Chapter 12
Updating Training in the Medical Field:
The TARGET Model and Its Applications to Remote Learning

Brandon Matsumiya
University of Central Florida, USA

Clint A. Bowers
University of Central Florida, USA

ABSTRACT

This chapter briefly reviews the literature that explores the training technique of deliberate practice and the related constructs, training outcomes of achievement goal orientation, self-efficacy, perceived instrumentality, and reflective practice. This work explains how educators can use and measure these variables to enhance current training methodologies. As part of creating more effective training, the TARGET model, developed by Ames, will be utilized to discuss potential ways to enhance training outcomes in a post-COVID-19 world. Specifically, suggestions are offered for enhancing online training using deliberate practice combined with the TARGET model within a medical setting where there are limited resources.

INTRODUCTION

COVID-19 has changed the landscape in terms of patient care. The shift to virtual and remote environments took great adjustment, as many practitioners were not familiar with the technical and nontechnical skills needed to adjust to this new setting. Additionally, established skills or techniques that were effective in person had to be adjusted for working virtually or remotely. For educators, the shift to online or remote training also entailed difficulties in transitioning to not only training students in therapeutic skills virtually, but also evaluating students' skills in these techniques without seeing them perform the

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skill in person. One model that could be helpful for addressing both of these concerns is the TARGET (task, authority, recognition, grouping, evaluation, and time) model by Ames (1992).

The TARGET model outlines a way to construct tasks in a training environment such that they will elicit more involvement by the student in their own learning. Tasks should be planned and developed in a manner that is relevant to students, is moderately challenging, and allows them to demonstrate their abilities through a variety of assessments. Authority in tasks should be set so that both instructors and students share responsibility for learning, and students can exercise autonomy through the learning process. It is important to recognize students' efforts privately to reduce competition and focus on students' effort and progress rather than provide feedback that references a group standard. Group collaborative assignments can decrease competition between students and can develop a sense of belonging within the program or profession, especially when focused on real-world applications. Evaluations should be focused on progress, improvement, and mastery, rather than being norm-referenced or solely based on outcomes. Finally, time should be as flexible as possible, as each task may vary in terms of the time needed for completion.

Although the TARGET model provides an idea of how to construct tasks, it does not address how to enact skill change from these tasks. One technique that does so is deliberate practice. Deliberate practice comes from the work of K. Anders Ericsson (1993)and focuses on the how to transform a student's performance on a task from novice to expert. Together, deliberate practice and the TARGET model can provide a framework for creating better practitioners in a remote environment.

The objectives of this chapter are to review the literature on deliberate practice and the related constructs of achievement goal orientation, self-efficacy, perceived instrumentality, and reflective practice. We also explore how these constructs combine to enable not only superior training, but also superior evaluation of students. The chapter discusses the TARGET model and how these constructs fit within it. Finally, the chapter provides suggestions for future research and means of applying TARGET to future technological interventions for training.

BACKGROUND

Ericsson derived the idea of deliberate practice from his work on expertise, or developing the characteristics, skills, and knowledge that distinguish experts from novices or less-experienced individuals (Ericsson, 2018) across a variety of domains, including music (Ericsson et al., 1993), sports (Shea & Paull, 1996), and medicine and surgery (Norman et al., 2018). Ericsson's research suggested that experts are made through hard work and diligent practice, rather than by innate talent. He defined the work needed to become an expert as deliberate practice, the individualized training activities designed to improve specific aspects of one's performance through repetition and successive refinement (Ericsson et al., 1993). By engaging in these effortful and relevant tasks, and by utilizing feedback from an instructor or coach, a student can incrementally increase their skills, which will eventually lead to superior performance (Ericsson et al., 1993).

In medicine and surgery, superior performance has been linked to deliberate practice (Duvivier et al., 2011; Issenberg et al., 2002; Wayne et al., 2006). One meta-analysis found that deliberate practice had a large effect on enhancing clinical skill acquisition when compared to standard medical education (McGaghie et al., 2011). However, an important caveat is that the outcomes of deliberate practice are related to the need to concentrate and focus on the improvement of the skill, rather than just the repeti-

tion of the skill over time (Ericsson, 2006; Miller et al., 2017). It is the effort involved, not the time spent, that matters. Specifically, many individuals will become routine experts when they can handle the typical difficulties that arise as part of their practice without an investment of cognitive resources (Ericsson, 2007). True experts, though, will arise when they exercise cognitive resources and attempt to develop a better understanding of the situation (Ericsson, 2007). As Tracey and colleagues (2014) attest, practitioners must constantly strive to improve themselves, reaching for goals just beyond their current ability if they wish to continue to improve.

