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Abstract

Innovative teaching approaches are changing traditional approaches by using a variety of teaching and learning methods to allow learners to succeed. This paper describes a new instructional model for healthcare education based on the science of learning, educational theories, and best practices in lesson design. The Visualize Whole-Self (VW) Model was designed to provide a learning structure for faculty as they guide the instruction of students in health professions. From the beginning of the program, students visualize themselves as professionals while working with faculty to learn content. The Visualize Whole-Self Model requires students to continually assess their strengths and weaknesses to achieve the course expectations and objectives. The VW Model allows faculty to plan lessons for students using the four quadrants of *Prepare Some*, *Practice Some*, *See Some*, and *Prove Some*. The quadrants within the model are flexible to ensure lesson designs are focused on the specific objectives or skills to be mastered. This structured approach to learning places the demonstration of mastery on the students and the development of background understanding, practice activities, and ongoing coaching on the faculty. Initially designed for occupational therapy (OT) education, the VW Model can be used by faculty in any healthcare profession that focuses on both cognitive and psychomotor knowledge and skill development. Anecdotal evidence suggests that the model is effective and further qualitative and quantitative studies are needed.

Keywords

Instructional design, occupational therapy, teaching strategy, education, healthcare professions

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Visualize Whole-Self Model: An Instructional Design for Occupational Therapy Education

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ABSTRACT

Innovative teaching approaches are changing traditional approaches by using a variety of teaching and learning methods to allow learners to succeed. This paper describes a new instructional model for healthcare education based on the science of learning, educational theories, and best practices in lesson design. The Visualize Whole-Self (VW) Model was designed to provide a learning structure for faculty as they guide the instruction of students in health professions. From the beginning of the program, students visualize themselves as professionals while working with faculty to learn content. The Visualize Whole-Self Model requires students to continually assess their strengths and weaknesses to achieve the course expectations and objectives. The VW Model allows faculty to plan lessons for students using the four quadrants of *Prepare Some, Practice Some, See Some, and Prove Some*. The quadrants within the model are flexible to ensure lesson designs are focused on the specific objectives or skills to be mastered. This structured approach to learning places the demonstration of mastery on the students and the development of background understanding, practice activities, and ongoing coaching on the faculty. Initially designed for occupational therapy (OT) education, the VW Model can be used by faculty in any healthcare profession that focuses on both cognitive and psychomotor knowledge and skill development. Anecdotal evidence suggests that the model is effective and further qualitative and quantitative studies are needed.

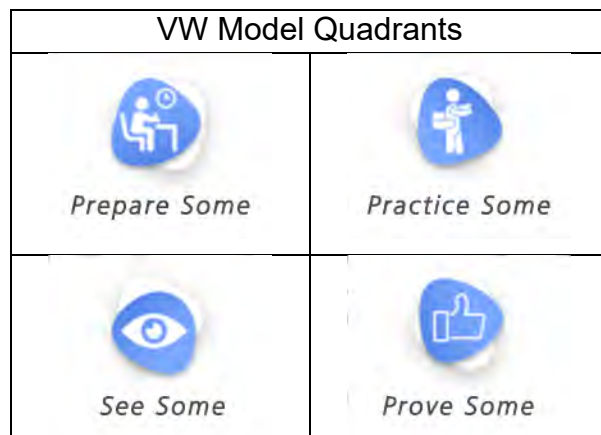
Introduction

Higher education institutions seek innovative models to engage students in learning and provide relevant educational experiences to produce competent professionals (Chandra et al., 2021; Frenk et al., 2022; Major et al., 2020). This paper outlines the Visualize Whole-Self (VW) Model of educating students that draws upon best practices in higher education for student-centered learning. The model integrates student learning trajectory from knowledge and skill acquisition to demonstrated mastery as competent entry-level practitioners in occupational therapy.

