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Deliberate Practice with Motivational Interviewing: Basic Helping Skills Among Novice Helpers

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ABSTRACT

**Deliberate Practice with Motivational Interviewing:
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We examined the effects of deliberate practice (DP) in teaching motivational interviewing (MI) helping skills to 45 upper-level undergraduate students in a semester-long course using an experimental crossover waitlist design. Students participated in a three-hour MI skills workshop focused on open-ended questions, affirmations, reflections, and summaries (OARS) and engaged in ongoing practice throughout the semester. Students video-recorded four skill demonstrations involving real-life changes with a volunteer client, addressing behavioral change. Pre- and post-workshop video recordings were analyzed to evaluate changes in reflective listening skills and the overall consistency of using MI OARS skills. The results revealed significant increases in reflections-to-questions ratio, consistency in using MI OARS skills, and decreased use of statements that were inconsistent with MI. Additionally, students reported increased learning and self-efficacy in using MI skills. These findings suggest that integrating DP into undergraduate courses enhances the frequency and proficiency of MI-helping skills among undergraduate students preparing for the helping professions. The practical implications extend to preparing students for graduate programs or careers in the helping professions.

Public Significance: This study highlights the potential benefits of incorporating DP with MI in undergraduate courses. By using experiential methods to introduce students to MI and its principles, this approach may lay the foundation for developing greater confidence and a solid foundation for building advanced helping skills as novices prepare to enter graduate programs in the helping professions.

Keywords: deliberate practice, motivational interviewing, helping skills, novice helpers, experiential learning

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Deliberate Practice with Motivational Interviewing: Basic Helping Skills Among Novice Helpers

Over the past few decades, scholars and researchers have expressed concern and inquiry regarding the training and retention of helping skills among those in the role of helpers (Hill & Knox, 2013; Hill & Norcross, 2023; Mahon, 2022; Vaz & Rousmaniere, 2022). This paper defines "helping skills" as verbal interventions (e.g., reflective listening and asking questions) that can be acquired and applied within a helping setting (e.g., healthcare, education, counseling). The term "helper" encompasses anyone who uses their knowledge and skills to assist others, with the recipient referred to contextually as "person," "client," or "partner." It is important to note that much of the research directed at understanding what makes highly effective helpers has focused on psychotherapists or therapists, who are considered highly trained helpers and, as such, represent a subset within the broader category of helpers. In shifting our focus, we introduce theoretical questions and issues and propose a solution, laying the groundwork for research findings on novice helper training.

Various research theories explored different facets of effective helpers (i.e., psychotherapists). Effective helpers can create an environment where a person can receive the knowledge, insight, and wisdom to walk away from a helping session having received what they wanted or needed. In understanding what makes helpers effective, researchers have proposed examining personality and behavioral traits within skilled helpers (Truax & Carkhuff, 2007). Linking a helper's inherent characteristics and acquired abilities appears to be a potential idea for study. Consistently, existing research confirms the influence of therapist effects on the variability of client outcomes, emphasizing the individual helper's significant role in the therapeutic

process, the helper's identity, or the *who*, introduces variability into client outcomes (Baldwin & Imel, 2013).

Moreover, researchers explored teachable and learnable skills that distinguish highly effective psychotherapists (Barkham et al., 2017; Miller & Moyers, 2021). For example, Miller and Moyers (2021) suggest skills such as providing accurate empathy, positive regard, genuineness, acceptance, focus, hope, evocation, and advice or information. These skills have an empirically supported history that can be core skills for helpers to cultivate and improve. It matters *how* helpers use these skills, which raises questions about the methods of teaching and implementing these skills to maximize the potential for clinically meaningful results (Bailey et al., 2023; Miller & Manuel, 2008).

How we teach and use helping skills matters for helpers and clients. Being an effective helper is not about having a particular personality or natural talent; working on these qualities could make a helper more effective. Interestingly, a helper's performance is connected more to their technical skills than personality traits (Barkham & Lambert, 2021). These findings raise an important question about the optimal focus of helper training: should helpers prioritize personal development or concentrate on acquiring and refining their helping skills?

Research on psychotherapy outcomes challenges the conventional belief that "practice makes perfect". Specifically, it suggests that increased professional or educational experience does not necessarily lead to improvement for psychotherapists (Budge et al., 2013; Goldberg et al., 2016; Norton et al., 2014; Tracey et al., 2014). Even with formalized instruction during doctoral-level training, psychotherapists have demonstrated minimal to no improvement in their ability to facilitate change in their clients (Erekson et al., 2017). Despite the knowledge that psychotherapy can yield effective outcomes (Lambert & Ogles, 2004; Wampold, 2001), the

challenge persists in providing effective training or experiential learning methods to maximize a helper's knowledge and skillset, better preparing them to recognize and know when they are facilitating positive outcomes in clients. Therefore, there is a need to introduce effective training or experiential learning methods earlier rather than later (Rose et al., 2023).

This study will incorporate deliberate practice (DP) within the motivational interviewing (MI) framework into an upper-level undergraduate clinical psychology course. By integrating DP for learning MI, we seek to establish a solid foundation for building practical helping skills among students pursuing graduate programs or careers in the helping professions. Through this study, we hope to enhance training approaches so future helpers can deliver impactful interventions that promote positive client outcomes. Introducing DP early in an individual's helping career can possibly benefit training practices, shape the next generation of helpers, and improve client care quality.

Helping Skills Training with Novice Helpers

Helping skills training with novice helpers has gained interest in the field of psychotherapy research (Knox & Hill, 2021). Knox & Hill's comprehensive review of training and supervision in psychotherapy includes a section that focuses on training novice helpers (i.e., undergraduate and graduate students) in the early stages of their professional development. The review emphasizes the central role of teaching verbal interventions (i.e., helping skills), such as reflections and challenges, within structured programs. The review also mentioned that the historical foundation of learning helping skills is based on the pioneering insights of Rogers (1942), who recognized the future importance of counseling techniques in various helping professions, introducing the qualities of a training course that consists of selecting, teaching, and supervising students. Rogers (1957) later emphasized and expounded more on key aspects of a

person-centered approach, emphasizing that constructive personality change involved six facilitative conditions that, if present, increase the likelihood of an individual's improvement. At this point, he noted that techniques were not as important. Instead, if a technique was used, it was known as a "channel" to create one of these conditions (e.g., empathic understanding, unconditional positive regard, genuineness). Thus, he believed these facilitative conditions to be attitudes rather than skills that should be taught (Knox & Hill, 2021). Roger's operationalizing terms and creation of a base for helping skills training initiated early research interests in improving the therapeutic relationship. We are interested in assisting students in building on principles from a person-centered approach using MI to learn evidenced-based relational helping skills.

Training novice helpers in its early stages has traditionally focused on developing relational skills (Ford, 1979). Pioneering programs drew inspiration from Carkhuff's human relations training (HRT; 1969), Ivey's micro-counseling (MC;1971), and Kagan's interpersonal process recall (IPR;1984), which were predominantly implemented with graduate students. More recently, Hill's training program (Hill, 2020; Hill & O'Brien, 1999) has integrated and tailored these models for undergraduate and first-year graduate students. Hill's model consists of three stages: exploration, insight, and action. These three stages integrate client-centered, psychoanalytic, interpersonal, and behavioral theories chosen for their proven effectiveness in helping clients (Hill, 2020). This approach has shown promise in facilitating the use of helping skills while enabling students to establish a therapeutic relationship (Hill & Kellems, 2002). Building relational skills provides a foundation for advanced helping skills.

Helping skills training has proven effective in generating learning outcomes in novice helpers (Hill & Knox, 2013; Hill & Lent, 2006; Miller et al., 1991). For example, Hill's helping

skills model (2020) involves unique components and a structured approach, including readings, lectures, observations, practice, and feedback. Post-training, students have found the practice of helping skills one of the most beneficial aspects. Supporting Hill's model, undergraduate students have demonstrated positive outcomes, including increased self-efficacy as helpers, higher self-perceived empathy from partners, reduced helper talk time, and improved session performance, as reported by both the helper and partner (Hill et al., 2008). More recent studies have shown replicated results in terms of self-efficacy, with the addition of the usefulness of an instructor's authoritative teaching style, that is, setting clear expectations and achievable milestones (Ahn et al., 2023). The evidence from Hill's helping skills training supports the development of alternative methods and models that are similar to the training method used in this study.

Learned helping skills remain useful post-training. In a five-year follow-up on 33 undergraduate students who had previously participated in a study using Hill's model (Hill et al., 2016), those trained continued applying these helping skills in daily life and professional settings (Hill et al., 2020). Among the 33 students, 15 who pursued additional mental health education after graduating scored higher in self-efficacy. These findings suggest that the awareness of helping skills acquired during the initial training remains valuable regardless of post-graduation pursuits. Ongoing exposure to environments where helping skills are regularly applied allows for continual practice, refreshing and strengthening helping skills. Consequently, providing undergraduate students with such opportunities can potentially offer experiential learning with practical applications in real-world settings.