The main takeaway from deliberate practice for future training is that, to aid students in becoming experts, conditions must be created so that they can practice tasks repeatedly. These tasks must be of moderate difficulty and be conducted such that the student can repeat the process, receive feedback, and then try again until they are performing the task at the standard needed.

Comparing someone's performance on a task to an objective standard is important, but not always the most feasible strategy, especially when operating remotely. In the latter scenario, gathering information from multiple sources will benefit not only students but also instructors in improving students' performance and learning. Constructs that can provide information on improving students' performance include achievement goal orientation, self-efficacy, perceived instrumentality, and reflective practice.

Achievement goals are cognitive representations focused on an end state involving an interpretation of one's competency (Hulleman et al., 2010). They are split between mastery and performance goals. Mastery goals focus on general self-improvement, developing competence, and achieving task mastery, whereas performance goals focus on demonstrating competence and outperforming one's peers (Ames, 1992; Korn & Elliot, 2016). The mixed effects of performance goals on outcomes led to the examination of the valence of performance goals. While performance goals were found to influence outcomes, performance approach at times acted similarly to mastery goals, while performance avoidance was found to be associated with more negative results (Elliot & Harackiewicz, 1996). Performance-approach goals focus on striving to do better than others; performance-avoidance goals represent striving to not do worse than others (Elliot & Harackiewicz, 1996). As more research was conducted, mastery goals were also divided into approach and avoidance, where the former focus on striving to attain mastery or improvement, and the latter focus on striving not to fall short of task mastery or not to lose one's skills, abilities, or knowledge (Elliot & Thrash, 2001).

A meta-analysis by Payne et al. (2007) found that three orientations—mastery approach, performance approach, and performance avoidance—were related to performance on the job after training. The mastery approach and performance approach were consistently found to be associated with more positive outcomes than performance avoidance, although these outcomes differed between mastery approach and performance approach. Self-efficacy, a variable strongly associated with training outcomes, has been found to be linked to stronger mastery approach and not associated with performance avoidance. Additionally, feedback, one of the critical features of deliberate practice, was sought in those with higher mastery approach, while those high in performance avoidance were less inclined to do so. Individuals high in performance approach would seek out feedback only when they thought they did well. Additionally, performance approach and performance avoidance were both more likely to have a higher state of anxiety, whereas mastery approach was found to have a lower state of anxiety. The overall findings suggest that mastery approach is the most helpful orientation for students to have, although performance approach can be beneficial as well. However, mastery approach was found to predict performance above and beyond other well-known antecedents, such as cognitive ability and the Big Five personality traits (i.e., agreeableness, conscientiousness, extraversion, emotional stability, and openness to experience)

(Digman, 1990), suggesting that those who have a mastery-approach orientation are likely to perform better on the job.

The fourth orientation, mastery avoidance, has not been as well studied (Huang, 2016) even though it is the second most-endorsed goal (Baranik et al., 2010). A recent meta-analysis by Baranik and colleagues (2010) examined mastery avoidance. They found that a mixture of positive and negative outcomes, such as competitiveness, need for achievement, negative affect, and interest, were positively related to mastery-avoidance goals, whereas cognitive ability was negatively related to mastery avoidance. In contrast, performance-approach goals were related to competitiveness, and negatively related to variables such as perceived competence, positive affect, help-seeking behavior, and performance. The analysis also suggested that older measures, such as the Achievement Goals Questionnaire (AGQ) and the Patterns of Adaptive Learning Scales, were not adequately capturing mastery-avoidance goals and differentiating them from PAV goals (Baranik et al., 2010; Huang, 2016). Therefore, updated measures (e.g., the Achievement Goals Questionnaire Revised, or AGQ-R) may more appropriately assess achievement goals because they gather information on all four orientations.