The VW Model was developed and implemented at a private mid-western university. Faculty integrated the model to address the evolving and demanding healthcare landscape while providing comprehensive support for student learning. The VW Model is founded upon tenets of the science of learning and aligns with the principles of evidence-based adult learning and higher education best practices. It offers a holistic approach to education that is especially relevant in healthcare and applicable to other disciplines. The VW Model fosters the student's autonomy, compelling them to take ownership of their learning while providing scaffolded learning opportunities that build essential clinical skills for future practitioners. The model contains four quadrants: *Practice Some, Prepare Some, See Some, and Prove Some* (see Figure 1). Students visualizing themselves as professionals is an important component of the model, creating new learning experiences and learning environments.

Figure 1

The VW Model Quadrants



This paper reviews relevant literature and empirical support for the components of the VW Model and outlines the method and supporting educational precepts. Furthermore, the paper discusses the implications of this model for occupational therapy (OT) education and outlines subsequent steps required to ensure its effectiveness and implementation. The VW Model upholds teaching and learning best practices and facilitates occupational therapy programs' compliance with Accreditation Council for Occupational Therapy Education (ACOTE, 2018, 2023) standards.

The Science of Learning

An intentionally designed instructional approach should consider the science of learning (Plack & Driscoll, 2017). Using instructional practices in the classroom that support and do not hinder learning can help students learn and retain information (Ghanbari et al., 2019; Nelson & Elias, 2023). During occupational therapy education, instructors typically expose students to new information. Initially, new or novel concepts are housed in short-term memory, which has limited capacity (Nelson & Elias, 2023). The goal of a sound educational experience should be to encode the information in long-term memory. Encoding requires repetition or practice, rehearsal, and elaboration (Brown et al., 2014; Gooding et al., 2016; Nelson & Elias, 2023; Plack & Driscoll, 2017; Weinstein et al., 2018). Students and instructors can facilitate the transfer of information to long-term memory using certain educational strategies. These strategies include diversifying how skills or knowledge are practiced, using study methods that require recall, providing multimodal approaches in lesson design, involving instructor role modeling and giving context to new material (Brown et al., 2014; Ghanbari et al., 2019; Plack & Driscoll, 2017).

Learning does not occur by just listening to a lecture or reading a chapter. Strategies that encourage varied, spaced, and interleaved practice tend to foster better learning outcomes (Brown et al., 2014; Gooding et al., 2016; Plack & Driscoll, 2017; Weinstein et al., 2018). Adding components into lessons, such as quizzes after readings or opportunities for retrieval practice and rehearsal of information will further ingrain information for the students and promote learning (Brown et al., 2014; Plack & Driscoll, 2017). Quizzes and flashcards reinforce new material, provide opportunities to use rehearsal or recall, and enhance learning. These activities allow for repetitive practice and rehearsal of key concepts, which are mechanisms that lead to deeper learning (Brown et al., 2014; Nelson & Elias, 2023). Encouraging students to use spaced and interleaved practice enhances learning when studying instead of intense studying over a short period of time (Gooding et al., 2016; Plack & Driscoll, 2017; Weinstein et al., 2018).

One educational tool that promotes learning is reflection. Reflection requires the learner to use strategies of retrieval, reinforcing the encoding of new information into long-term memory (Plack & Driscoll, 2017). Deliberate reflection occurs when the learner uses an experience in the classroom, a completed assignment, or an assigned reading for assessment and self-improvement. Reflection forces retrieval and enables the learner to draw connections to newly learned material or link material to previous experience or context, all strategies that reinforce learning (Brown et al., 2014; Schon, 1991). Reflection can occur in many ways, including informally reviewing a course session after it occurred, in writing, orally, or in a more artistic fashion. Engagement with content, using any strategy that requires the learner to reflect, can have a positive impact on long-term learning (Brown et al., 2014; Plack & Driscoll, 2017; Schon, 1991). A multimodal approach to instructional design enhances learning. Providing students with multimodal learning through opportunities to watch a skill or practice a skill, or to hear or provide a rationale for an answer gives visual, auditory, and possibly kinesthetic

information (Ghanbari et al., 2019; Plack & Driscoll, 2017). Multimodal input during learning reinforces the knowledge acquisition that is occurring. Furthermore, linking new information with previously learned content provides students context, which reinforces learning of the new material. Context and personal meaning allow for deeper learning to occur as it gives the student a way to link the information to something they already know or have experienced (Brown et al., 2014; Plack & Driscoll, 2017). Principles of the science of learning encourage educational strategies that allow for varied practice, recall, reflection, and multimodal interactions with new material to reinforce student learning and promote the use of evidence-based teaching and learning strategies in the classroom.