The research findings presented above regarding helping skills training for novice helpers form the fundamental basis for our study, as novices can acquire and be influenced by such

training. Recognizing the significance of the therapeutic relationship (Crits-Christoph et al., 2013; Flückiger et al., 2018; Norcross & Lambert, 2018), it is reasonable to integrate a collaborative approach like MI as part of the training methods for novices. Considering the previous question regarding whether to prioritize personal development or the acquisition and refinement of helping skills, our study focuses primarily on the latter aspect. By implementing an experiential module within a course for undergraduate students, we aim to explore whether DP for learning MI, within an upper-level Clinical Psychology course can yield similar effects to those observed in Hill's model. To provide a comprehensive overview, we delve into the relevant literature on DP and MI before describing our training method in detail.

Deliberate Practice as a Proposed Method of Expertise

DP has become a fundamental training method for developing expertise (Ericsson & Carkhuff, 2016). Innovative studies conducted by Ericsson and colleagues (1993) with violinists and pianists provided compelling evidence that engaging in extended periods of DP within a specific domain can significantly enhance skill acquisition. Furthermore, more accomplished performers began DP consistently younger than less successful performers. These "elite performers" lifelong dedication to their chosen field, such as piano or violin, exemplifies the critical role of sustained effort in mastering a skill. When implementing DP, it is essential to balance task difficulty and learner capability to avoid overwhelming learners with a skill beyond their capabilities (Ericsson & Carkhuff, 2016). Pre-established skill sets are, therefore, vital in DP, as they form the foundation for learners to believe in their abilities and further develop their skills. Upper-level undergraduate students are well-suited to start their journey of DP in specific helping skills at an earlier stage of their education due to their high potential for learning and growth.

In a subsequent research article, Ericsson and Lehmann (1996) formally defined DP as "the individualized training activities specially designed by a coach or teacher to improve specific aspects of an individual's performance through repetition and successive refinement" (pp. 278-279). Pursuing skill improvement and expertise development has led to identifying fundamental principles of DP (Ericsson, 2021). First, a task should have clear and well-defined goals, ensuring participants know performance expectations. Second, participants should be capable of performing the task, promoting self-reliance and confidence. Third, receiving immediate and constructive feedback on each performance of the practice task to inform a participant to adjust and continuously improve. Fourth, consistent and regular repetition of the same or similar task is provided to a participant in a setting that creates an opportunity to practice repeatedly. The last principle is individualized instruction and guidance from an expert teacher or coach, who tailors the practice task to meet each participant's unique needs and potential. By merging these principles into the learning process, participants can maximize their skill growth and achieve expertise in their chosen fields. This study explores how some DP principles can be implemented in a classroom setting.

Research consistently supports the effectiveness of DP in enhancing knowledge and skill acquisition across diverse domains (Ericsson, 2009). DP has also gained attention as a potential method for fostering clinical expertise (Miller et al., 2013; Tracey et al., 2014; Vaz & Rousmaniere, 2022). In response to understanding the time spent using DP to develop psychotherapy skills, Chow and colleagues (2015) examined 17 therapists working with 1,632 clients. Results suggested less client distress following treatment for therapists who dedicated more time to DP activities outside their work. These therapists were also more likely to be in the group that performed the best (i.e., top quartile group), accumulating up to 2.8 times the number

of hours in DP activities. These results suggest that more effective therapists habitually use DP to improve their therapy skills (Wampold et al., 2017). Despite these consistent findings of dedicating more time to DP exercises (Ericsson et al., 1993), the measures relied on self-report rather than directly assessing skill implementation (Knox & Hill, 2021). Thus, in our study, we seek to gather what students experience through self-report and then evaluate the specific skill change after teaching in a DP method through independent ratings of skill demonstrations.

DP for therapist training is in its early stages (Mahon, 2022), and its role as a skill development and maintenance method requires further exploration. Ongoing research aims to identify specific helping skills and teaching methods that benefit helpers and clients the most (Vaz & Rousmaniere, 2022). While Hill's helping skills training is considered a valuable model for DP (Knox & Hill, 2021), there is an ongoing debate surrounding the primary focus of training, with two critical aspects under scrutiny: the specific skills to be taught and the most effective methods for their instruction.

One promising direction in skill training is Facilitative Interpersonal Skills (FIS), which have been empirically shown to improve therapeutic outcomes (Anderson et al., 2009). These skills, rooted in accurate empathy and the cultivation of a strong therapeutic alliance, empower helpers to engage with clients and accommodate their individual needs effectively. Building upon this notion, Anderson et al. (2020) proposed a novel approach to employing video-based DP with undergraduate students to enhance FIS. This method involved the repeated practice of responses to realistic and difficult client scenarios, providing valuable learning opportunities with examples of both good and poor response models. By using observation, rehearsal, and self-reflection as teaching aids, this approach enables learning without requiring extensive prior knowledge; feedback, supplemented by expert input, can be valuable in the learning process.

Furthermore, integrating technology, role-plays, and behavioral rehearsal recordings further supports skill acquisition in FIS, making it accessible and relevant for undergraduate students through technology. DP can be an additional component within FIS or complement other evidence-based relational skill training methods.

In their randomized control trial, Perlman et al. (2023) conducted a study investigating the effectiveness of DP for FIS training among 56 undergraduate students. The primary objective was to enhance their therapeutic relational helping skills, integrating principles from Alliance-Focused Training (AFT) and FIS. The study's results demonstrated significant improvements in empathy, alliance bond capacity, and alliance rupture repair responsiveness in the group that received AFT/FIS DP training compared to a control group. The 90-minute semi-structured education program the study used was comprised of an informative overview of AFT/FIS principles, therapy vignettes, expert demonstrations, engaging discussions, role-plays, and reflective exercises. By integrating evidence-based relational skills training with DP, the students showed notable enhancement in self-awareness and empathic responses. Novice helpers exhibited considerable improvement in FIS usage, recognizing ruptures as valuable opportunities to apply their newly acquired skills (i.e., used positive emotions in difficult situations). These findings suggest the potential of DP-based training as a valuable tool for advancing therapeutic skill development and fostering more effective and empathic helping interactions.

Motivational Interviewing

"MI is a particular way of talking with people about change and growth to strengthen their own motivation and commitment" (Miller & Rollnick, 2023). As change is an inherent part of life experienced universally, guiding individuals through this process requires skill and a keen focus on helping them recognize internal conflicts within their value system. These conflicts,

known as “ambivalence,” can be particularly challenging for clients (Miller, 2022). For those grappling with conflicting motivations and feeling stuck, MI effectively guides them towards change by empowering them to identify the most suitable path, encouraging exploration of alternative ways to address ambivalence, and fostering patience in helpers (i.e., resisting the fixing reflex, rolling with resistance). Through dedicated training, helpers can acquire and refine the skill of facilitating others’ access to intrinsic motivation for change (Miller & Rollnick, 2023). With its practical approach and collaborative style, MI proves well-suited for novice helpers, supporting clients in embracing change, navigating ambivalence, and discovering their intrinsic motivation, ultimately promoting personal growth and well-being.

Dr. Miller’s recent work provides a comprehensive overview of the evolution of MI, showcasing its influence as an evidence-based therapeutic approach (Miller & Rollnick, 2023). During its early development, MI was influenced by principles from a person-centered approach, focusing on accurate empathy and establishing a strong therapeutic relationship to address problematic health behaviors, such as excessive drinking. The flexibility of a person-centered approach like MI lies in its applicability to various target behaviors and settings, including education, healthcare, and social services, and demonstrating efficacy with older teens and adults. MI is supported as a stand-alone treatment and when integrated with other popular therapy orientations. Despite its well-established empirical support, there remains no defined threshold for who can learn MI, as it is believed to nourish basic helping skills in those entering the helping professions.

Miller and Moyers (2021) conducted a comprehensive review of psychotherapy research spanning 70 years to identify the essential skills highly effective therapists possess. MI encompasses these eight skills (Miller & Rollnick, 2023). These skills include demonstrating

empathy, practicing genuineness, expressing positive regard, accepting the client's perspective, maintaining focus, instilling hope, evoking client motivations, and offering information and advice. Surprisingly, MI unintentionally encompasses the core components necessary for creating highly effective therapists, and these skills are not fixed; they can be learned and implemented by novice helpers.

MI has core skills used to influence change that interacts with ongoing processes (Miller & Rollnick, 2023). Reflections, open-ended questions, affirmations, and summaries create the acronym (OARS), serving as skills to facilitate four ongoing processes: engaging, focusing, evoking, and planning. These processes resemble Hill's model of exploration, insight, and action (Hill, 2020). By using OARS skills, helpers can effectively nurture a strong working alliance that may increase the probability of positive change. Active listening, with reflections attuned to the client's experiences, is vital in helping outcomes. Consequently, our study focused on reflective listening to align as closely as possible with DP principles of focusing on a specific target area with continual practice. By refining reflective listening skills, we aim to increase awareness of using open-ended questions, affirmations, and summarizations to influence conversations about change.