In addition to performance outcomes, training is also influenced by achievement goals. Mastery-approach goals are linked to strong positive influences on transfer, whereas performance-approach goals have a weak effect on transfer, and performance avoidance is negatively related to transfer (Laine & Gegenfurtner, 2013). Mastery-approach goals have been positively linked to self-efficacy (Huang, 2016), although performance approach is also positively related to self-efficacy, albeit to a lesser extent. Mastery-approach goals predicted the development of perceived psychosocial abilities, and higher levels of performance-avoidance goals inhibited the development of perceived psychosocial abilities (Madjar et al., 2015). Performance-approach goals have a positive effect, but less than that of mastery-approach goals, and are linked to other negative outcomes, such as negative responses to setbacks and immediate over long-term focus in terms of learning, which may lessen their desirability as an orientation within the training of healthcare professionals (Madjar et al., 2015; Midgley et al., 2001; Payne et al., 2007). Achievement goals can be modified by feedback such that positive feedback leads to a decrease in performance-avoidance goals, and negative feedback leads to a decrease in performance-approach goals, suggesting that performance orientations may be more malleable to change, whereas mastery-approach goals are more stable in comparison (Muis & Edwards, 2009). It is important to note that, while mastery-approach goals are the most stable, there are ways to enhance their development in students, such as the TARGET model (Ames, 1992; Madjar et al., 2015).

The main takeaway is that students will enter programs with different kinds of achievement goal orientations. These goals focus on an end state where their competency is evaluated. The most useful goal orientation for students and instructors is the mastery-approach orientation, as it is linked to the most positive outcomes in terms of performance, transfer, and its connection to other training variables. Mastery-approach goals are more stable than performance-approach goals and can be enhanced using the TARGET model. Mastery-approach goals are important to examine, but self-efficacy, another notable training outcome, can provide information about students' attitudes in addition to their behaviors, such as deliberate practice (Burke & Hutchins, 2007).

Self-efficacy is defined as beliefs regarding one's capabilities for a particular task or endeavor (Bandura et al., 1977), and it acts as the cornerstone for several contemporary theories regarding motivation (Locke & Latham, 1990; Schunk, 1989). Self-efficacy is positively related to a wide array of outcomes, such as persistence and performance in adversity (Schmidt & DeShon, 2010) and enhancing motivation and performance (Bandura & Locke, 2003). Students high in self-efficacy are more likely to engage in

more maintenance activities post-training (Stevens & Gist, 1997), are more likely to hold a mastery-approach orientation (Huang, 2016), and will expend greater effort and persevere longer (Bandura, 1986) than students who are low in self-efficacy. Likewise, those higher in self-efficacy will typically engage in more effort, persistence, and use more cognitive resources than those with lower self-efficacy (Greene et al., 2004).

Bandura (1982) hypothesized that enactive mastery experiences, vicarious experiences, and verbal persuasion could act as sources of self-efficacy, all factors that can occur during a graduate student's education. Enactive mastery experiences, the authentic successes a person experiences in dealing with a particular situation (Bandura, 1997), can be powerful for creating self-efficacy. Notably, to increase long-lasting self-efficacy, overcoming obstacles and difficult situations is necessary through the maintenance of effort and persistence (Bandura, 1997). Vicarious experience can also be a powerful factor. Early on, when self-efficacy is low, the vicarious experience can have a stronger effect than when existing self-efficacy is higher (Bandura, 1997). Students will often receive feedback or encouragement that they can perform a task (Schunk, 1983), which can act as verbal persuasion. Feedback is effective primarily when the person providing it is viewed as knowledgeable and reliable, and the feedback is realistic (Bong & Skaalvik, 2003). Bandura is careful to emphasize that self-efficacy does not directly arise from these three sources; rather, it occurs through the cognitive appraisal of the situations (Bandura, 1986; Bandura et al., 1977).

The construct of self-efficacy benefits training as well as academic outcomes because it is amenable to intervention as theorized above and verified through the empirical literature (Burke & Hutchins, 2007; Kraiger et al., 1993; Salas & Cannon-Bowers, 2001; Salas et al., 2012; Van Dinther et al., 2011). As proposed by Kragier et al. (1993), self-efficacy can moderate the relationship between knowledge acquisition and subsequent performance. Additionally, self-efficacy was suggested to be a useful predictor of long-term transfer of knowledge or skill maintenance (Blume et al., 2010; Harned et al., 2013; Kraiger et al., 1993).