Building on these foundations, the VW Model improves the student learning experience by enabling students to focus on continuous self-improvement of their skills and knowledge. Also, faculty are encouraged to divert more time and energy to developing real-world practice opportunities rather than over-relying on lectures or grading of assignments. Assessment of student performance during practice in the VW Model happens in real time in a mentor/mentee guiding relationship.

Design of the VW Model

Visualizing one's whole self is about self-reflection and self-improvement. An Instructional Designer with a Ph.D. in education and 24+ years of experience teaching created the VW Model, specifically for occupational therapy and physical therapy doctoral programs (White et al., 2022). The model seeks to provide guidance to both faculty and students to create multiple opportunities for engagement, interaction, and mentorship. Faculty–student interaction is important for student success (Guzzardo et al., 2021). The VW Model sets about breaking the stereotype of faculty being superior to students and provides opportunities for developing a new type of relationship, one of mentorship. With the VW Model, faculty serve as mavens, mentors, coaches, and expert guides, while students view everything they do in courses as continuing their professional development, building on their unique knowledge skillset. This type of relationship is based on relational learning as a pedagogical technique used in occupational therapy education (Schaber, 2014).

Such a relationship shifts both expectations and actions of students and faculty. The students are to visualize or see themselves as the professional occupational therapy practitioner throughout the program's curriculum. Students come into courses with the expectation that they will not just passively sit and listen to a faculty member but that they will be actively involved and required to use all three domains of human development at any given time - physical, cognitive, and psychosocial (Chan et al., 2020). The whole-self tenet requires the student to continually assess their strengths and weaknesses and identify areas for growth. This personal reflection is done alone, with peers, and/or with faculty members, just as they would in the professional world (Araujo et al., 2022). Faculty serve as mentors and guides to these young professionals and actively work to help them understand the material, develop skills, and model how

to think like an occupational therapist (Araujo et al., 2022; Schaber, 2014). Students are encouraged to view tasks once thought of as homework, grades, and assignments as professional development opportunities, with the goal of mastering each skill. Removing points and opportunities for additional practice and guidance shifts the paradigm from a traditional classroom environment to a professional development environment.

The role of the VW Model is to create an environment where students and faculty work side by side with the common goal of student improvement, thereby mirroring the professional healthcare setting where veteran staff help coach and guide new employees. The focus of the model is to transform students' thinking from concern about an assignment or grade to what they can do to improve and how they can become better occupational therapy practitioners. This collaborative approach to learning helps alter preconceived notions of just doing enough to pass a class into continual self-improvement.

VW Model Course Deliverables

In the VW Model, the focus of attention, learning, and practice is on the course deliverables - what a student can do that others can visually observe to demonstrate a certain level of proficiency. Course deliverables are the actual demonstration of understanding in which all students must show mastery to pass the course. A course deliverable provides the students with the essential knowledge and skills they must be able to demonstrate. Course deliverables are observable action items that provide the foundation of curriculum planning. They are formatively reviewed, assessed, and practiced throughout the curriculum. These foundations provide guarantees of what students can do in future courses and that the students have mastered the required skills, leading students to be better prepared for fieldwork and practice.

During course development, faculty first focus on the final competencies needed rather than the content to achieve them, using the backward design learning model to establish the learning goals (Wiggins & McTighe, 2005). Faculty then determine the assessment methods which will inform and lead to planning learning experiences and instruction. These intentional steps by faculty promote student problem-solving abilities and mastery of content by connecting with student knowledge they already possess, which leads to deeper learning.





