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The PET Principle: An Innovative Teaching Strategy to Provide Real-Time Critical Thinking Skills and Improve Self-Efficacy

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Abstract

The person, environment, and therapist (PET) Principle is an innovative teaching strategy designed to improve recall of foundational information, facilitate critical thinking, and improve self-efficacy of student and novice therapists. Specifically, the PET Principle is a microlearning strategy that helps students and novice therapists break down segments of a treatment session using an acronym to promote a "just-in-time" thinking process. Therefore, they learn to consider all aspects of the person, environment, and therapist before, during, and after therapy sessions. To evaluate the effectiveness of the PET Principle and self-efficacy after learning the PET Principle, an 11-item survey containing nine forced-choice and two free-response questions was disseminated to students and recent graduates of the program. The research team used simultaneous coding of qualitative responses to identify common themes. Of the 49 completed surveys, the majority of respondents felt the PET Principle strategy was quite effective (43%) or extremely effective (26%) in helping them navigate treatment sessions, and felt somewhat confident (47%) or quite confident (36%) regarding their ability to access their knowledge and manage complicated treatment sessions. The majority also reported using the PET Principle every session or day (78%). Most free-response statements indicated respondents used the PET Principle to ensure safety awareness (49%) or effectiveness and efficiency of treatment (41%); 13% reported using the PET Principle for critical thinking and accessing knowledge. Educators should consider using the PET Principle as a teaching strategy to improve information recall and self-efficacy of students and facilitate critical thinking while navigating simulated and real-life situations.

Keywords

Occupational therapy, learning retention, innovative teaching strategy, microlearning

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ABSTRACT

The person, environment, and therapist (PET) Principle is an innovative teaching strategy designed to improve recall of foundational information, facilitate critical thinking, and improve self-efficacy of student and novice therapists. Specifically, the PET Principle is a microlearning strategy that helps students and novice therapists break down segments of a treatment session using an acronym to promote a "just-in-time" thinking process. Therefore, they learn to consider all aspects of the person, environment, and therapist before, during, and after therapy sessions. To evaluate the effectiveness of the PET Principle and self-efficacy after learning the PET Principle, an 11-item survey containing nine forced-choice and two free-response questions was disseminated to students and recent graduates of the program. The research team used simultaneous coding of qualitative responses to identify common themes. Of the 49 completed surveys, the majority of respondents felt the PET Principle strategy was quite effective (43%) or extremely effective (26%) in helping them navigate treatment sessions, and felt somewhat confident (47%) or quite confident (36%) regarding their ability to access their knowledge and manage complicated treatment sessions. The majority also reported using the PET Principle every session or day (78%). Most free-response statements indicated respondents used the PET Principle to ensure safety awareness (49%) or effectiveness and efficiency of treatment (41%); 13% reported using the PET Principle for critical thinking and accessing knowledge. Educators should consider using the PET Principle as a teaching strategy to improve information recall and self-efficacy of students and facilitate critical thinking while navigating simulated and real-life situations.

Introduction

Students in higher education often have challenges effectively learning or understanding new material presented in academic settings, making it difficult to apply the material to clinical environments (Ainscough et al., 2018). To address this issue, educators continuously search for innovations and best practices in teaching. In occupational therapy education, students often report limited confidence in their knowledge and skills as they begin to function as therapy practitioners in fieldwork settings (Andonian, 2017; Knecht-Sabres et al., 2013; McCombie & Antanavage, 2017; Rezaee et al., 2014). Lack of confidence in their preparedness to transition from the classroom to a clinical setting has long been a source of stress for occupational therapy students (McCombie & Antanavage, 2017; Rezaee et al., 2014). However, this gap in self-efficacy presents an opportunity for new teaching strategies that improve confidence in the knowledge and readiness of students and novice therapy practitioners for clinical work (Fan et al., 2021; McCombie & Antanavage, 2017).

Self-confidence involves an individual's beliefs about their capability to perform a task or activity, whereas self-efficacy refers to the strength of those beliefs in a specific context (Paloncy et al., 2019). From a health professions perspective, self-efficacy is necessary to ensure health professionals can appropriately and confidently interact with patients/clients (Fan et al., 2021). Because self-efficacy is essential for managing interpersonal challenges in practice and fieldwork rotations, educators must examine self-efficacy in students and novice therapy practitioners (Fan et al., 2021; Hussain et al., 2018).