The main takeaway from self-efficacy is that it is a malleable construct linked to positive outcomes in training, including performance, retention, and transfer. It is theorized to increase when students can engage in activities where they authentically succeed, see others perform the activity, or even when receiving feedback about their performance. The cognitive appraisals the student makes about these experiences lead to the formation of higher self-efficacy, which in turn lead to increased benefits in performance. One construct that measures these cognitive appraisals students make is perceived instrumentality, which focuses on the evaluations a student may make about the training and the effort they wish to employ in learning the material (Chiaburu & Lindsay, 2008).

Perceived instrumentality is a related motivational construct that touches on both achievement goal orientation and self-efficacy. Perceived instrumentality is the individual's belief that performing a specific behavior will lead to a desired outcome (Chiaburu & Lindsay, 2008). Instrumentality partially influences achievement goals via personally valued future goals, and how the training or intervention may impact the attainment of that goal (Greene et al., 2004). It also can influence the outcome of training through its impact on motivation to transfer, a related factor to motivation to learn, which in turn is influenced by self-efficacy (Chiaburu & Lindsay, 2008).

To tap into perceived instrumentality, it is important to evaluate what students are aiming to obtain from the training or course. Trying to convince students to adopt mastery-approach goals when they lack interest in the topic and do not see utility in the information is impossible. Instead, emphasis on future utility of the task, whether it be in the near or distant future, can aid in transfer of information

from training (Greene et al., 2004). Students, like employees, will make calculations about analyzing outcomes associated with training and determine whether or not the outcome is worth the effort involved (Quratulain et al., 2019). Therefore, ensuring that students see the benefits of the training for their future goals is an important component of any training.

The main takeaway about perceived instrumentality is that training must confirm that students see the utility of the training for their future roles or goals. Merely telling students that the training is important, or strongly encouraging them to take part for their "own knowledge," is insufficient to ensure transfer. Emphasizing the benefit for future outcomes—be it skills gained, knowledge to be used, or negative outcomes to be avoided—plays a role in promoting positive training outcomes (Chiaburu & Lindsay, 2008).

These factors all contribute significantly to the development of expertise. The mastery-approach orientation may influence the development of self-efficacy (Harackiewicz et al., 2008). Self-efficacy represents the beliefs that the expert has in their ability to accomplish their task, their willingness to continue engaging in the planning, and the self-analysis required to solve complex and difficult problems. Perceived instrumentality influences the likelihood that training will transfer after the student leaves. However, to get to the point of expertise, a key element is responding to feedback, whether in terms of performance in an academic setting (Alexander, 2004; Alexander et al., 2004) or through responses to treatment in a clinical setting (Ericsson, 2004, 2007, 2015; Norman et al., 2018). Using feedback, novices can make incremental progress toward a closer approximation of expert performance (Ericsson et al., 1993) and develop their expertise to a higher level. Although deliberate practice utilizes feedback to enhance specific behaviors, a construct that integrates feedback throughout the process is reflective practice (Cooper & Wieckowski, 2017).

Reflective practice refers to the act of reflecting on clinical experience, including personal reactions, attitudes, and beliefs (Bennett-Levy et al., 2009). Reflection requires intentionally focusing one's attention on a particular context, clarifying the focus, and using knowledge and other cognitive processes (e.g., self-questioning, logical analysis, and problem-solving) to make meaningful links (Bennett-Levy et al., 2009) that make meaning of all information obtained in a session. In essence, reflective practice can be viewed as a form of metacognition in that aspects of reflective practice involve reflecting on oneself reflecting (Mezirow, 1998), similar to the concept of metacognition, which focuses on the cognition of cognition (Flavell, 1979), as well as the monitoring and control of cognition (Efklides, 2008).

Reflection has its roots in Dewey's (1933)(1933) seminal work. Dewey conceptualized reflective thinking as a process that lies between recognizing the problem and the solution to the problem. His model focuses on combining observations of the surrounding conditions, knowledge of what has happened in similar situations in the past, and judgment that combines information from the observations and experience to decide in the moment. Importantly for clinical workers, Dewey believed that, although reflective practice was a rational activity, it also needed to incorporate emotions into the decision-making process.

Another influential work was Lewin's application of reflection in his model of action research (Lewin, 1951). Lewin emphasized that feedback is a vital part of the learning process, and that reacting to feedback and "unfreezing" one's belief system by re-examining assumptions helps enable change to occur. Kolb (2014) discusses how he uses Lewin's theory, as well as Dewey's work and Piaget's work to form his theory of experiential learning. Kolb's experiential-learning cycle focuses on having concrete experiences, reflecting on those experiences, creating conclusions and hypotheses based on those experiences, and actively experimenting to determine the validity of those hypotheses. Gibbs (1988) suggested a cycle of reflection that complements Kolb's learning cycle, where students are encouraged to reflect based on a multistage model, wherein reflections are incorporated into developing further changes in practice.