DP for Learning MI

Research on the integration of DP with MI helping skills is limited. Miller et al. (2004) conducted a study involving 140 licensed professionals in the helping professions randomized into five different training conditions. The study aimed to explore the effectiveness of various training methods in promoting MI proficiency post-training. They proposed reducing MI-inconsistent responses, believing increased MI-consistency would reduce client resistance. Their approach included two facets of DP: feedback utilization and expert coaching. The training was

tailored to specific group assignments, and various training interventions were implemented over 4-, 8-, and 12-month follow-ups. The study's results revealed that sustained proficiency in MI skills relied on coaching and/or individual performance feedback after training. Interestingly, the group that participated in feedback and coaching along with the workshop showed more change talk in client responses than sustain talk. In contrast, techniques such as self-study with therapist manuals, observing videotapes, and merely participating in a two-day workshop proved less effective. These vital elements of an expert coach, skill-tailored feedback, and repetitive practice contribute to developing enduring MI skills among practicing therapists.

In recent studies, researchers have investigated DP in MI training workshops. While traditional MI workshops initially lead to improvements in confidence and skill usage immediately after the workshop (Miller & Mount, 2001), concerns about the long-term effectiveness of these skills persist. Consequently, current research is focused on identifying approaches that can better align confidence and skill retention over time. Westra et al. (2021) introduced modifications to a 2-day MI training workshop, emphasizing DP principles with a specific focus on repetitive practice and feedback, particularly in addressing resistance and ambivalence. The DP training group consistently outperformed the traditional workshop group across various measures after a 4-month follow-up, displaying superior responses to resistance vignettes, lower observer-rated resistance, and higher levels of empathy during interviews with ambivalent interviewees. These results indicate encouraging outcomes for including DP principles in two-day MI workshops. Building on the findings of this parent study, Di Bartolomeo et al. (2021) further explored the impact of the DP training method on client change language. Their research revealed that the DP group managed to evoke less resistance, providing evidence that training in a DP method can influence a client's language, leading to potentially

better client outcomes. Another study by Shukla et al. (2021) within the same parent study found that demand behavior decreased in the DP group, which showed that helpers were more likely to respond in a supportive manner. These findings express the potential benefits of integrating DP principles into MI training, leading to lasting skill maintenance.

To date, no studies explore DP within MI with undergraduate students. We believe a classroom environment provides an excellent opportunity to implement DP principles. Instead of waiting for graduate programs or any other type of learning mechanism, like Ericsson and colleagues (1993), the sooner novice helpers can begin to understand how to build helping skills, the more likely they will be able to apply similar learning to other necessary skills. MI may serve as a possible stepping stone in understanding what skills to learn and refine to create positive client change, as that is the essence of what training is about (Miller et al., 2004).

This research aims to address the existing gap in the literature by exploring the integration of DP with MI in an undergraduate course. While MI has shown efficacy when taught to undergraduates through didactic methods (Madson et al., 2013), there is a lack of prior studies investigating the combination of DP and MI in this context. Drawing on recent advancements in DP training for MI by Manuel et al. (2022), this study focuses on the relational component. Our approach involved establishing a strong relational foundation through a person-centered approach, with reflective listening skills as the primary focus to be taught and learned. Further guidelines include adhering to recommendations like 1 to 1.25 hours of practice, focusing on beginner skills, such as simple and complex reflections, and ensuring instruction is provided by an expert in MI. The exercises used in the research training were derived from the Motivational Interviewing Network of Trainers (2020) manual and *Building Motivational Interviewing Skills: A Practitioner Workbook* (Rosengren, 2017), which primarily emphasized reflective listening.

Given the well-established track record and research-backed efficacy of MI, it is a promising approach for developing helping skills with substantial potential for widespread application and effectiveness across diverse clinical settings.

Current Study

The current research study is an experimental crossover waitlist design to investigate the impact of DP principles in MI training. Participants were upper-level psychology students with limited prior knowledge of MI in clinical practice, chosen based on prior studies involving novice helpers interested in the helping professions (e.g., Hill et al., 2008, 2016; Perlman et al., 2023). To assess the effects of the MI workshop with DP principles, we compared pre- and post-workshop role-play recordings and self-ratings of knowledge and skills. Role-play scenarios involved volunteer clients seeking help with innocuous real-life changes, such as reducing soda intake or screen time, increasing exercise, or improving sleep. Recordings were analyzed using an OARS coding legend based on the Motivational Interviewing Skill Code version 2.1 (MISC 2; Miller et al., 2008) in video recording software.

We hypothesized that participants in the MI workshop with DP principles would significantly increase their frequency of reflective listening skills and exhibit higher skill levels in using MI reflective listening skills post-workshop. Moreover, we expected ratings of student role plays to demonstrate a notable increase in reflections from pre- to post-workshop, while observer ratings would indicate an improvement in the reflections-to-questions ratio. Furthermore, we anticipated that observer ratings would show greater consistency in using MI OARS helping skills and reveal a reduction in inconsistency when employing MI OARS. Lastly, students' self-reports of their knowledge and ability would show significant changes pre- to post-course.

Methods

Participants

Participants were 45 upper-level undergraduate students enrolled in an Introduction to Clinical Psychology course in the western region of the United States. Students were predominantly female (71% women, 29% men) and classified as Caucasian (86%), with a mean age of 23 years. Students expressed interest in careers within helping professions such as clinical/counseling psychology, social work, marriage and family therapy, school psychology, or mental health counseling. All of the students had completed some college but had not yet earned a degree. Participation was voluntary. Of the 64 students enrolled in the course, 49 were recruited through announcements at the start of the Winter 2023 semester. The 15 other students chose to be excluded from the study. One of the students entered the study late and completed two role plays within 24 hours of each other immediately after completing the workshop and was excluded from analyses. Another three students were excluded because of incomplete data. Upon providing informed consent, participants granted permission to use archival course data via the Learning Management System (LMS). As compensation for completing assigned tasks, participants received a $20 gift card.

Measures

The course's LMS provided a platform for managing assignments, exams, and skill demonstrations. The primary self-report outcomes included participants' MI knowledge and ability. Observer-rated outcomes included the frequency of OARS skills through systematic coding of four separate role plays completed by the students as assignments in the course. Supplementary secondary measures were also included to examine student self-evaluation of their performance following each skill demonstration.

Survey Questionnaire

A self-developed Qualtrics questionnaire assessed participant demographics and their pre- and post-training knowledge and ability to use MI skills. The analysis encompassed eight items evaluated on a rating scale ranging from 1 "Very Limited" to 5 "Excellent". These items examined participants' understanding of MI OARS skills (e.g., familiarity with reflective listening skills) and their self-perceived capability in demonstrating OARS skills (e.g., competence in using reflections proficiently in practice) (see Table 1).

Table 1

Qualtrics Questions on Knowledge and Ability/Skills

Questions
Q1. Knowledge about reflective listening in therapy
Q2. Ability or skills needed to competently use reflections in practice
Q3. Knowledge about affirmations in therapy
Q4. Ability or skills needed to competently use affirmations in practice
Q5. Knowledge about summary statements in therapy
Q6. Ability or skills needed to competently use summaries in practice
Q7. Knowledge about open-ended questions in therapy
Q8. Ability or skills needed to competently ask open-ended questions in practice

Note. Items were rated using the following scale: 1 "Very Limited," 2 "Below Average," 3 "Average," 4 "Above Average", and 5 "Excellent". Items 1, 3, 5, and 7 were averaged to create the self-report knowledge subscale, and Items 2, 4, 6, and 8 were averaged to create the self-report ability or skills subscale.

Video Recordings

The GoReact software program is a cloud-based video program with webcam and microphone features. GoReact was embedded within the course's LMS to store video and audio recordings of innocuous role-played scenarios about change (e.g., drinking less soda, sleeping more). Each student recorded themselves with a volunteer client (e.g., friend, roommate, classmate, spouse) through GoReact or on their personal device (e.g., laptop) and uploaded it to GoReact. There were five recorded skill demonstrations throughout the semester. However, one recording was excluded because of the interference of an assignment with performance outcomes (see Appendix A). Four coded sessions per student lasting 5-10 minutes were collected throughout the semester. The assignment instructions state:

> Using the Plugin - GoReact, video record a max 7-minute helping interaction where you are the helper and a classmate, roommate, friend, or family member over 16 is the person who is being helped. The person you help should pick a REAL behavior that is not TOO PERSONAL that they wish to change such as increase exercise, improve nutritional eating, drinking less caffeine, getting to bed earlier, wasting less time on social media, etc. In 7 minutes, do your best to help the person increase their motivation to change, consider taking actions to change, or make commitments to change.

Students engaged in role-playing conversations that prioritized preventing harm to others, thus mitigating potential risks. Moreover, volunteer partners were given the autonomy to select the topics they wished to discuss, promoting independence in their decision-making regarding the changes they sought. The assignment's instructions were minimal, enabling spontaneous responses from student helpers and volunteer partners.