The VW Model provides students with the appropriate challenge level for course activities, time for reflection on course activities, meaningful feedback on how to improve, and multiple opportunities to practice. Designing learning activities that are challenging enough for student growth and development is necessary to help students identify areas of weakness or skills that can be further advanced. The course activity design is followed by consistent faculty-led student reflection and feedback, which integrate faculty/practitioner expertise and student improvement in learning. Lastly, the VW Model helps faculty promote mastery of the knowledge students need for long-term growth through continual practice and observable demonstration of course deliverables.

Quadrants of the VW Model

The VW Model integrates learning into four distinct quadrants: *Prepare Some*, *Practice Some*, *See Some*, and *Prove Some*. The four quadrants are not linear in nature. Each quadrant should be included in a lesson design; however, the order and time spent in each quadrant can vary from lesson to lesson based on the course deliverables. This structured approach to learning requires students to demonstrate mastery while faculty focus on developing practice activities and ongoing coaching (see Figure 2).

Figure 2

Quadrants and Areas of Focus

 <p><i>Prepare Some</i></p> <p>Students focus on information required for participation in a lesson.</p>	 <p><i>Practice Some</i></p> <p>Students focus on practice, reflection, and improvement.</p>
 <p><i>See Some</i></p> <p>Instructors focus on presenting and modeling the best example for students to visualize and imitate.</p>	 <p><i>Prove Some</i></p> <p>Students demonstrate mastery of the required course deliverable.</p>


Prepare Some

The *Prepare Some* quadrant focuses on what students need to know or be able to do before coming to the day's lesson. *Prepare Some* activities could range from reading new material to get a surface or preview level of understanding of what is to come or revising and adapting previously learned skills to new situations. Other examples might include focused reading of an article or a chapter from a textbook, listening to a recorded lecture over material, consumption and understanding of complex vocabulary, watching videos of skills, completing worksheets, or reading guides over the covered material (see Table 1). *Prepare Some* should not necessarily be viewed as homework by students, even though it is done outside the class's scheduled meeting time. The goal is for students to recognize that professionals in school and the real world often prepare intentionally for varied situations (Araujo et al., 2022). Such tasks are necessary for learning and developing skills. *Prepare Some* shows that the responsibility for certain aspects of learning lies solely with the individual learner. Students understand that they must dedicate time to the preparation to be able to

complete the tasks. At the same time, faculty must view *Prepare Some* as an opportunity to provide laser-focused tasks required for the next lesson for students. Students who do not prepare will have difficulty progressing with the lesson. This requires faculty to ensure the *Prepare Some* tasks are specific and truly prerequisite requirements to the day's lesson.

Table 1

The VW Model Quadrant – Prepare Some

VW Quadrant	Guiding Question for Faculty	Key Tenets
 <p><i>Prepare Some</i></p>	<p>What do students need to do/understand to be ready for the new information?</p> <p><i>Examples - Memorization, Readings, Skill Readiness, Pre-class Worksheets or Quizzes, Videos</i></p>	<p>Student Led. Moderate amount of time required.</p>

Practice Some

The VW Model utilizes deliberate curriculum design through the *Practice Some* quadrant and aligns as an essential part of the Burner theory of cognitive development (Metsämuuronen & Räsänen, 2018). This quadrant provides opportunities for students to use repetition to reinforce concepts through practice with vocabulary or a skill until mastery is achieved. *Practice Some* quadrant requires the most time of any of the quadrants. During this phase, students actively practice real-world applications of the required skills or deliverables (see Table 2). This builds on the work of Ericsson et al. (1993) by providing deliberate, purposeful practice for students. The goal of *Practice Some* is to provide all students coaching based on their unique performance, skills, attitudes, and knowledge levels. Students spend this time reviewing a deliverable (class session outcome using the backward design model) multiple times, with varying degrees of assistance, until they are proficient. The repetitiveness of *Practice Some* is an effective method to ensure skill development or procedural memory (Plack & Driscoll, 2017). During the *Practice Some* phase, faculty and, to some extent peers spend time coaching the students by providing feedback, suggestions, hints, and guidance. Faculty create multiple practice activities in advance as faculty never truly know how many will be needed for each group of students.