Fieldwork experiences in clinics are one way to examine self-efficacy because they provide opportunities for students to learn during situations that require problem-solving in the moment (Rezaee et al., 2014). Therefore, developing strategies that teach students to critically think through and problem-solve real client situations before they begin their fieldwork experiences could potentially improve their self-efficacy. Even though critical thinking is essential for students as they transition from classroom to clinical settings, it can be difficult to define (Berg et al., 2023). For the current study, researchers defined critical thinking as reflective decision-making (Marvanova & Henkel, 2018) or self-reflection essential to clinical practice (Berg et al., 2023).

Using Innovative Teaching for Occupational Therapy Education

Because of the wide variety of occupations people engage in every day, and the physical, mental, and behavioral aspects of occupation that occupational therapy practitioners address, the occupational therapy profession has a wide scope of practice. As a result, occupational therapy education covers a large breadth of information and complex concepts. Because of this complexity, some students struggle throughout the educational process to understand and then implement the presented information (Knecht-Sabres et al., 2013). To ensure effective therapeutic use of skills and practitioner self-efficacy, students should be encouraged to cultivate confidence in their ability to successfully apply classroom learning into treatment sessions (DaLomba et al., 2021; Fan et al., 2020; Fogel & Lamash, 2021; Knecht-Sabres et al., 2013). Likewise, faculty should consider all available options to facilitate effective student classroom

learning and help those unable to understand information sufficiently to confidently apply it in real-world settings. This applied knowledge is essential during fieldwork experiences for students and in treatment sessions for novice therapy practitioners (Andonian, 2017; DaLomba et al., 2021; Rezaee et al., 2014).

Microlearning is one way to facilitate classroom learning. By conveying information in digestible bits of knowledge, this teaching strategy can be utilized by occupational therapy educators to help students build their critical thinking skills (Giurgiu, 2017). Microlearning is characterized by short bursts, or "bite-sized" pieces of information repeated over time (Alqurashi, 2017; Taylor & Hung, 2022). When new material is presented this way, retention and implementation of the information is improved (Giurgiu, 2017; Taylor & Hung, 2022). One aspect of microlearning, known as just-in-time learning, provides resources or strategies for students to access information in the moment they need it, effectively improving their engagement and knowledge retention (Taylor & Hung, 2022). Applying these teaching strategies to occupational therapy education can potentially improve student retention of information, which can subsequently improve student self-efficacy, and facilitate their development of critical thinking skills.

Given the benefits of these learning methods, the faculty at an occupational therapy program developed an innovative teaching strategy for providing occupational therapy students with real-time critical thinking skills during their lecture and lab classroom education and reinforced during their onsite clinical experiences. The goal of this strategy was to improve student self-efficacy, or their confidence in their ability to use the therapy skills they learned. Informed by the microlearning instructional approach, students are taught to consider all aspects of the occupation they are addressing related to the *person*, *environment*, and therapy practitioner, or *therapist* (PET) before, during, and after the session. Utilizing this strategy for engagement and knowledge retention, students are able to address all areas of the occupational therapy domain, and break down each aspect of the occupation, in the treatment session using an easy to remember acronym to facilitate a just-in-time thinking process. The present article describes the PET Principle and provides an assessment of its effectiveness. More specifically, the authors surveyed students and recent graduates regarding their self-efficacy about their knowledge and problem-solving, and their perceptions of the PET Principle as an effective strategy for treatment sessions.

Description of the PET Principle

The terms used to represent the people occupational therapy practitioners treat can vary by the setting and organization norms. The term patient is the industry standard in medical settings and is typically used across providers; in mental and behavioral health settings, client is the preferred term. Client is also the term used in the *Occupational Therapy Practice Framework* (American Occupational Therapy Association [AOTA], 2020). To accommodate therapy practitioners and educators across settings, for the purposes of this paper, when referencing the person being treated by the occupational therapy practitioner, the term *person* will be used to indicate the patient or client in the context of the PET Principle. Similarly, the term *therapist* refers to the therapy

practitioner in a simulated treatment session and may be a student in the classroom or clinical setting or the novice therapist in the clinical setting. The term therapist or novice therapist represents master's or doctoral level occupational therapy students or recent graduates, or occupational therapy assistant students or recent graduates. Likewise, the term instructor refers to the teacher providing the training in the academic setting.