Additional Measure

In addition to the primary outcomes, a secondary assessment was conducted using a post-video demonstration reaction survey taken within GoReact (see Table 2). This survey included four questions to assess students' responses to their post-skill demonstration helping sessions. The survey evaluated attentiveness, anxiety, difficulty, and helpfulness. Students were asked to self-reflect after skill demonstrations (e.g., Demonstrated attentive listening throughout the interview). Participants were to assign ratings to each question on a scale of 1 to 5 (see Table 2). These questions sought to capture participants' self-awareness after their conversation with a partner attempting to increase motivation for change.

Table 2

Post-Skill Demonstration Questions in GoReact

Questions
Q1. Demonstrated attentive listening throughout the interview.
Q2. Rate how anxious you felt while helping the person in this situation.
Q3. How difficult was it for you to be helpful to the person?
Q4. How helpful was the interview for the person? How much did they increase in their motivation to change?

Note. Items were rated using the following scales: Q1 was rated as 1 "Poor," 2 "Fair," 3 "Good," 4 "Very Good", and 5 "Excellent". Q2 was rated as "None," 2 "Very Little," 3 "Some," 4 "Quite A Bit," and 5 "Very Much." Q3 and Q4 were rated as "Not at All," 2 "A Little," 3 "Some," 4 "Quite A Bit", and 5 "Very Much."

Coding Helper Statements

Four trained raters used MISC 2 to analyze helper statements within GoReact. The coders consistently calibrated coding reliability through frequent meetings. Reliability checks were

conducted at predetermined intervals, ensuring rating consistency with feedback. We focused on codes related to reflective listening, MI-consistent responses, and MI-inconsistent responses (i.e., conversation blockers). Coders were blind to both condition and time (pre- or post-training). The four coders demonstrated moderate agreement in their assessments (average *Kappa* = .78; see Table 3).

Table 3

Interrater Reliability (Kappas) Table for Helper Statements

	Rater 1	Rater 2	Rater 3	Average
Rater 2	0.89			
Rater 3	0.79	0.74		
Rater 4	0.76	0.78	0.67	**0.78**

Procedure

Following IRB approval, participants in the undergraduate class were introduced to the study through in-class announcements and email notifications sent to all enrolled students. The following week after inviting students, we collected baseline data from those who provided informed consent. Skill demonstrations were course assignments and were recorded before and after training using GoReact throughout the Winter 2023 semester. Students completed pre- and post-training skill demonstration reaction surveys for three of four skill demonstrations. The fourth skill demonstration was excluded due to assignment specific and unique instructions (i.e., students were asked to demonstrate the use of 7 specific MI skills, such as, reviewing past success, confidence ruler, or amplified reflections) determined by the instructor.

This study used an experimental crossover waitlist design (see Table 4). Students were divided into treatment and waitlist-control groups. By the second week, both groups established baseline measures for self-report measures and recorded skill demonstrations. As can be seen in Table 4, the treatment group received a DP/MI workshop in the third week and submitted their post-workshop video 1 recording within one week. Simultaneously, the waitlist-control group recorded their pre-workshop video 2 recording. In the fourth week, the roles were reversed, with the waitlist-control group receiving the same DP/MI workshop. Two weeks later, the treatment group submitted their post-training video 2 recording. The waitlist-control group recorded their post-workshop video 1. Data collection concluded with final skill demonstrations and post-workshop assessments in the last week of the semester. The first month of the semester was dedicated to introducing the intervention, followed by continual practice and assessment throughout the post-workshop period.

Table 4

Experimental Crossover Waitlist Design

		Assessment and Treatment Timing				Follow-up
	Date	1/14/2023	1/23/2023	1/30/2023	2/11/2023	4/19/2023
TX Group	Workshop	T1 Assessment (A)	**Workshop**	T2 Assessment (B)	T3 Assessment (C)	End of Semester Assessment (D)
	Waitlist	T1 Assessment (E)	T2 Assessment (F)	**Workshop**	T3 Assessment (G)	End of Semester Assessment (H)

DP/MI Training

A clinical psychology professor who had participated in training of trainers through the Motivational Interviewing Network of Trainers led the DP/MI training. The training encompassed a three-hour workshop administered to the treatment (and later the waitlist-control group). Supported by a team of graduate student assistants and teaching assistants, the workshop commenced with didactic techniques using a PowerPoint presentation, informational videos, and interactive class discussions to provide an overview of MI principles (refer to Table 4). The training used practical examples (both video and live) to show the difference between effective and ineffective MI techniques. For example, the instructor conducted a live real-play demonstration involving a voluntary class participant in a real-play conversation about change.

The DP exercises for students were structured to involve student pairings, engaging them in activities focused on reflective guessing and real-play enactments to address behavioral change. Guidelines encouraged offering a minimum of two reflections per question. To monitor

the observed MI skills, participants used an MI worksheet. The training protocol was designed to incorporate ongoing evaluations and feedback from the instructor and assistants during repetitive MI exercises. MI principles in training were included for facilitators trying to continue the MI attitude in providing feedback. For example, facilitators gave positive feedback and then asked for permission to provide constructive feedback. The training approach also encouraged class discussion to address any encountered challenges. Furthermore, participants were actively encouraged to continue practicing beyond the workshop sessions, thereby continuing to practice on the go (Miller & Rollnick, 2023).

Students continued practicing post-workshop each class period. Each class consisted of one or two MI practice periods that were approximately 10 minutes each. The instructor took exercises from the MINT (2020) manual and (Rosengren, 2017). Exercises focused on the relational aspects, such as partnership, acceptance, compassion, and evocation (PACE; Miller & Rollnick, 2023) and practicing OARS skills with a classmate. For example, one MI break focused on learning to use reflections to identify underlying emotions or meanings with varying depths. These depths were to paraphrase or present information in a new light; amplify, which is to overstate or increase the intensity; double-sided, reflecting both sides of ambivalence; and affective, addressing the implied or expressed emotions. Students were given an example client phrase (e.g., I want to exercise, but it's so hard to get out of bed) that they then used to rehearse how they would respond. They would take turns with a partner reading the client statement while practicing different types of reflections. These types of exercises were included in each class period throughout the semester.

Table 5

Overview of MI/DP Workshop

MI Overview (1.5 hours)
(1) Introduction to MI (didactic) a. Ambivalence b. Change talk and sustain talk c. The fixing reflex d. Overview of OARS skills e. Video demonstrations of MI-consistency and inconsistency f. Live real-play demonstration in front of the class
Deliberate Practice (1.5 hours)
(2) Simple and Complex reflections a. Worksheet handout on MI OARS consistency b. "You mean that" exercise (reflective guessing) c. Real plays in partnerships Two reflections per question d. Repetitive practice and individual feedback e. Discussion on questions students had

Data Analysis

This study employed an experimental crossover waitlist design due to ethical and practical considerations related to fulfilling university requirements within the classroom. The challenge of ensuring all students benefited from classroom instruction prevented the feasibility of a traditional randomized controlled trial, making the waitlist group, which eventually received DP/MI training, a more appropriate choice. The analysis compared the waitlist control group and the treatment group. A repeated-measures analysis of variance (RMANOVA) examined the pre/post measures and the waitlist/treatment groups, focusing on six dependent variables: self-report knowledge, self-report ability, total reflections, reflections-to-questions ratio, total MI-consistent responses, and total MI-inconsistent responses. RMANOVA's application streamlines data analysis between groups (waitlist/treatment) over one within-groups variable (time), offering a more effective way to enhance statistical power and track changes in dependent variables.

Our analysis also investigated how treatment timing affected outcomes beyond historical time (see Table 4). The design is labeled A through H. While we were not mainly focusing on the main and interaction effects from a mixed group by time ANOVA in this crossover design, our data setup lets us easily see treatment effects by comparing different situations. For example, directly comparing the treatment group after the intervention with the waitlist-control group prior to intervention (B vs F in both Table 4 and Table 6) at time 2 (T2) helps us see how the treatment works compared to a control group. We also used simple effect comparisons to see how individual scores change before and after treatment in combined treatment (A vs B) and waitlist (F vs G) groups. Also, our design lets us explore the practice effect in the waitlist group (E vs F) and the short-term follow-up effect in the treatment group (B vs C) using simple comparisons within each group.

We performed multiple secondary analyses. Specifically, we analyzed the combined effects of both groups from the beginning of the semester, comparing combined cells A and E (T1) to combined cells D and H (T4). This analysis offered insights into within-group (uncontrolled) changes from the semester's outset to its conclusion. Additionally, we explored the post-workshop combined effects by comparing combined cells C and G (T3) to cells D and H (T4), allowing us to assess the workshop's influence when combined with in-class practice. Understanding these combined and within-group effects may reveal our intervention's specific contributions to the study's outcomes.

Lastly, we included the results of students' self-report measures. A comparison analysis consisted of understanding pre- and post-workshop knowledge and ability. The same questions asked at the start of the semester about reflective listening and MI OARS skills were then asked during the final week of class. In addition to these comparisons, we also monitored three time

periods for student's attentiveness, anxiety, difficulty, and helpfulness ratings immediately following the role play. Results were assessed for both groups' skill demonstrations corresponding to time 1, time 2, and time 4.