Gibbs's (1988) theory of the reflective cycle is based on six stages instead of four, focusing on describing the situation and the feelings involved, evaluating and analyzing the experience, and concluding what else could have been done before finally moving to an action plan. Overall, the central idea behind these theories of reflection is that learning is a process that requires students to reflect on their experience in order to translate the experience into further learning and the improvement of skills in practice or learning; this is similar to how deliberate practice utilizes feedback to increase practitioner skill (Cooper & Wieckowski, 2017; Ericsson, 2004; Mamede & Schmidt, 2004). Reflection is the "engine" of practice and guides practitioners to increase the skill even after departing from clinical training (Bennett-Levy et al., 2009). As for engaging in reflective practice in clinical work, Donald Schön specifically applies reflective practice in a model that focuses on what professionals do when reflecting upon their work (Schön, 1983; Schön, 1987).

Schön (1983) proposed a model that contained three conceptualizations of reflection: "knowing-in-action," "reflection-in-action," and "reflection-on-action." Knowing-in-action encapsulates the skills and knowledge that are used every day without conscious knowledge (Schön, 1983; Schön, 1987). It is the knowledge revealed by the spontaneous, skillful execution of the performance. Reflection is triggered when stimulated by surprise, either when something does not go according to plan, or when something interesting occurs (Schön, 1983). Reflection-in-action occurs while we are working, similar to the idea of thinking on our feet. It involves awareness in the moment of our experiences, feelings, and theoretical underpinnings, and how these connect to the problem at hand (Schön, 1983; Schön, 1987). Reflection-on-action is typically what occurs after the event. Through this process, the practitioner explores what happened and why they acted a certain way (e.g., their experiences, feelings, etc.), and develops a richer understanding from this reflection that can be used to alter their future actions.

Treatment manuals often integrate reflection as an important part of the process of learning how to be an effective clinician (Beck et al., 2015; Harris, 2013; Safran & Segal, 1996; Senediak, 2013). Reflection in these circumstances is often taught as a means of examining past experiences, theories, beliefs, and assumptions held by the clinician to help improve future interactions with patients (Park-Taylor et al., 2009). Reflective practice can be taught in groups (Knight et al., 2010; Park-Taylor et al., 2009), or it can be done individually when reflecting upon one's practice (Beck et al., 2015; Beck & Beck, 1995; Binks et al., 2013) or through the use of different role-plays, workshops, or supervision activities (Lavender, 2003).

The main takeaway about reflective practice is that it is the "engine" of ongoing improvements after clinical training. Mastery-approach goals, self-efficacy, perceived instrumentality, and deliberate practice are useful when engaging in training, but instructors will want to ensure that students will carry on focusing on their learning after the student has left their respective program. Reflective practice is a variable that could track this development, that works well with deliberate practice, and that enhances overall training outcomes.

APPLICATION OF TARGET TO TRAINING

Keeping these five factors—deliberate practice, achievement goal orientation, self-efficacy, perceived instrumentality, and reflective practice—in mind, one way that training can adapt to both in-person and remote environments is by utilizing the TARGET framework. As previously described, the TARGET model focuses on six areas to build students' feelings of mastery, and in turn build their self-efficacy as

Table 1. TARGET model (Ames 1992)

Task	• Relevant to students • Moderate challenge • Multiple sources of assessment
Authority	• Shared between instructor and student • Students encouraged to take on autonomy
Recognition	• Private • Focus on students' effort and progress rather than based on a group standard
Group	• Collaborative assignments • Oriented toward real-world examples
Evaluation	• Progress, improvement, and mastery • Not norm-referenced or solely based on outcomes
Time	• As flexible as possible for completion of tasks

well (see Table 1 for an outline of the TARGET model). Utilizing deliberate practice and incorporating reflective practice, students can enhance their outcomes gained from training, and sustain their motivation to transfer the material learned by emphasizing the perceived instrumentality of the learned material.

The following section demonstrates how the TARGET model could be applied to maximize mastery approach, self-efficacy, reflective practice, and deliberate practice within current models of training. After discussing how TARGET could be currently used, suggestions for modifying it for use online will be provided.