What Is the PET Principle?

The PET Principle is an innovative teaching strategy that can break down aspects of a treatment session into smaller components to help students and novice therapists improve their self-efficacy. Using the PET Principle, the instructor guides the students in completing an analysis of critical things a therapist should consider during a treatment session. This process is similar in concept to a task analysis. The PET Principle provides a just-in-time learning strategy for students to use in the classroom or clinical practice. Instructors can use PET to demonstrate how a therapist will think through/approach a therapy session during clinical examples in the classroom.

Constructivist Learning Theory guided the development of the PET principle. This theory highlights learning as an active process in which learners construct their own knowledge and assign meaning to information throughout the learning process (Grieves et al., 2019). They are not passive recipients of information. The constructivist theory emphasizes that learners develop a new understanding of knowledge through prior experiences and reflection on those experiences. The theory also supports the improvement of learning through authentic experiences that teach students to think in realistic, lifelike situations by encountering and solving problems similar to those they will encounter in their future professions (Loyens et al., 2008; Needels & Knapp, 1994).

How the PET Principle is Used

Students can use PET to think through their approach to the treatment session during practical assessments in the classroom. Students can also use PET during fieldwork rotations, and in entry-level practice, for breaking down each aspect of the treatment session into three clear components: *person, environment, therapist*. As occupational therapists use occupations such as activities of daily living, instrumental activities of daily living, activities to improve health management, sleep, recreation, education, and social participation (AOTA, 2020), the PET Principle can be used to break down aspects of the occupation or intervention within the treatment session as well.

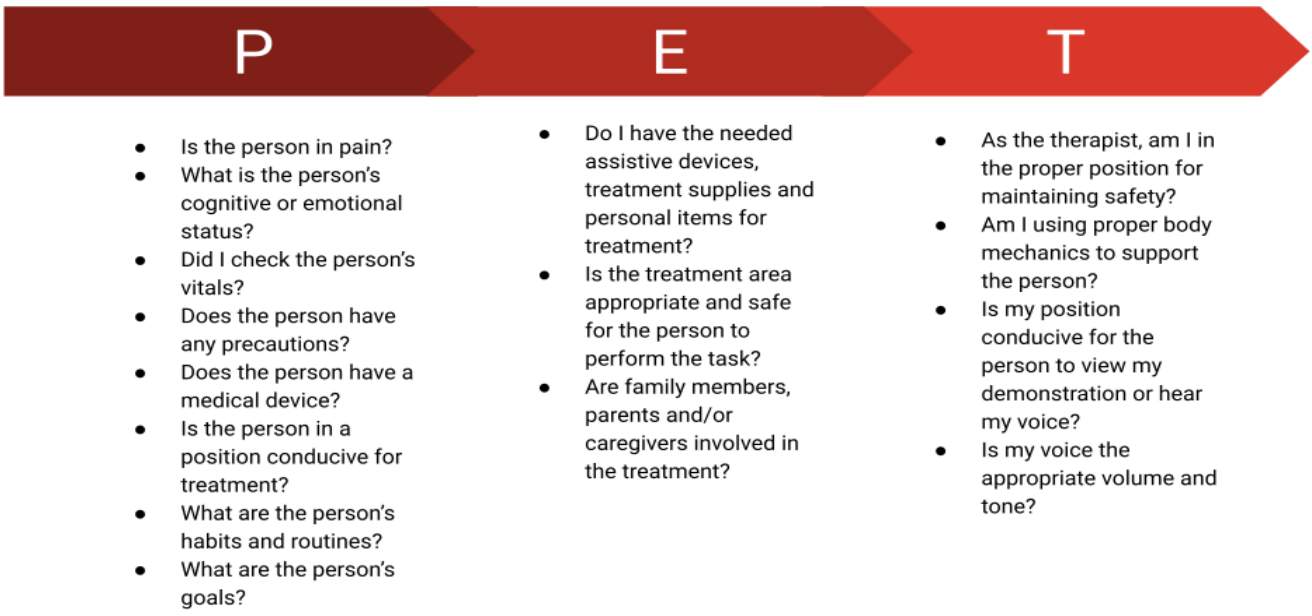
Ideally, students will learn this process in the classroom setting and apply it as needed in the clinical setting during fieldwork or as novice therapists. To help students and novice therapists recall these essential components, the developers created a mnemonic to use in the moment during each step of a treatment session. This mnemonic, which represents the person, the environment, and the treating therapist, is included within the name of the teaching strategy, the PET Principle. This arrangement helps students and novice therapists remember the factors they need to consider when working with the person and their desired occupational tasks within the treatment environment. These factors include the position and needs of the person, safety and accessibility of the environment, and the therapist's position and role in the treatment