Results

Because the repeated measures analysis required data at every time point, only 45 participants were included in the final analysis (26 in the treatment/workshop and 19 in the waitlist condition). In the secondary analysis, we encountered missing data from students who forgot to fill out their post-session reactions to their helping sessions, mainly at the second and fourth skill demonstrations. As a result, we conducted a mixed model analysis to account for missing data, and the results remained the same. The findings are divided into sections based on the primary and secondary analyses that accompany the crossover design.

Effect of the Workshop

Changes in Rated Variables

The primary controlled analysis involved a planned comparison of students participating in the workshop with students who were in the waitlist group at time 2 (T2). As shown in Table 4 and Table 6, this statistical test involved comparing means in cells labeled B and F. The planned comparison was significant for reflections-to-questions ratio, $p = .004$, MI-consistent responses, $p = .049$, and conversation blockers, $p = .004$. The planned comparison was not significant for total reflections, $p = .139$. The pattern of change, along with other time points, for each of the performance-rated dependent variables is depicted in Figures 1 to 4. Table 6 presents the means and standard errors for each dependent variable. Comparing the treatment group (B) and the waitlist control group (F) at time 2, the treatment group showed a mean of 0.74 ($SE = 0.07$) in their reflections-to-questions ratio. In contrast, the waitlist control group had a mean of 0.41 (*SE*

= 0.08). Regarding MI-consistent responses, the treatment group had a mean of 14.62 (*SE* = 1.04) compared to 11.37 (*SE* = 1.22) for the waitlist control group. Furthermore, the conversation blockers decreased with a mean of 0.54 (*SE* = 0.3) for the treatment group and a mean of 1.95 (*SE* = 0.35) for the waitlist control group. However, the total reflections variable did not show a significant difference between the two groups, with the treatment group at a mean of 5.65 (*SE* = 0.74) and the waitlist control group at 3.95 (*SE* = 0.86). Relative to the waitlist control group, the treatment group had higher reflections-to-questions ratio and MI-consistent responses, and fewer conversation blockers, while total reflections were not significantly different.

Table 6

Observer Rated MI Skills for Groups by Time

Variable	**Time 1**		**Time 2**		**Time 3**		**Time 4**	
	M	SE	M	SE	M	SE	M	SE
Treatment	(A)		(B)		(C)		(D)	
Total Reflections	1.23	0.19	5.65	0.74	7.12	0.41	7.27	0.48
Reflections-to-Questions Ratio	0.41	0.08	0.74	0.07	1.33	0.17	1.96	0.23
MI-Consistent	8.23	0.75	14.62	1.04	14.46	0.57	14.31	0.66
Conversation Blockers	2.31	0.38	0.54	0.30	0.23	0.10	0.12	0.06
Waitlist	(E)		(F)		(G)		(H)	
Total Reflections	1.32	0.22	3.95	0.86	6.58	0.48	7.42	0.56
Reflections-to-Questions Ratio	0.35	0.10	0.41	0.08	1.54	0.19	1.62	0.27
MI-Consistent	9.89	0.87	11.37	1.22	13.11	0.66	13.58	0.77
Conversation Blockers	1.47	0.44	1.95	0.35	0.26	0.11	0.00	0.08

The impact of the DP/MI workshop on skill performance was assessed without control by analyzing performance changes from time 1 to time 2 (A vs B) for the treatment group and from time 2 to time 3 (F vs G) for the waitlist group. For the treatment group, within-subjects pairwise comparisons revealed significant improvements in total reflections ($p < .001$), reflections-to-

questions ratio ($p < .001$), MI-consistent responses ($p < .001$), and conversation blockers ($p < .001$). Comparing means for cells A and B, total reflections increased from 1.23 ($SE = 0.19$) to 5.65 ($SE = 0.74$), reflections-to-questions ratio improved from 0.41 ($SE = 0.08$) to 0.74 ($SE = 0.07$), MI-consistent responses increased from 8.23 ($SE = 0.75$) to 14.62 ($SE = 1.04$), and conversation blockers decreased from 2.31 ($SE = 0.38$) to 0.54 ($SE = 0.30$). As for the waitlist group, significant within-subjects pairwise comparisons were found for total reflections ($p = .013$), reflections-to-questions ratio ($p < .001$), and conversation blockers ($p < .001$), with no significant change in MI-consistent responses ($p = .25$). Comparing means for cells F and G, total reflections increased from 3.95 ($SE = 0.86$) to 6.58 ($SE = 0.48$), reflections-to-questions ratio improved from 0.41 ($SE = 0.08$) to 1.54 ($SE = 0.19$), and conversation blockers decreased from 1.95 ($SE = 0.35$) to 0.26 ($SE = 0.11$). The waitlist group demonstrated improved skill performance in total reflections, reflections-to-questions ratio, and conversation blockers after participating in the DP/MI workshop. In summary, the only variable that did not show significant improvement was MI-consistent responses within the waitlist group post-workshop for time 2 and time 3.

In addition to the workshop effects, we sought to understand practice and follow-up effects. In the waitlist group, the practice effect (E vs F) significantly increased total reflections ($p = .001$), with the mean increasing from 1.32 ($SE = 0.22$) at time 1 to 3.95 ($SE = 0.86$) at time 2. However, insignificant findings were found for the reflections-to-questions ratio ($p = .565$), MI-consistent responses ($p = .252$), and conversation blockers ($p = .336$). Moreover, the treatment group's short-term follow-up effect (B vs C) showed a significant improvement in the reflections-to-questions ratio ($p < .001$), with a mean increasing from 0.74 ($SE = 0.07$) at time 2 to 1.33 ($SE = 0.17$) at time 3. Nevertheless, there were non-significant changes in total

reflections (p = 0.098), MI-consistent responses (p = .905), and conversation blockers (p = .289). In summary, the waitlist group increased in total reflections due to the practice effect, while the treatment group maintained their skill improvement and enhanced their reflections-to-questions ratio during the follow-up effect.

Changes in Primary Self-report Variables

Table 7 displays the means and standard deviations for students' self-reported MI knowledge and ability before and after the course. Students showed significant improvements in their self-reported knowledge, increasing from a pre-course mean rating of 2.73 (SD = 0.87) to a post-course mean of 4.26 (SD = 0.59, p < .001), indicating an increased understanding of MI principles. Similarly, self-reported ability significantly increased, with a pre-course mean rating of 2.45 (SD = 0.85) rising to a post-course mean of 4.15 (SD = 0.61, p < .001), particularly in the use of MI OARS skills. These findings support our hypothesis that students would achieve significant changes in knowledge and ability in MI post-course.

Table 7

Student Self-report Knowledge and Ability Pre- and Post-Course

Measure	Pre Course		Post Course		
	X	SD	X	SD	F
Knowledge	2.73	0.87	4.26	0.59	111.23***
Ability	2.45	0.85	4.15	0.61	109.23***

* p < .05; ** p < .01; *** p < .001

Secondary Analysis

Simple effect comparisons were used to understand how ratings of MI skills in the role play scenarios changed before and after treatment in both groups combined. It is important to note that all comparisons within this section revealed highly significant differences (p = < .001)

unless otherwise stated. The results are presented in Table 6 and depicted as graphs in Figures 1 through 4. In addition to the combined effects, a within-group comparison compared the long-term follow-up effect of repetitive practice by group.

Our analysis revealed significant differences in MI skills for both groups combined over the course of the semester. Comparing total reflections, cells A and E (T1) showed a mean difference of 5.57 (*SE* = 0.29) compared to cells C and G (T3) and 6.07 (*SE* = 0.36) compared to cells D and H (T4). The reflections-to-questions ratio improved, with cells A and E showing a mean difference of 1.06 (*SE* = 0.13) compared to cells C and G and 1.41 (*SE* = 0.18) compared to cells D and H. MI-consistent responses increased, revealing a mean difference of 4.72 (*SE* = 0.63) for cells A and E compared to cells C and G and 4.88 (*SE* = 0.71) compared to cells D and H. Moreover, conversation blockers decreased, with cells A and E showing a mean difference of 1.64 (*SE* = 0.25) compared to cells C and G and 1.83 (*SE* = 0.29) compared to cells D and H. Lastly, when comparing C and G (T3) and D and H (T4), the only dependent variable that demonstrated a significant difference was conversation blockers (p = .024) with a mean difference of 0.19 (*SE* = 0.08). These findings emphasize the impact of the DP/MI workshop and continued practice throughout the semester in enhancing and maintaining MI skills. Notably, the decrease in conversation blockers was the only skill that exhibited a statistically significant change across repetitive time periods in the study.

Lastly, the results were insignificant when students assessed their role-play performance using follow-up questions. We conducted comparisons across different time points and groups, specifically focusing on attentiveness, anxiety, difficulty, and helpfulness (refer to Table 8). However, no statistically significant differences were observed in these variables when

comparing time 1, time 2, and time 4. Students consistently reported similar feelings throughout the semester after their skill demonstrations.