First, *tasks* focused on skill development should utilize clinical role-plays, tied in with a form of oral examination and a written portion that are equally weighted toward the student's progress through their training. Doing so will allow multiple avenues of information gathering by the instructor, while giving the student practice not only on the clinical skill, but also on related professional skills the student will utilize in the future (e.g., clinical case presentations, writing skills, oral presentation skills). When first learning the skill, instructors should model the skill for the students, as this will enhance self-efficacy via vicarious learning and provide a mental model for the student to reflect on and compare against when rehearsing independently. Then, running students through rapid role-plays focused on just one part of the skill (e.g., providing education on a treatment option) with short feedback sessions after each run, would moderately challenge the student while slowly exposing them to experiences where they demonstrate mastery of the topic. Feedback should be aimed at not only correcting the student's execution of the skill, but also helping the student begin to reflect on what they missed and how they can improve in the future. These mini-feedback sessions will enhance reflection-on-action while providing scaffolding for reflection-in-action as the student demonstrates improvement. An important note is that these rapid practice sessions can be completed in as little as 20–30 minutes depending on the complexity of the skill practiced. The frequent feedback will enhance reflective practice while also giving the student a benchmark to aim for when practicing the skill on their own. Creating tasks specifically aimed at eliciting reflection may also benefit the student's learning. Emphasis on how these scenarios will benefit the student may also be useful. Finally, providing examples of how mistakes can be made without the knowledge or skill from the training can enhance students' perceived instrumentality of the training and provide a means of giving feedback about the scenario in question.

Authority for the tasks then can be shared between the student and instructor by giving the student an opportunity to set their own goals for improvement by the following session. Doing so allows the student

to demonstrate their desire to improve, encourages them by indicating that the instructor trusts that they will improve, and allows the instructor to assess the student's willingness to learn on their own time. Over time, the instructor can begin working with the student to allow the student increasing autonomy in choosing the cases they see, the specific interventions suggested, the resources consulted, as well as slowly taking the lead in difficult situations with patients. The focus is on shifting authority from the instructor, who traditionally has held most of the decision power, to students, who traditionally have not had the opportunity to demonstrate a desire for mastery in a formal way. Many supervisors may already practice these techniques informally but creating a formal expectation may aid in students taking on these responsibilities earlier, which may enhance mastery and self-efficacy. Relatedly, encouraging students to form study groups or other practice groups where they are in charge of the practice can shift authority from the instructor to the student (Pires et al., 2020). An emphasis on students practicing reflection and taking ownership for mastering reflection outside of work with the supervisor in these groups can also be beneficial (Yusuff, 2015).

Recognition for students' accomplishments can be focused on their growing skills, progress toward their self-identified goals, and reactions to feedback from their supervisor rather than a description of their progress compared to other students in the program. This last part may be more difficult as many supervision groups may have older students who take part in supervision with younger students. However, a focus on inner growth rather than growth as compared to outside entities may help inspire a mastery-approach mindset. As part of this process, crafting assignments or practicums where students can evaluate each other on their genuineness or growth in reflection could be helpful. Creating the expectation that students will enhance themselves through reflection, and creating an environment where recognition is based on improvement rather than comparison to others, will foster a mastery-approach orientation.

Many medical settings will have some form of *group* supervision or group work oriented toward patient care. Shifting the focus toward collaboration, with praise, rewards, and incentives focused on how well students collaborate on patient care, could enhance already positive outcomes. Reminding students about the real-world applications of group work may also address concerns they express about working in a group. Noting the importance of communication across professions in many medical settings and practicing this during a student's training may also boost the effectiveness of group work. Creating reflection groups, where the focus is not necessarily on patient outcomes but on the student's takeaways from sessions, and how the student can continue to improve their technique, could be helpful here. The focus should be on achieving mastery through authentic experiences, reflection on interactions with patients, and providing actionable feedback for the student to utilize in their sessions going forward.

Evaluation, related to *recognition*, would focus as much as possible on individual student progress toward their mastery of clinical skills, rather than on norm-referenced evaluations. The goal of creating a growth mindset, where mistakes (when possible) are understood as acceptable learning opportunities, and then providing additional chances for the student to demonstrate changed behavior should be the focus of evaluation. Comparisons to a norm or standard will have to occur (e.g., surgery, reduction of suicide risk), but in other less black-and-white realms, when possible, evaluation should focus on growth and increasing mastery. Doing so by combining evaluations from peers, observations, and performance on clinical role-plays as well as interactions with patients may allow for a more nuanced evaluation of the student.