session. Additionally, this just-in-time pneumonic can be applied to reading patient's/clients' medical charts or therapy notes to help the student/novice therapist visualize each of the three aspects of the PET Principle before the session.

Figure 1 below presents an example of using each of the three aspects of the PET Principle in practice or a simulated practical experience. In this example, the therapist is initiating a treatment session by mentally reviewing questions about where they are in their treatment with the person.

Figure 1

Example of Using the Three Aspects of the PET Principle in Practice



After students complete a simulated practical experience, the PET Principle can be used to remember essential details and reflect on their performance. Similarly, students or novice therapists in fieldwork or clinical practice can use the PET Principle to break down and think about the entire treatment session for accurate documentation and better recall of session specifics.

How the Instructor Teaches the PET Principle

The therapist must consider and address multiple aspects of a treatment session to ensure it is safe and effective. This process can cause a student or novice therapist to become overwhelmed, so the instructor should ensure the student understands each aspect of the session when teaching the PET Principle. The healthcare system is moving toward a value-based medical system, which focuses on patient-centered care (NEJM Catalyst, 2017). Thus, in the context of the occupation, the first step in the PET Principle focuses on the person and then shifts to the person's environment. Next, the

PET Principle allows the therapist to assess their own position and role within the patient care environment. Assessing this aspect allows the therapist to focus their attention on using their position and role to support the person during completion of the occupation.

To teach this process, the instructor leads students through a simulated or hypothetical treatment session, such as activities of daily living tasks, while considering the three aspects of the PET Principle. The instructor reinforces the learning content through questions and interactions designed to engage students and promote critical thinking. Using the just-in-time aspect of microlearning, the instructor provides just the right amount of information at the right time throughout (Taylor & Hung, 2022). This strategy was incorporated into the PET Principle because it provides multiple moments where the student or novice therapist can use the mnemonic for an in-the-moment breakdown of each step of a treatment session into more manageable components. The benefit of the PET Principle is that students learn to process what is around them in manageable portions and at a slower pace than traditional methods. As part of the teaching process, instructors can summarize the PET Principle by providing an easy-to-use teaching resource that can help students retain the learned strategies and reinforce just-in-time learning.

Assessing the Student's Use of PET Principle

The final stage of teaching involves evaluating the student's application of the PET Principle. The instructor can quiz or test the students to assess their understanding of the PET Principle. Questions can evaluate the planning aspects, any phase, or the student's reflection of the treatment session. Similarly, the PET Principle can be incorporated into written or practical exams to test the student's knowledge of its application. The following is an example of a written test question for evaluating implementation of the PET Principle:

The occupational therapist is planning to work with a 37-year-old male who is status-post (just after) neck surgery (fusion of C1, which limits 50% of cervical rotation). When the therapist approaches the person to discuss the treatment, the therapist notices the person is lying supine, looking up at the ceiling, with the bed flat and listening to the television. Which responses are appropriate examples of the therapist modifying the *Environment* based on the PET Principles? Choose the BEST two. (Note: the correct answers have an *)

*A. Raise the head of the bed so the patient can see the therapist. (E - environment)
*B. Ask the patient if the TV could be turned off or muted while talking. (E - environment)
C. Stand to the right side of the patient so he can hear what the therapist is demonstrating (T - therapist).
D. Stand at the foot of the bed and demonstrate for the patient so he can better see the therapist (T - therapist).
E. Start moving the patient before setting up the environment so the patient can get started right away (P - Person).

Typically, there is overlap regarding whether an issue is part of the person, environment, or therapist. For example, the “A” response option could be considered person or environment in the above test question. However, if the student can explain how they envision the issue using the PET Principle, they are using it effectively, which is the goal of teaching this strategy. This example illustrates that the PET Principle is a simple, flexible, and valuable strategy that helps students and novice therapists consider all critical aspects throughout a treatment session.