Table 8

Post-Skill Demonstration Self-Report Ratings by Time

Variable	Time 1		Time 2		Time 4	
	M	SE	M	SE	M	SE
Treatment						
Attentiveness	3.27	0.12	3.36	0.13	3.82	0.08
Anxiety	2.32	0.22	2.55	0.22	2.23	0.25
Difficulty	2.55	0.22	2.59	0.18	1.91	0.17
Helpfulness	3.27	0.21	3.41	0.19	3.95	0.18
Waitlist						
Attentiveness	2.88	0.15	3.25	0.16	3.81	0.10
Anxiety	2.44	0.26	2.38	0.26	2.25	0.29
Difficulty	2.56	0.25	2.63	0.22	2.06	0.20
Helpfulness	3.31	0.24	3.50	0.23	3.63	0.21

Note. This table presents analysis results for 22 participants in the treatment group and 16 in the waitlist group across time 1, time 2, and time 4 for each variable. Findings align with mixed model analysis, accounting for missing data (e.g., 4 missing values for attention at time 2, 8 for attention at time 4, 3 for anxiety at time 2, 8 for anxiety at time 4, 3 for difficulty at time 2, 8 for difficulty at time 4, 3 for helpfulness at time 2, and 8 for helpfulness at time 4).

Discussion

The purpose of our study was to add to the growing body of literature on using DP to develop and maintain MI helping skills for novice helpers in preparation for graduate programs or careers in the helping professions (Knox & Hill, 2021; Mahon, 2022). We sought to understand if learning MI through DP principles and practice would be possible with novice

helpers in a semester-long course. Existing evidence suggests that earlier pretraining in interpersonal skills may predict overall competence outcomes (Rose et al., 2023), aligning with Ericsson's (1993) suggestion that commencing DP earlier in life may increase the likelihood of acquiring expertise. Addressing whether to prioritize personal development or acquire and refine helping skills, this research provides evidence that novice helpers can initially concentrate on technical skills (Barkham & Lambert, 2021). MI provides a practical approach to teach helpers basic reflective listening skills. Despite not employing a DP method, prior research using similar instructional resources has shown undergraduates can learn MI (Madson et al., 2013). Novice helpers' interest in pursuing careers in the helping professions provides an ideal setting (i.e., classroom) to practice helping skills consistently throughout a longer duration of time (i.e., semester) (Hill et al., 2008). Our study aimed to assess the impact of teaching MI through DP principles, primarily focusing on reflective listening and continual practice. We hypothesized two main outcomes: 1) increased observer-rated reflective listening and consistency in OARS helping skills, coupled with a reduction in MI-inconsistent responses, and 2) increased self-report knowledge and ability in MI pre- to post-course.

Primary Findings

Student Improvement in MI

Our study suggests additional support for integrating DP principles into undergraduate courses, indicating that undergraduate students can effectively learn and apply basic MI-helping skills. Several findings support this conclusion. First, students demonstrated increased MI-helping skills after the DP workshop, aligning with Westra et al. (2021) that DP workshops can lay the foundation for MI skills. Key workshop features consisted of teaching a specific skill, involvement of an MI expert, and including effortful practice. Despite the workshop's brevity, it

mirrored traditional MI training outcomes (Miller & Mount, 2001). Observers' post-workshop ratings revealed an improved reflections-to-questions ratio, consistent use of MI OARS skills, and reduced MI-inconsistent statements. Targeted training on reflective listening likely influenced various skills (Perlman et al., 2023). For instance, as students increased their frequency of reflective skills, they simultaneously decreased the number of questions asked. The treatment group maintained MI OARS skills during the follow-up period and further increased their reflections-to-questions ratio. The workshop proved to be a crucial step in learning to use MI helping skills.

The emphasis on the "R" in OARS enhanced the potential for accurately interpreting the partner's perspective (Larsson et al., 2023). Perhaps aiming for a criterion of two reflections per question can be skill objectives or goals to meet throughout training. Encouraging students to engage in training exercises that required two reflections per question resulted in possibly reduced speaking by the student helper (Hill et al., 2008). The workshop shifted students' focus towards actively listening and understanding their partner's thoughts. The combination of DP and MI principles deepened students' understanding of how their reflections resonated with their partner, taking into account verbal and nonverbal cues. Following MI's suggestion for practical on-the-go application (Miller & Rollnick, 2023), these skills can extend beyond the classroom setting. The emphasis on reflective listening amplified awareness and equipped helpers with a diverse range of skills, including reflections on feelings, content, underlying meaning, summaries, and affirmation of client strengths during helping sessions. As a result, students effectively translated their learning into observable behavioral skills.

Reduction in MI-Inconsistent Responses

Second, our study revealed a significant reduction in MI-inconsistent responses (i.e., conversation blockers). This finding supports Miller et al.'s (2004) research, emphasizing that understanding MI-inconsistent responses may be as effective as MI-consistent responses. Notably, the waitlist group experienced the most substantial decrease, particularly after participating in the workshop. This finding shed light on a workshop exercise exposing students to both good and poor models of MI sessions. For instance, a video depicting a nurse overly relying on closed and directed questions was presented as a poor MI scenario. This approach hindered the client's ability to provide detailed answers and restricted discussion. By illustrating the limitations of such a directive style, the workshop emphasized the importance of mitigating such practices for meaningful conversations. Teaching or observing *roadblocks* to good listening could benefit novice helpers (Gordon, 1970). While it is not inherently harmful for a helper to ask a closed-ended question or offer advice without permission, restraining personal biases, known as the fixing reflex, appears useful for increasing reflections. Consequently, these findings propose that MI can be an additional model for teaching helping skills to novice helpers (Hill et al., 2016).

Increased Knowledge and Self-Efficacy

Third, in addition to differences observed by trained raters, students reported increased knowledge and ability (i.e., self-efficacy) in using MI skills pre- to post-course. This finding aligns with Hill et al.'s (2008) learning outcomes. However, the transferability of these skills into more advanced stages (i.e., insight, action) or skills remains unclear. We speculated that a higher frequency of MI skills (i.e., MI-consistent responses) corresponds to increased proficiency in accurate empathy (Miller, 2018). Similar to Hill's model, MI serves as a credible framework for

understanding the helping process, guiding novices through purposeful sessions. Perhaps this "framework" is necessary for novices to walk through and understand *how* to help, yet we did not cover the non-verbal aspects of helping sessions in depth (Hill, 2020). Additionally, we did not assess the impact of these skills on how partners felt after helping sessions, termed "credibility" by Hill et al. (2008). An additional extended practice period might be necessary to influence this outcome. Our findings suggest students connected their knowledge and ability ratings with observed performance.

Recording sessions with volunteer partners added a unique element, allowing students to practice helping skills naturally. The DP/MI workshop, serving as an introduction, offered sufficient information for practice without the need for didactic supervisory feedback, as highlighted by (Anderson et al., 2020). Essentially, students could have cultivated confidence through the repetition of helping sessions. The repetitive theme of practice, coupled with self-report ratings on knowledge and ability, strongly supported MI's adaptability for novice helpers (Knox & Hill, 2021). The simplicity of learning MI and proactively practicing reflective listening can be advantageous (Miller & Rollnick, 2023). As evidenced by students, the understanding and confidence to apply MI resulted from grasping *how* to use helping skills and providing students with additional strategies for overcoming challenges (Ahn et al., 2023).

Observer ratings and self-reported measures complemented primary findings. Students concluded the semester with increased knowledge and the ability to apply MI for discussing change topics with a volunteer partner. Improvements in skill performance, characterized by a higher reflections-to-questions ratio, enhanced MI-consistent responses, and reduced MI-inconsistent responses, suggest that teaching through a DP method, introduced via a DP/MI workshop, can yield significant changes. Comparable to (Anderson et al., 2020) on FIS,

understanding MI may not be necessary to start practicing fully. This experiential teaching method can be provided to novice helpers interested in the helping professions. Indeed, undergraduate students can learn MI helping skills demonstrated by subjective and objective measures through a three-hour workshop and repetitive practice throughout the semester. Ultimately, these skills aim to improve the quality of care for the general public and improve students' personal growth and interpersonal relationships (Hill et al., 2020).

Secondary Findings

The DP/MI workshop and focused 20-minute practice in each class demonstrated sustained or improved skill performance in both groups. This combined intervention is supported by statistically significant changes in all dependent variables when comparing time 1 to time 3 (post-workshop) and time 1 to time 4 (post-course). A notable skill shift was observed between time 3 and time 4, particularly in reducing MI-inconsistent responses. Following the workshop, both groups exhibited enhanced MI-skill performances, approaching the semester's criteria for a two reflections per question ratio. Initially displaying MI-inconsistent responses, the waitlist group positively altered their performance trajectory, while the treatment group showed an initial increase followed by stabilization, resembling patterns observed in previous research (Westra et al., 2021). Time seems to be an essential factor in training novice helpers. These findings suggest that a semester-long course, 20 minutes of focused skill practice per class, and repeated video-recorded and graded assignments are sufficient for maintaining and improving basic MI skills.