Finally, where possible, allow students to take the *time* they need to succeed on the task or suggest their timeline. This dimension may be more appropriate with younger students who are first learning about clinical skills in a nonclinical context (e.g., the classroom). As the student shifts toward clinical

work, they will have to increase the speed that they learn material and implement it with their patients. As much flexibility as possible regarding the timing of seeing patients, the type of treatments, or the deadlines for learning techniques would aid this dimension (see Table 2 for a summary of suggestions).

Table 2. TARGET model with suggestions for enhancing training

Task	• Model skill to enhance vicarious learning • Conduct rapid role-plays on the same scenario with specific feedback to improve technique • Provide examples of how knowledge or skill from task will prevent future mistakes (and then demonstrate those mistakes)
Authority	• Allow students to set own goals where appropriate • Allow students to increase autonomy as skills and confidence increase • Encourage students to practice reflection outside of supervision and take ownership for mastering reflection
Recognition	• Focus on progress toward self-identified goals and reaction to feedback • Focus on inner growth and increasing reflection skill • Utilize peer evaluations focused on students' reflections
Group	• Connect group work to real-world examples or situations • Create reflection groups with students • Foster a group environment where feedback to improve is valued
Evaluation	• Praise individual progress toward mastery rather than comparing against a norm or standard • Combine evaluations from peers (on reflection skill), as well as observations, performance, and improvement
Time	• Allow students to suggest their own timeline (where appropriate) • Maintain flexibility regarding timing of seeing patients, types of treatments, or deadlines for learning techniques

APPLICATION OF TARGET TO REMOTE LEARNING

With these suggestions in mind, it is important to discuss how these ideas can be adapted for a virtual or remote learning context. *Tasks* can be adapted for online environments with relative ease. Clinical role-plays can be conducted in a virtual environment utilizing videoconferencing software, as might be done in a health care setting (Gifford et al., 2012). Instructions can be modified to focus the students' attention on the more relevant stimuli (e.g., facial expressions, voice modulations) and emphasize the differences between conducting treatments in an environment where you can only see half of the patient's body. Practicing scenarios where the student will have to not only tackle health-care-related issues, but also technical difficulties (e.g., intermittent connection, poor audio) is also warranted. Focusing on scenarios where the worst case may occur (e.g., suicide intervention is necessary) and using deliberate practice to hone a student's skill and confidence in handling these situations will be useful. Creativity in designing tasks can also be valuable. For example, one benefit of online sessions is that practitioners can see the environment a patient may be experiencing and can tailor their interventions to be more personalized using that information at hand. Practicing scenarios where students are encouraged to be inventive in their solutions and embrace the possibilities of remote learning and service provision will be helpful for enhancing self-efficacy, as well as fostering a desire for mastery of this new method of providing treatment. Emphasizing the future applicability of the tasks and how these additional training scenarios may aid the student in their future profession may also enhance the transfer of training by the student (Greene et al., 2004).

Alongside the creation of tasks is encouraging students to take more *authority* in not only the design of clinical tasks, but also their education. Part of this shift will be encouraging students to take the lead in introducing new difficulties they may have experienced since the last supervision, either during in person patient encounters, or during remote service provision. Then, students may begin brainstorming ways to address these difficulties, with the supervisor standing in as a consultant to evaluate the acceptability of the solution regarding overall policy. By doing so, students can not only begin to engage more actively with their learning in a way that is related to their future practice, but also demonstrate that they are able to problem-solve even "novel" problems.

Recognition and *evaluation* may need little to no adjustment for a virtual environment, as they both focus on acknowledgment of a person's progress and provide opportunities for improving upon mistakes. These opportunities should not necessarily change during a shift to remote learning, and any errors on the student's part due to technical difficulties can and should be used as opportunities for the student to learn, and reference in the future if their patients experience similar difficulties. A focus on the adaption of the student to new circumstances may be a better evaluation for remote circumstances.