Another key component of the *Practice Some* quadrant is student reflection. This may be a reflection on performance through feedback, viewing videos of performance, or written reflection. The VW Model integrates the role of reflection in developing clinical reasoning and learning based on Schon's reflective model (Larsen et al., 2016; Schon, 1991). *Practice Some* focuses on formative learning and feedback, and students and faculty should spend the most time here. Students need to be honest with their self-reflections to accurately communicate their fears, concerns, and doubts with the faculty as they seek to improve. Likewise, faculty must be able to take students' reflections and assessments and adjust their guidance and teaching strategies accordingly without


judgment or punishment. When using the model, students and faculty understand that learning takes time, and that improvement is always the goal as a professional. The ability to be more confident in a skill, complete the skill efficiently, and adapt the skill as needed is a necessary attribute for the OT practitioner that cannot be mastered with just one of two demonstrations.

Aligning with Vygotsky's learning theory (Scott et al., 2021), faculty become the guide and mentor as students develop their skills, which is central to the VW Model. Through individualized interactions between a student who brings their unique skills and understanding and the seasoned professional faculty who provides real-world applications, tips, and guidance, the student moves from a novice practitioner to a more accomplished practitioner.

Specifically, the *Practice Some* quadrant allows students to utilize learning components that lead to long-term retention of information, including varied practice, recall, and reflection (Brown et al., 2014). Both procedural and declarative memory formation are reinforced during the *Practice Some* quadrant of the model. As students experience and reflect upon their own successes and weaknesses, they are better able to articulate areas of focus with their faculty and peers, establishing patterns of professional behavior for continual growth and development.

Table 2

The VW Model Quadrant – Practice Some

VW Quadrant	Guiding Question for Faculty	Key Tenets
 <p><i>Practice Some</i></p>	<p>What activities do students need to gain mastery of skills?</p> <p><i>Examples - Hands-on activities, Problem-solving tasks, Simulations, Meta-cognition from students, Worksheets, Case studies, Reflection, Presentations.</i></p>	<p>Student-led.</p> <p>Greatest amount of time required.</p>

See Some


Modeling is a major component of learning as humans learn natively through imitation (Benbassat, 2014; Mohammadi et al., 2021). The *See Some* quadrant of the VW Model focuses on providing students with intentional examples. *See Some* primarily focuses on the faculty member ensuring that the best example of performing a task is presented to students. Role modeling helps students grasp the big picture and become better equipped to understand the components that make up the final deliverable when they see a correct demonstration of the whole task (Gladstone & Cimpian, 2021). Faculty role modeling provides the opportunity for specific skills to be highlighted while also enabling the faculty to present the material in a clear and concise manner.

This approach differs from traditional instruction, where the faculty breaks up the tasks into smaller parts first and then assumes the students can put those pieces together to develop the larger picture. The VW Model reverses this approach, providing students with a clear idea of what they ultimately need to do and coaching them through the execution of each task. The *See Some* aspect of the VW Model builds on Vygotsky's learning principles of scaffolding and zone of proximal development (Scott et al., 2021). Students start with increased levels of support from the faculty and over time, as their skills and understanding improve, the levels of support decrease until the student can perform the task without any assistance. This helps in keeping focus and provides a solid point of reference as to what students are doing and how it fits in with the bigger picture. During this phase, students must see the best way to complete a skill or assignment.

The *See Some* quadrant of the VW model allows students to explicitly see how the faculty reason through a concept or scenario. *See Some* may include demonstrations, example papers, or describing the professional reasoning the faculty member uses (see Table 3). Defined as thinking about thinking, metacognition (Fleur et al., 2021) is an important element in *See Some*. The use of metacognition by instructors enables students to visualize how an expert thinks through options, problem-solves and determines possible solutions. Such demonstrations provide more opportunities for students to develop and refine their skillsets by initially imitating the thinking of experts. Similarly, the use of metacognition by students is a powerful tool in reflecting their own understanding of a topic and their level of mastery. As students develop their skills and after demonstrating mastery themselves, they can provide *See Some* for their peers. This further improves and solidifies their knowledge and assists peers in their development by providing an alternative voice or style additional to the instructors'.