Innovation Assessment

To determine the effectiveness of this teaching strategy, the authors used a cross-sectional survey design to assess students in an occupational therapy program, and recent graduates who were now novice therapists. The survey had two sections; one section of the survey assessed the students’ self-efficacy in relation to their knowledge and problem-solving skills during treatment sessions. The second section focused on their perceptions regarding the effectiveness of the PET Principle during treatment sessions. Research questions were: 1) Do students and novice therapists who have been taught the PET Principle express confidence in their skills through their perception of self-efficacy? 2) Do students and novice therapists find the PET Principle an effective strategy that they can use during treatment sessions?

To complete this assessment, the authors chose self-efficacy as the measure of effectiveness because it has been reported as a critical factor in student motivation and learning (van Dinther et al., 2011). The 11-item online survey contained five forced-choice questions regarding self-efficacy, four forced-choice questions regarding the PET Principle, and two free-response questions. Participation was voluntary, and survey responses were anonymous. Submission of the survey served as the participants’ consent. No incentive or compensation was provided for participation. The study was reviewed and determined to be exempt by the university’s institutional review board.

Participants

Survey participants included current students and recent graduates who had started their clinical practice within the last year. The student cohorts included entry-level master’s and doctoral students who had experience providing direct patient care through at least one Level II fieldwork experience. Participation or nonparticipation did not affect grades of current students in any way.

Survey

The survey in this study was modified from a validated and reliable survey for measuring discipline-specific educational self-efficacy using best practices for survey design (Imperial College London, n.d.). Consistent with survey best-practices and to maximize response rate, the survey was short, with questions and response options designed to minimize the cognitive load of the respondent (Imperial College London, n.d.; Kost & Correa da Rosa, 2018). Additionally, to minimize acquiescence bias and cognitive load of the respondent and to optimize question quality, each question had

five potential responses that used terms reflecting the underlying topic rather than the numbered levels of agreement such as ‘agree/disagree’ that are typical in a traditional Likert scale (Imperial College London, n.d.).

The survey contained nine forced-choice questions and two free-response questions. There were five forced-choice questions regarding self-efficacy: two of these questions focused on self-efficacy of knowledge, and three focused on self-efficacy of problem-solving ability. Self-efficacy was the measure used to determine the confidence level of the student or novice therapist in their ability to successfully complete a therapy session. In other words, their ability to apply their knowledge and their ability to problem-solve during an actual patient interaction or therapy session. The remaining four forced-choice questions were specific to the respondents' thoughts on the effectiveness of the PET Principle. Forced-choice response options for the five self-efficacy questions ranged from *not at all confident* to *extremely confident* (see Table 1 below). Forced-choice response options for the questions regarding effectiveness of the PET Principle ranged from *not at all effective* to *extremely effective* (see Table 2 below). The free-response questions asked for additional information regarding how often the respondent used the PET Principle, and how the PET Principle impacted their ability to complete a treatment session.

The survey was created via Qualtrics^{XM} software (Provo, UT) and was disseminated to participants with a brief introductory paragraph via email. The initial invitation to participate was sent by email, followed by a reminder email five days later, and one more reminder five days after that. Demographic information included the program level, master’s or doctorate, and graduation year.

Data Analysis

Responses to the forced-choice survey questions were summarized using frequency and percentage. Cronbach’s α coefficient was used to determine the internal consistency and reliability of the survey questions. An analysis of variance (ANOVA) test was used to determine whether there was a relationship between graduation year and survey responses. SPSS (IBM Corp., Armonk, NY) statistical software was used for quantitative analyses, and a $p < .05$ was considered significant. Because some of the written text for the free-response questions represented more than one main point or concept, the research team chose a double or simultaneous coding approach for this analysis to ensure every critical point was counted. Using an inductive (ground up) in vivo approach, they identified themes derived from the terms used by the respondents and then consolidated similar themes. Next, the team reviewed each response again to see how many responses fit into each theme, which is a deductive (top-down) approach. This process allowed the team to determine the prevalence of each theme and identify the most impactful aspects of the PET Principle. Two team members evaluated each code independently and then met to reach a consensus regarding the themes; a third team member served as arbitrator when there were disagreements or lack of consensus.

