improvement.

Trainer Implementation

TTT programs often include multiple training sessions to ensure that trainers (champions) are well-prepared to begin training others (Lane & Mitchell, 2013). Once trainers were evaluated as competent in DML debriefing, they attended a 2-hour online training session. Trainers were instructed on how to train others to use DML and how to provide constructive individualized feedback to their trainees. Trainees were defined as educators from the trainer's workplace who learned to use DML debriefing from the trainer. The trainers were given access to an electronic resource that included all of the items that were initially available to them plus additional items to train others, including an agenda template and a DML debriefing training PowerPoint presentation. They also received two different feedback templates that they could choose to use when providing written feedback to their trainees, but they had the option to develop their own. Additional role-playing opportunities mimicking the training process were completed, and trainers were again assessed on their ability to debrief and to train others in a deliberate practice strategy (Gonzalez & Kardong-Edgren, 2017). Once the trainers were ready, they then trained the trainees in their workplace to use DML.

Trainees practiced and implemented DML multiple times with their students in academic settings or with nurses participating in simulation for continuing education. Trainees first assessed their own debriefing and then immediately completed the DMLES by recalling what had occurred. Next, they watched their recorded debriefing and completed the DMLES again. The trainer also reviewed the debriefing video, rated the trainee, and provided individualized feedback for improvement. Expert evaluators also evaluated the trainees in order to assess the effectiveness of the trainers' ability to teach trainees how to implement DML and evaluate their debriefing.

Twelve trainers participated in the study, providing DML education and feedback to 21 peer trainees from their place of employment. Five trained one peer and five trained two peers, while two trained three peers. Trainers submitted up to seven debriefings for evaluation. By the third submission, eight had received a proficient score (M = 16.9) when evaluated by a DML expert. Those whose scores were below the 80% proficient score were required to attend an additional virtual training session, specific to their needs. Once proficient, trainers provided training to their peers based on the principles they learned at the TTT meeting.

The trainees submitted two recorded debriefings for trainer and expert evaluation and feedback. Eleven trainees scored greater than 80% on the DMLES on their first debriefing submission. Fourteen trainees were considered competent (M = 16.3) by their second submission based on the DMLES expert evaluation (**Table 2**). With additional practice, feedback, and evaluation, it is likely that all debriefers would continue to improve. Although this was a small sample of debriefers, based on the DMLES scores, it was evident that debriefing improved over time with deliberate practice and feedback. DMLES scores were also consistent between trainers and trainees, supporting the efficacy of the TTT program developed to teach others how to use DML. Studies with larger samples are needed.

Table 2. Debriefing for Meaningful Learning Results

Participant	Debriefing	*M*	
		Trainer DMLES score	Expert DMLES score
Trainer (*n* = 12)	1		13.7
	2		14.9
	3		16.9
Trainee (*n* = 21)	1	14.1	13.8
	2	16.4	16.3

Conclusion

TTT programs are an effective means to rapidly disseminate sustainable educational training in academic and nursing staff development environments. With the rise in simulation use, debriefing training in evidence-based and theoretically derived methods such as DML is increasingly needed by large numbers of nurse educators. Because time and budget constraints limit workshop attendance, alternative methods of disseminating this education are needed. TTT was chosen to teach others to implement DML debriefing because the pyramid educational methodology has been a successful time-efficient and cost-effective option to meet a variety of educational needs (Anderson & Taira, 2018; Attard Tonna & Bugeja, 2018; Theilen et al., 2017). When applied to DML, TTT pedagogy was used to rapidly create a cost-effective process for teaching a large number of debriefers. The resources were not difficult to create or disseminate. Trainers and trainees successfully learned to implement DML debriefing with self, peer, and expert assessment and feedback. TTT methodology can be used in both academic and clinical environments to disseminate debriefing training and ensure best practices for simulation are available for student and staff development purposes.

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