Table 3

The VW Model Quadrant – See Some

VW Quadrant	Guiding Question for Faculty	Key Tenets
 <i>See Some</i>	What modeling do students need to help assist the development of understanding? <i>Examples - Expert/ peer demonstration, Videos, Examples, Meta-cognition of Experts, Peer experts.</i>	Faculty-Led. Moderate amount of time required.

Prove Some


In the *Prove Some* quadrant, faculty expect students to demonstrate mastery of a deliverable at that point of the curriculum. Often mistaken for a test, *Prove Some* is about the students showcasing and performing the minimum expectations of the deliverable. Opportunities to *Prove Some* are presented after students feel comfortable with the skills necessary to showcase understanding. The time for comprehensive

feedback is during the *Practice Some* quadrant rather than during *Prove Some*. Because of this, feedback to students after a *Prove Some* session is minimal, as the expectation is that students are well prepared to demonstrate the deliverable by meeting the minimum expectation of the task at that point of the curriculum. If a student does not demonstrate mastery of the required deliverable in *Prove Some*, they must return to the Model's other quadrants to further refine and improve their skills. Once students regain confidence with those skills, they can seek to try the *Prove Some* session again.

A *Prove Some* should be a celebration of achievement even as learning remains an ongoing process (McTighe, 2013; McTighe & Ferrara, 2021; Wiltbank et al., 2019). There is always room for improvement; students need time to contemplate their progress and accomplishments. The opportunity to highlight abilities is a cornerstone piece of *Prove Some*. Pride in achievements, especially when those achievements come from hard work and long hours, can inspire further learning (Alghasab, 2020; Alston & Ericksen, 2019). The goal is for students to use these experiences to realize they can be successful, build confidence, and establish a belief that the VW Model, along with the faculty guidance, provides them the necessary framework to overcome difficulties in the future. When used correctly, an assessment can be an opportunity for additional learning and knowledge creation rather than just an evaluation of knowledge (Harrison et al., 2017). In a typical educational model, *Prove Some* might be considered the summative assessment of knowledge (see Table 4); however, in the VW model, *Prove Some* provides key markers of achievement and can happen throughout the course and program's curriculum.

Table 4

The VW Model Quadrant – Prove Some

VW Quadrant	Guiding Question for Faculty	Key Tenets
	<p>How can students visually demonstrate they have mastered the course objective(s)?</p> <p><i>Examples - Real life assessments, Realistic questioning, Exams, Checkouts, Simulations, Systematic reviews, Capstone projects</i></p>	<p>Student Led.</p> <p>Least amount of time required.</p>

The four quadrants of the VW Model provide structure to both students and faculty. Understanding each quadrant enables better preparation, focuses attention on specific deliverables, and reduces the unlimited extra information that can overwhelm novice health professions learners. With an emphasis on real-world application and assessment in a safe learning environment, students actively participate by visualizing themselves in their chosen field. The goal is to continuously enhance the professional skillsets required to become competent and successful occupational therapy practitioners.

Learning Delivery Models Compared to the VW Model

The VW model builds upon works of several educational approaches, including backward design (Wiggins & McTighe, 2005), deliberate purposeful practice (Ericsson et al., 1993), and Bruner and Bandura's non-transmission of knowledge (Curran, 2008, 2014). The model was designed to help new and experienced faculty create learning environments where students are actively involved, individually coached, and responsible for demonstrating their skills and knowledge while avoiding common issues encountered in traditional unimodal educational delivery (see Table 5). These theories set the foundation for the VW Model of instructional design. Educators can use the VW Model to design course curricula that meet the adult learner's complex needs while ensuring flexibility in thinking for the changing healthcare environment and the emerging occupational therapy practice areas.