Results

Of 103 email invitations, 70 current students and recent graduates responded to the survey. After eliminating incomplete surveys, 49 responses were retained, indicating a 46% response rate of usable responses. Of those, 26 (53%) were from the master's of science OT program; 21 (43%) were from the doctoral OT program, and 2 (4%) were recent graduates of one of these programs. The reported graduation year or anticipated graduation year ranged from 2022-2024 for 47 respondents; two respondents did not indicate their graduation year. No significant relationships were found between graduation year and survey responses (all $p > .05$). Survey questions relating to self-efficacy had a Cronbach's α of .84, indicating good internal consistency. Questions about the effectiveness of the PET Principle had Cronbach's α of .94, indicating excellent internal consistency.

Forced-Choice Survey Questions

Survey responses to forced-choice questions are presented in Tables 1 and 2. There were two questions assessing problem solving self-efficacy, ability to manage difficult situations, and resolve complicated issues in difficult treatment situations. Responses indicated that the majority of respondents felt somewhat confident they had the ability to resolve complicated issues (n = 27, 55%) and manage difficult situations (n = 38, 57%) during treatment sessions (see Table 1). For the questions assessing knowledge, most of respondents felt *quite confident* they could complete all necessary tasks related to a client interaction (n = 32, 65%) and could learn, or had learned, all they needed to know to be an entry-level therapist (*n* = 18, 38%), but most felt only *somewhat confident* they could remember what they learned when completing a treatment session (*n* = 24, 49%).

Table 1

Responses to Survey Questions Assessing Self-Efficacy

Question	*n* (%)				
	Not at all confident	Slightly confident	Somewhat confident	Quite confident	Extremely confident
Problem-solving ability					
When faced with complicated issues during the treatment session, how confident are you that you will be able to resolve the issues?	1 (2)	4 (8)	27 (55)	16 (33)	1 (2)
How confident are you that you can manage difficult situations in a treatment session?	1 (2)	2 (4)	28 (57)	14 (29)	4 (8)

Question	*n* (%)				
	Not at all confident	Slightly confident	Somewhat confident	Quite confident	Extremely confident
			Knowledge		
How confident are you that you can complete all of the necessary tasks related to a client/patient interaction?	0 (0)	3 (6)	10 (20)	32 (65)	4 (8)
How confident are you that you can learn (or have learned) all you need to know to be an entry level therapist? [a]	1 (2)	10 (21)	14 (29)	18 (38)	5 (10)
How confident are you that you will remember what you learned when you are completing a treatment session?	1 (2)	5 (10)	24 (49)	17 (35)	2 (4)

Note. *N* = 49. Standard rounding procedures were used for percentages.
[a] *N* = 48. One respondent did not answer this one question.

There were two questions assessing problem solving self-efficacy, *ability to manage difficult situations*, and *resolve complicated issues in difficult treatment situations*. Responses indicated that over one half, 55% and 57% respectively, of the respondents felt only *somewhat confident*. Just over one third, 35% and 37% reported they were *quite* or *extremely confident.*

With the questions related to knowledge, 49% of the respondents reported feeling *somewhat confident,* and 35% were *quite confident* when asked about their *ability to remember what they learned when completing a treatment session*. The other two knowledge questions reflected: *confidence in whether respondents can learn*, *or have learned what they need to know to be an entry level therapist*; and confidence that they *can complete all necessary tasks related to client/patient interaction*. The majority of responses, 38% and 65% respectively, indicated respondents were *quite confident.* Across questions related to self-efficacy 47% of respondents were *somewhat confident*, while 42% were either *quite confident* or *extremely confident*.

To all questions regarding the effectiveness of the PET Principle, 69% indicated respondents felt the principle was *quite effective* or *extremely effective.* The majority (*n* = 17, 35%) of respondents indicated the PET Principle was *extremely effective* as a tool during a treatment session, and the majority indicated it was *quite effective* for helping them be adequately aware of self (*n* = 20 41%), of the environment (*n* = 25, 51%), and of the patient or client (*n* = 24, 49%) during the interaction (see Table 2).