In terms of the *group*, a remote environment can be both beneficial and detrimental. One recommendation is that instructors will need to familiarize themselves with the technology they will be using in remote learning (Wang et al., 2014). Being effective at using tools such as breakout rooms, text chat, camera and microphone adjustments, as well as common technical problem-solving skills will be necessary. Setting standards for communication preferences during different activities (e.g., utilizing voice to interrupt during a skills demonstration, or only using text during a skills demonstration for questions), as well as overall etiquette will be required. Framing each group discussion with a specific goal and ensuring that all communication leads to that goal will be helpful. Creating structured rules around private communication between group participants during group activities may be necessary, as it is much easier to become distracted with those private communications in a virtual environment. Relatedly, creating rules around multitasking during groups, and working hard within the group to share authority about maximizing the learning of each student, is needed. Multitasking is possible in groups held online and creating rules and checks for multitasking may be needed to ensure student focus (Wang et al., 2014). One other important consideration is that, when creating these groups, it may take additional time for students to grow comfortable with discussion in an online format compared to an in-person format. Keeping these factors in mind may help ease students into their groups and enhance their overall participation as a whole.

Finally, *time* may need little to no adjustment for a virtual environment. Providing additional time, where possible, when the student is initially learning to apply both the information learned, as well as navigating a technical interface, will be necessary (see Table 3 for a summary of suggestions).

FUTURE RESEARCH DIRECTIONS

The TARGET model and the suggestions provided are just one avenue of changing the approach to educating new healthcare professionals. The proposed clinical tasks involve role-plays with fellow students, supervisors, or even trained actors, but there is significant potential in the next few years for alternative means of training future practitioners using technology (Beidas et al., 2014). Virtual reality and artificial intelligence both offer promising avenues for future training, with the ability to create standardized "actors" with whom students can practice refining their skills on their own time. Virtual

Table 3. TARGET model with suggestions for remote learning

Task	• Utilize video conferencing software comparable to what is used in future placements • Practice handling technical difficulties (e.g., slow connection, poor audio) • Emphasize future applicability of conducting remote sessions with patients
Authority	• Ask students to take the lead in bringing technological, procedural, or clinical concerns to the instructor's attention • Collaborate in addressing difficulties to maximize students' self-efficacy for handling future difficulties
Recognition	• Should not need a shift; focus should be on the student's adaption to the new medium
Group	• Familiarize instructor with technology (e.g., breakout rooms, camera and microphone adjustments) • Set standards for communication preferences • Set ground rules for multitasking
Evaluation	• Should not need a shift; focus should be on the student's adaption to the new medium
Time	• Should not need a shift other than providing additional time to focus on technical difficulties and adjustment to a new medium

avatars could provide a means for students to refine their craft through deliberate practice, without creating worries about taking time away from other students or from their supervisor. The avatars can also work to provide "feedback" depending on the student's success in role-playing with the avatar, helping to incrementally increase the student's skill as they work to obtain the "standard" that their supervisor can demonstrate to them.

Another related consideration is that, with the increase in online or remote learning, students may benefit from the ability to utilize asynchronous resources during their training. As other authors have noted, training offered online has numerous benefits, including convenience for the user, ease of logistical concerns (e.g., travel, lodging), and reusability if the student requires additional time with the training or missed one part of it. Depending on how remote learning is conducted, the repeated use of similar training across years could aid in standardization and reduce the time taken by instructors to review basic material. Resources could be reallocated to more complex scenarios that may benefit more from individualized attention.

CONCLUSION

In conclusion, this chapter has reviewed the literature on deliberate practice and the related constructs of achievement goal orientation, self-efficacy, perceived instrumentality, and reflective practice. Deliberate practice, when combined with the TARGET model, can act as a means of enhancing training outcomes in a remote or virtual learning environment and can be adapted for both in-person and virtual learning.

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KEY TERMS AND DEFINITIONS

Achievement Goal Orientation: Cognitive representations of an end state involving an interpretation of one's competence with a specific task.

Deliberate Practice: The measured and focused repetition of a task paired with feedback from a standard aimed at improving one's performance.

Mastery-Approach Orientation: An end state focusing on general self-improvement, developing competence, and achieving task mastery.

Perceived Instrumentality: A perception of the usefulness of a given task/training toward the user's future goals.

Reflective Practice: Reflecting on clinical experience with the intention to utilize knowledge, cognitive skills, emotional reactions, attitudes, or beliefs to make meaning of information obtained in a session.

Remote Learning: Learning taking place in any format where the learner is not in person with the instructor.

Self-Efficacy: Beliefs regarding one's capability for a particular task or endeavor.