Our study revealed a discrepancy between observer and pre/post-course ratings compared to post-session self-reported assessment after role-played skill demonstrations. Despite students' belief in understanding MI and increased confidence post-course, their post-session ratings did not consistently align with these perceptions, adding nuance to our findings. Interestingly, they

seemed to lack understanding of their performance after each role-play, as no observable changes in ratings occurred throughout the semester-long course. Students maintained consistent levels of perceived attentiveness, anxiety, difficulty, and helpfulness for each recorded helping session before and after the course. This discrepancy suggests that students enhanced their MI skills without conscious awareness, possibly indicating a lack of reflectivity (i.e., self-awareness) in post-video demonstrations (Knox & Hill, 2021; Meekums et al., 2016). The uncertainty within novel role-plays may have presented unique challenges, requiring students to adapt to potential changes in their partner's target behaviors during each skill demonstration. Novice helpers may lack the experience necessary to judge their effectiveness.

This study provides preliminary insights into employing DP principles to learn and refine MI helping skills among novice helpers interested in the helping professions. Despite not incorporating all previously mentioned DP principles (Ericsson, 2021), the potential effectiveness of including one or a few DP principles is promising. The classroom, with its extended duration for DP, remains an ideal setting for repetitive practice. Rather than relying on traditional teaching methods, expert-guided experiential opportunities for undergraduate students offer preparation for future helping professions. With specific skills and processes, MI gives novice helpers the confidence to demonstrate basic MI helping skills.

Implication for Research and Training

The observer ratings in this study contribute valuable insights into the efficacy of DP on skill performance. Notably, much criticism of DP research is rooted in self-reported measures during solitary practice (Baldwin & Imel, 2013; Chow et al., 2015). However, this study addresses this limitation by objectively measuring skill frequency and aligning observed skill with perceived ability. Using a video-ready software tool for measurement proves effective,

allowing the recording and later coding of skill demonstrations. While we employed 5–10-minute recordings, the flexibility of GoReact permits adjustments to video duration and frequency. Moreover, GoReact's adaptability to record with a partner outside the classroom introduces a unique aspect to this study. Having four recorded conversations about change, voluntarily chosen by partners, provides a natural setting that challenges helpers to adapt to their partner's context. GoReact also allows coding for helper and partner statements (Di Bartolomeo et al., 2021). The versatility of GoReact offers a distinct advantage for future DP studies, enabling a multi-method approach to measure perspectives from helpers, partners, and trainers (Knox & Hill, 2021). Future studies can use GoReact, DP principles, and MI as a comparison group with novice helpers or for replication purposes, further expanding the understanding of their combined impact on helping skill development. We recommend consistently including observed skill ratings in training sessions to monitor how often skills are used and how partners react, providing a continuous and dynamic assessment of skill development. With the advancement of AI technology, it may be feasible to find AI-generated coding, which would improve the reliability of coding.

This study's findings suggest incorporating DP to teach MI helping skills among undergraduate students interested in entering graduate school or the helping professions. This research introduces MI as a theoretical framework for developing helping skills, emphasizing skill enhancement within novice helpers by integrating DP principles, including expert-guided experiential learning opportunities. The DP/MI workshop and ongoing practice throughout the semester gave undergraduate students the knowledge and confidence to apply MI core skills in guiding conversations about change. A noteworthy discovery is the students' ability to use DP to enhance MI OARS skills while significantly reducing MI-inconsistent skills, particularly within

a novice helper population. This novel finding emphasizes the potential of teaching MI using a DP method to reduce unwanted helper behavior. The study proposes that the malleability of novice helpers provides a reasonable starting point for DP practice, fostering skill development that can benefit students throughout graduate school training and future careers in helping professions. This experiential opportunity holds the potential to enhance clinical expertise throughout a helping career. This study can also provide a way to work on more advanced helping skills training methods and monitor these skills throughout longer durations.

Limitations

Several limitations are inherent in this study. First, the small and homogenous sample of 45 predominantly female and Caucasian students restricts diversity, with a major interest in helping professions suggesting an intrinsic motivation for learning basic helping skills. The generalizability of results is confined to novice helpers, excluding populations with more years of experience, and uncertainties surround acquiring and applying these learned skills in different contexts. The absence of client feedback forms raises concerns about the quality of mock client experiences. Secondly, the study occurred in a naturalistic classroom setting, primarily focused on education (Hill et al., 2008). For example, students could easily read the syllabi or other course material before skill demonstrations. All students had to participate in the DP/MI workshop, and the instructor had to prioritize the classroom needs before the study. Similarly, the instructor's influence on students is uncertain (Ahn et al., 2023). Third, self-report measures with few questions raise concerns due to the oversimplification of constructs such as attentiveness, anxiety, difficulty, and helpfulness. A single question for each construct may not fully capture the underlying complexities, suggesting the need for more questions or post-session partner assessments on the perceived efficacy of helper skill demonstration.

Future Direction

Despite its limitations, our study provides valuable insights into the practical application of DP within an MI orientation for novice helpers, demonstrating the feasibility of teaching MI with DP principles as an experiential learning opportunity highly valued by students (Hill, 2020). We believe it contributes to the knowledge of effective teaching methods for novices in the helping professions, emphasizing the value of experiential learning over traditional instructional approaches (Chow et al., 2015). We encourage using our study as a foundation for teaching helping skills to novices, equipping them with purposeful intention in basic helping skills in diverse clinical situations (Knox & Hill, 2021).