Table 2

Responses to Survey Questions Assessing the Effectiveness of the PET Principle

Question	*n* (%)				
	Not at all effective	Slightly effective	Somewhat effective	Quite effective	Extremely effective
How effective is the PET Principle as a tool that I can use during an actual treatment session?	0 (0)	6 (12)	10 (20)	16 (33)	17 (35)
How effective is the PET Principle in helping me be adequately aware of myself during the interaction (in the moment)?	2 (4)	4 (8)	11 (22)	20 (41)	12 (24)
How effective is the PET Principle in helping me be adequately aware of my environment during the interaction (in the moment)?	0 (0)	3 (6)	10 (20)	25 (51)	11 (22)
How effective is the PET Principle in helping me be adequately aware of the person/patient (client) during the interaction (in the moment)?	0 (0)	3 (6)	12 (24)	24 (49)	10 (20)

Note. *N* = 49. Standard rounding procedures were used for percentages.

Free-Response Survey Questions

Thirty-two respondents provided written text to the two free-response questions. After completing the coding analysis of the first question, which asked about the ways the PET Principle had impacted their ability to complete treatment sessions, the authors identified three primary themes: *safety awareness*, *effectiveness and efficacy*, and *critical thinking and accessing knowledge.* Several written responses had more than one theme. Of the 32 responses, two did not fit into a theme as those respondents wrote they did not use the PET Principle.

The authors identified the theme of *safety awareness* in 18 (56%) of the 32 responses. This theme was exemplified in a statement that described the PET Principle as “a great way to keep everyone safe and prevent injury to the patient or the therapist.” Other respondents indicated the PET Principle “keeps me in check mentally with my surroundings and the patient’s needs" and “helps me keep my patient safe by increasing my awareness of environmental hazards.”

Many survey respondents also discussed how the PET Principle was a tool to improve the *effectiveness and efficiency* of patient interactions. This theme was identified in 15 (47%) of the 32 responses. In their written text, some respondents indicated the PET Principle helped them to “prepare for my sessions,” “adapt my environment or activity,” and “remember where my tools and equipment are in relation to me and my treatment area.” Others wrote that the PET Principle “impacts every aspect of treatment,” including “charting, planning, executing, and adapting a treatment/evaluation.” These aspects of patient interactions require the student or therapist to use critical thinking skills and access knowledge previously learned through their coursework or fieldwork experiences or in clinical practice.

The author's identified a third theme of *critical thinking and accessing knowledge* in four (13%) of the 32 responses. This theme was exemplified by responses that indicated the PET Principle “gave me a format to follow” and “helps me better analyze my relationship with the patient.” Others wrote that the PET Principle allowed them to “return back to foundational skills when interacting with any type of patient” and encouraged them to use “critical thinking and awareness” during patient interactions.

The second free-response question asked how often respondents used the PET Principle. Analysis of these responses were frequency-based and fit into four distinct categories. Specifically, 16 (50%) respondents indicated they used the PET Principle every session, 9 (28%) used it every day, 5 (16%) used it occasionally or sometimes, and 2 (6%) never or almost never used it.

Discussion

This article described an innovative teaching strategy, the PET Principle, for providing occupational therapy students with strategies to maximize real-time critical thinking skills during their education with the goal of improving their self-efficacy. Overall, the assessment of the PET Principle indicated it is a useful just-in-time strategy to help students and novice therapists ensure they are attending to all necessary aspects of the treatment session. The first research question asked if students and novice therapists who had been taught the PET Principle expressed confidence in their skills through their perception of self-efficacy. The overarching outcomes, based on the survey responses, suggested students who were taught the PET Principle demonstrated good self-efficacy, or confidence in their ability to apply the skills they learned. This is a positive outcome as the literature supports the importance of self-efficacy in managing difficult situations in real world practice settings (Fan et al., 2021; Hussain et al., 2018). Although, we cannot definitively assume a cause-and-effect relationship between the PET Principle and self-efficacy, the outcomes of the survey suggest that students who learned the PET Principle did have good self-efficacy. A more detailed analysis of the relationship between the PET Principle and self-efficacy should be explored in future studies.