Traditional approaches to teaching in the United States higher education system often include lecture-based courses, flipped courses, or competency-based courses. While these approaches have been common practices, they are not without their faults. Traditional higher education teaching models typically consist of faculty disseminating information; students take the information and must then apply it on their own (Zachary et al., 2017). Lecture-based instruction can potentially hinder student learning as it does not promote affective or psychomotor behaviors, is passive in nature, and fails to consider the stage of understanding of individual students (Fitzgerald & Jacobs, 2020). This type of educational approach may not consider best practices in learning theory, the needs of the healthcare environment, and what is known about memory and learning. However, the expectation of lectures in classrooms and its efficiency in presenting information to a group is valuable and should not be easily dismissed in the call to move to more active-based learning. The VW Model strategically pulls aspects from the traditional approach. Instead of using lecture for the majority of class time, the VW Model looks to insert "mini-lectures" into the lesson design where it will have the most impact and is the best educational tool for the tasks. Mini-lectures can be inserted within the *See Some* quadrant of design and within the *Practice Some* and *Prepare Some* quadrants.

Many occupational therapy programs have adopted instructional approaches such as the flipped classroom in place of lecture-based instruction. The flipped learning design model is a form of blended learning where students independently acquire new content through videos, activities, and readings prior to class and then engage in in-person active learning activities with peers and faculty (Chakraborty et al., 2021; Lee et al., 2017). This hybrid approach to learning reverses the order of interaction between students and learning content in the traditional learning model (Hwang et al., 2023). In contrast to the traditional teaching model, the flipped classroom moves the charge of learning from the faculty to the students, and the learning space can vary from the traditional lecture classrooms and labs (Long et al., 2017). The VW Model pulls aspects from the flipped-learning approach, specifically, the student preparation before class aspect - the *Prepare Some* quadrant.

Flipped learning is a constructivist approach that has been shown to increase confidence in evidence-based practice for entry-level occupational therapy doctoral students (Cowan et al., 2023). In the flipped learning design, students practice and master the materials during in-class sessions (Gopalan et al., 2022). While the flipped classroom actively engages students during class time (Long et al., 2017), it does not consider student mastery of content before moving on to new content or material in the course. The VW Model integrates the strengths of these approaches with the *Prepare Some* and *Practice Some* quadrants of design. Table 5 shows the comparison between the traditional, flipped, and VW instructional design models.

Unlike traditional education models, which focus on cognition and content acquisition, and the flipped learning model, which promotes active learning, the VW Model seeks to address the unique needs of healthcare curricula. The VW Model helps students understand content and concepts and integrate those cognitive skills through physical expression. Incorporating what is known about the science of learning and retention of material can be enhanced by providing students with opportunities to work with concepts and material multiple times and in various manners. A thoughtful instructional design is needed to respond to the changing landscape of health care. Creating multimodal learning opportunities that promote clinical reasoning is imperative. A sound instructional design model should address the dynamic healthcare environment and move occupational therapy education toward multimodal pedagogy and student-centered learning.

Table 5

Comparison of Instructional Design Models

	Traditional (Khalaf & Zin, 2018)	Flipped (Lundin et al., 2018)	VW Model
Student/Faculty Role	Students – passive learners Faculty – expert	Students – active in the learning process Faculty – expert	Students – self-directed learners seen as occupational therapists in training. Faculty – role model, guide, coach, mentor
Course design	Faculty identifies content. Accreditation standards and/or chapters in a textbook may dictate content.	Faculty identifies content. Accreditation standards and/or chapters in a textbook may dictate content.	Faculty identifies course deliverable(s) utilizing the backward design. Faculty integrate accreditation standards into courses based on deliverable(s).
Instruction and activities during class	Limited engagement by students – passive listeners	Class time is work time for students – engaged.	A mixture of mini-lectures for students to prepare , modeling for students to see the best examples of performing a task, and students actively engaged in practice during the class sessions.
Meeting course objectives	Faculty move on to the next topic, regardless of student mastery of course objective or content.	Faculty move on to the next topic, regardless of student mastery of course objectives or content.	Students prove mastery of the topic and/or skills after exhibiting knowledge through practice with faculty.
Formative assessment	Students complete homework after class. Homework is graded with some faculty feedback. Students receive points for completing homework.	Faculty provides active learning activities in class with feedback as needed. Students may complete homework after class for points and feedback.	Students complete initial faculty-monitored practice of content. Students initiate self-reflection of learning and ask for more instruction as needed to move on to the next more complex skill/concept.
Summative assessment	Students earn a grade based on an average of completed assessments and homework.	Students earn a grade based on an average of the assessments, class activities, and homework completed.	Students are required to repeat practice until ready to prove mastery of course deliverables within the course timelines.