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Figure 1

Observer Rated MI Skills for Groups by Time for Total Reflections

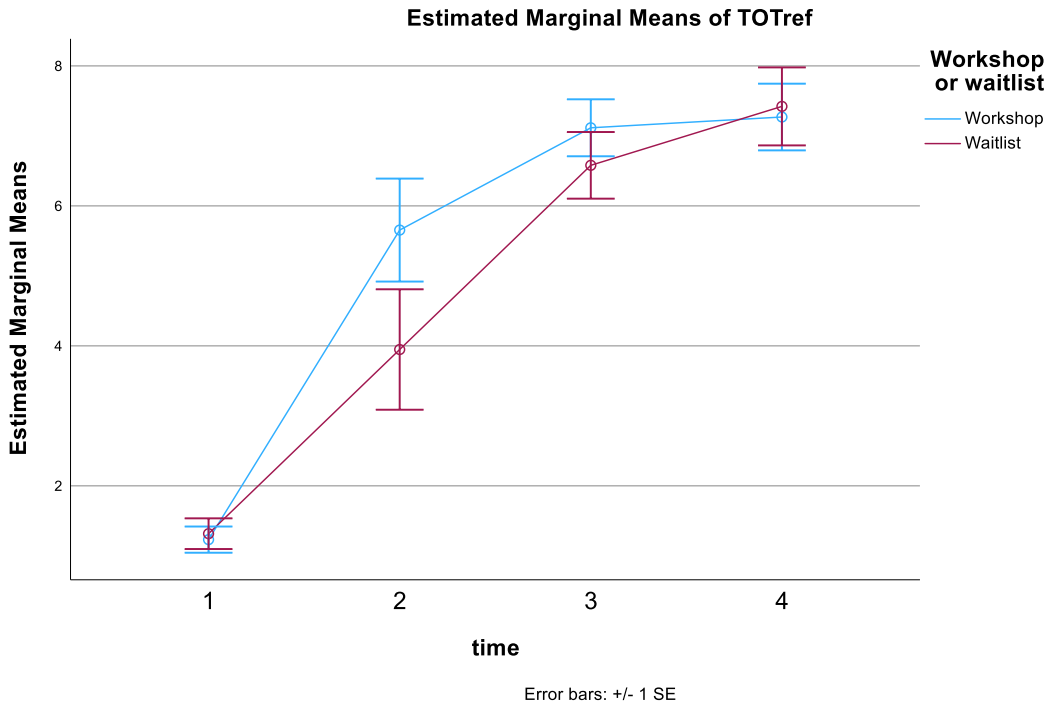


Figure 2

Observer Rated MI Skills for Groups by Time for Reflections-to-Questions Ratio

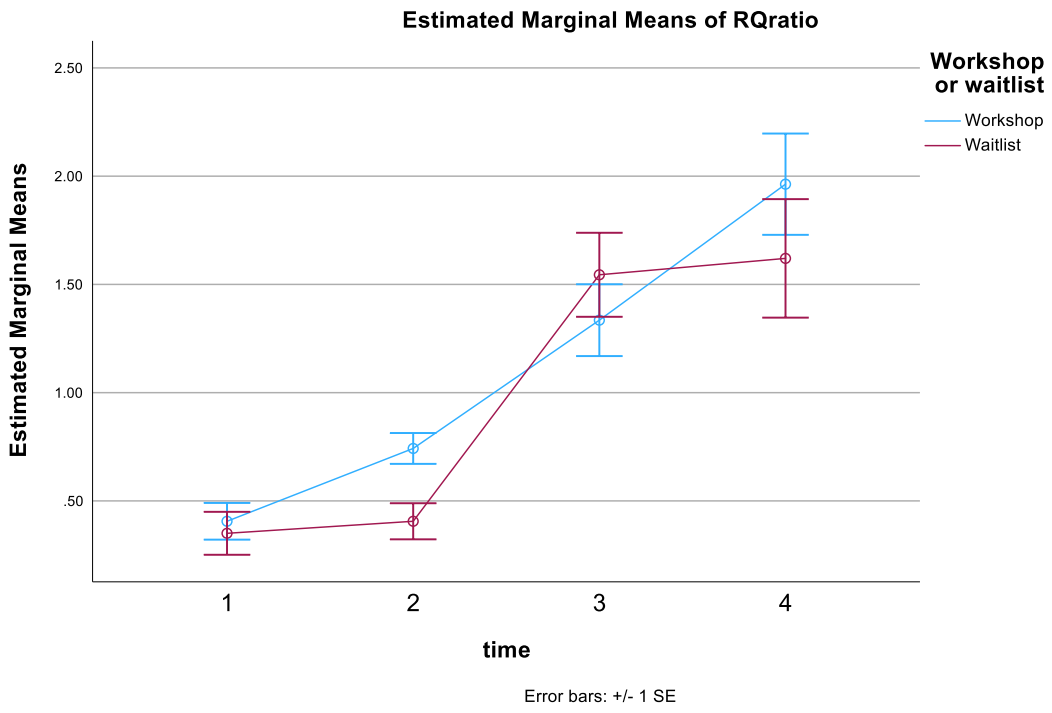


Figure 3

Observer Rated MI Skills for Groups by Time for MI-Consistent Responses

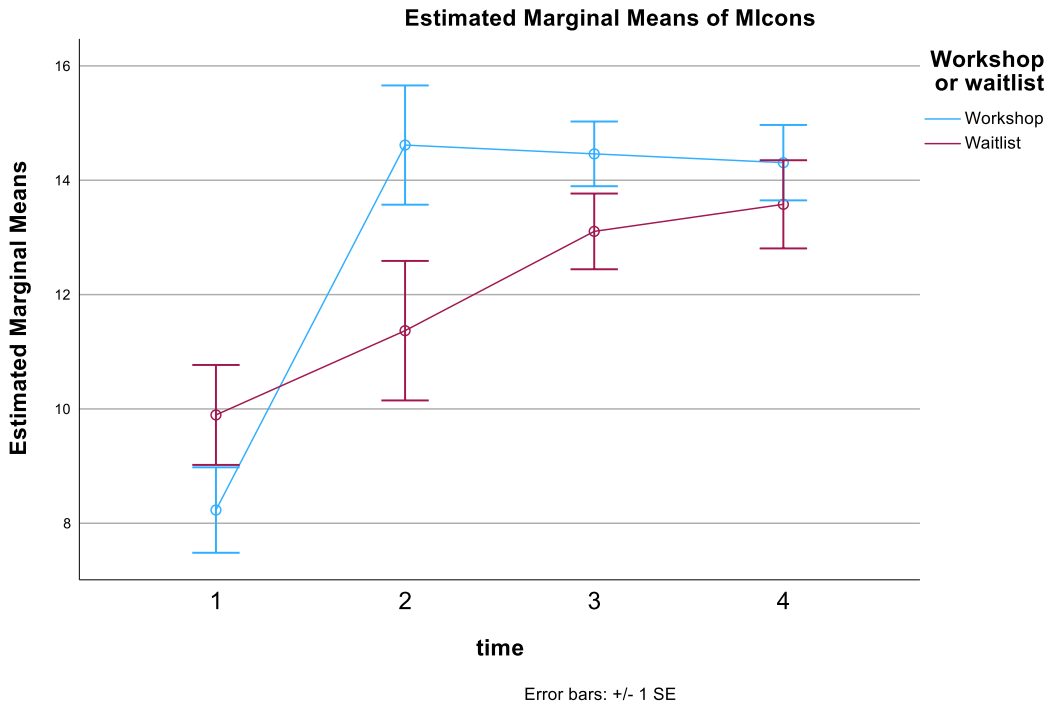
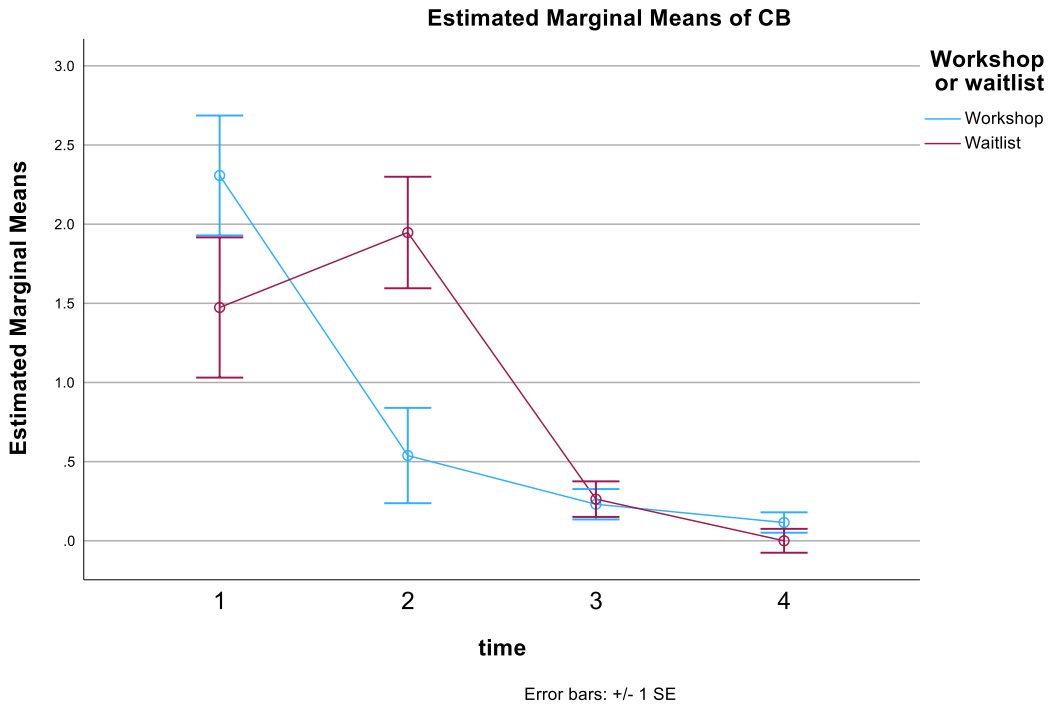


Figure 4

Observer Rated MI Skills for Groups by Time for Conversation Blockers



Note. Conversation Blockers are coded as MI-inconsistent responses.

Appendix

Instructions for Class Skill Demonstration 4

Like the other helping skills assignments, you will do this real play with 1 of your classmates (or a friend or family member) - 1 helper, 1 client. This time do a real play using primarily the OARS skills but add these 7 specific skills:

1. EPE - elicit-provide-elicit for information sharing or feedback.
2. Confidence Ruler
3. Reviewing past successes.
4. Amplified Reflection (for sustain talk)
5. Double-sided reflection (for sustain talk)
6. Reframing (either for sustain talk or building hope and confidence).
7. Summary (recapitulation) and Key question (at the end)

The video need not be long - it may only be a few minutes - just enough to demonstrate using each of the advanced skills one time each (Max 8 minutes in GoReact).
The person in the client role should pick a real, but innocuous issue they wish they could change (e.g., drink less caffeine, exercise more, go to bed earlier, study more, etc.). Working on real issues is better practice than working on made up situations that you role play. That is why we call it a "real play." It should NOT be a more serious, personal issue.
Once you video record the real play, you will review it and rate each client and helper statement using the markers in GoReact followed by rating yourself using the rubric. This allows you to categorize each of the helper statements as open-ended questions, affirmations, reflections, summary statements, EPE/ATA, confidence ruler, reviewing past successes, amplified reflection (for sustain talk), double-sided reflection (for sustain talk), reframing (either for sustain talk or building hope and confidence) or other (e.g., closed ended question, conversation blockers). You categorize client statements as change talk or sustain talk.

Some Tips for the helper:

1. In the typical therapy session, you may listen quite a while using OARS skills before moving into advanced mode. **In this demonstration, start the video as if you just had 10 minutes of listening with regard to an issue presented by the client and then start with a summary statement then keep going.**
2. Insert some reflections in between the advanced skills, it will help the tape to flow better.
3. In typical therapy, these advanced skills are not used equally - some are frequent and some are more rare. You only need to demonstrate each skill once so the video may seem not to flow well and that is ok.
4. Since amplified reflections and reframe statements are often used in response to sustain talk, you may need to induce sustain talk in order to use them. An open question such as, "What is keeping/preventing you from changing?" is often helpful in that way.