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The second research question asked if students and novice therapists found the PET Principle to be an effective strategy to use during treatment sessions. The respondents found the PET Principle to be *quite* or *extremely effective* in helping them to be

adequately aware of themselves as a therapist, the environment, and the person during the treatment session. As this reflected their level of confidence in their ability to consider the person, environment, and themselves, the responses suggest the respondents had an appropriate level of self-efficacy for their experience level. Survey responses also suggest that, as a teaching strategy, the PET Principle facilitated critical thinking skills that transferred from the classroom to clinical practice through recall and knowledge of when to use appropriate strategies in real time. This finding was consistent with just-in-time learning described by Taylor and Hung (2022) in which students accessed necessary information the moment they needed it. Regarding the self-efficacy forced choice survey questions related to problem-solving, over half of the respondents were *somewhat confident* in their problem-solving skills related to their ability to manage or resolve difficult situations. With the forced choice questions related to knowledge, results were more varied as reported confidence levels were higher for questions assessing the attainment of knowledge than those assessing the application of knowledge. Given that self-efficacy increases with effective guidance and experience (Andonian, 2017; Fan et al., 2020; McCombie & Antanavage, 2017), it is likely the survey respondents had a sense of self-efficacy that was appropriate for their student or novice therapist status.

Regarding the free-response survey questions, two of the three identified themes suggested that the use of the PET Principle heightened the respondent's safety awareness (56%), and their effectiveness and efficiency (47%) on a daily basis. The third theme, critical thinking and accessing knowledge, suggested the PET Principle may help students or novice therapists when they are struggling to determine what to do next with the patient. This uncertainty about managing unexpected situations, complications, or next steps in a treatment session can lead to self-doubt (Andonian, 2017; McCombie & Antanavage, 2017). However, with its easily remembered three-step approach, the PET Principle provides a just-in-time process that helps therapists focus on what is happening in the moment. Consistent with the literature, this microlearning approach, through this easily remembered mnemonic, provides a simple, repeatable method to access and implement short bursts of retained information when needed (Alqurashi, 2017; Giurgiu, 2017; Taylor & Hung, 2022). This finding is supported by the responses to the second free-response question in the current study as 50% of respondents used the PET Principle every session, and an additional 28% report using it every day. The PET mnemonic ensures the therapist addresses the key factors of the person within the environment, the environment surrounding the person, and where the therapist is within the environment. With PET, the student or novice therapist can ensure all necessary aspects of the occupation they are facilitating through their treatment have been addressed.

Limitations

A limitation to this study was the lack of a comparison group; all of the respondents had learned the PET Principle. Although the assessment survey for this innovative teaching model had a high response rate of 46%, the sample size was relatively small in relation

to the number of occupational therapy students in programs throughout the United States. Further, the survey respondents attended or had recently completed the same program, which limited the generalizability of results.

Future Research

Although results of the survey assessment were encouraging, more studies are necessary to evaluate the effectiveness of the PET Principle. For instance, similar studies could be conducted in other occupational therapy programs or in other disciplines to evaluate the generalizability of the Principle. Additionally, a comparison group including students who did not learn the PET Principle would offer valuable information regarding the effectiveness of the program in improving self-efficacy. Studies could also investigate use of the PET Principle in various settings to determine whether it is more applicable in some clinical settings than others. Future studies could also evaluate whether patient satisfaction scores improve as the self-efficacy of the therapist improves.

Implications for Occupational Therapy Education and Conclusion

Given the benefits of this innovative teaching strategy, healthcare educators should design and incorporate similar teaching methods throughout their program curricula and in clinical fieldwork and internship experiences. Further, since the PET Principle can be used in various ways to structure information and improve information retention and recall, clinical instructors and mentors of novice therapists should consider using this strategy to evaluate treatment sessions and other therapy-related interactions. The PET Principle is dynamic and interactive, it has the potential to improve a student's self-efficacy and facilitate their transition from the classroom to working with actual people in clinical settings.

As the lack of self-efficacy in students transitioning from classroom to clinical settings creates significant stress for students, the PET principle was originally designed to help struggling students think through the evaluation and treatment process during practicals and fieldwork experiences. Based on the success of the teaching strategy, the PET Principle was later integrated into the general curriculum as a tool to increase self-efficacy and to improve clinical reasoning skills of all students within the occupational therapy program. As noted by the outcomes of this study, this microlearning strategy is addressing this gap in the educational process, providing an actionable just-in-time mnemonic that can lead to improved self-efficacy. Practitioners who have been taught the PET principle note it is effective in helping them remember what they learned in real time. Self-efficacy outcomes suggest it gives them confidence in their skills and helps them to better treat their patients in practice.

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