Discussion

The VW Model was designed based on the above-cited instructional models, learning theories, best practices, and extensive experience working with faculty in healthcare professional fields and curricula. The VW Model was developed to assist faculty to create new academic programs, courses, or lessons based upon best practices and the science of learning while maintaining a focus on student mastery.

The Role of Students in the VW Model of Instruction

Higher education for occupational therapy and other healthcare students requires consideration of multiple factors that should intentionally contribute to the selected instructional design model. These factors include but are not limited to, learning theories, the ever-changing state of the healthcare system, how learning occurs, and accreditation requirements. In normative educational theories, faculty require students to be prepared for expertise, adaptability, and rigor while continuously learning (Kulasegram & Rangachari, 2018). Students studying for a profession that works in healthcare settings want a didactic education that prepares them for clinical reasoning through high-demand and varied situations (Ruczynski et al., 2022). Learning through problem-solving, applying students' unique knowledge and experiences, and being an active participant in the educational process are essential to adult learners (Kong, 2021). Adult learners are typically more independent and self-directed in their learning. Academic programs should be designed to utilize these learning strengths and build on them as students' professional knowledge and skills advance.

It is essential to recognize the significance of allowing students to encounter failure to establish an engaging, student-centered environment with a strong emphasis on continuous self-improvement. Failure provides valuable insights for both students and faculty, shedding light on specific strengths and weaknesses and enabling necessary adjustments to enhance student progress (Harrison et al., 2017). Therefore, changes to the view of practice and assessment require a change to the view of the traditional education grading system. In the traditional model, grades are often an accumulation of individual snapshots of a student's performance. In contrast, in the VW Model, grades are a recognition of final overall performance, not an accumulation of how long it took to achieve mastery. This is a major shift for many students and faculty in how grades are determined. If the goal of the VW Model is that all students, by the end of the course, demonstrate proficiency in the course deliverables, then all students should pass the course. While the ability to demonstrate the minimum level of expectations is consistent, innately, some learners can perform better than others, and therein lies the subtle variations in scores and grades, the difference between assessment and evaluation.

The Role of Educators in the VW Model of Instruction

In addition to providing an educational structure from which new faculty can develop educationally sound lessons focused on course objectives, the VW Model's structure also enables experienced faculty members to highlight their coaching abilities rather than their lecture abilities. The principles of learning theory, the type of learner, and the end goal of a curriculum are key components of an instructional design process. However, in a scoping review, McInerney and Green-Thomson (2020) found that health

science faculty did not have a solid understanding of educational theory and how it relates to instructional design. This gap between professional expertise and clinical skills with educational learning theory and design in higher education programs supports the need for explicit and intentional instructional design. The VW Model is grounded in learning theory and best practices in teaching and learning.

ACOTE asserted that occupational therapy programs must incorporate adult learning theory and best practices in teaching and learning while also considering the current state of healthcare and what is known about how learning occurs. Occupational therapy programs must also maintain compliance with those regulatory standards and student competencies (ACOTE, 2018, 2023). While some occupational therapy educators have moved away from passive, lecture-based methods to newer, more active-based approaches, such as the flipped classroom, there are still potential gaps in student knowledge and preparation. Likewise, having large numbers of clinically trained faculty who have yet to take education courses and have minimal classroom teaching experiences may lead to poorly constructed lesson designs that contribute negatively to student knowledge and preparation (McInerney & Green-Thompson, 2020). Providing a structure for teaching and learning helps all faculty plan and create interactive, engaging, lessons focused on measurable outcomes.

Incorporating the VW Model into the OT Curriculum

In implementing the VW Model, the occupational therapy faculty and staff collaborated on how to embed it into the curriculum and what it would mean for course design. The occupational therapy department held multiple working sessions to educate the entire faculty on the model's principles and explore its integration and implementation into the occupational therapy program.

Worksheets featuring the four quadrants were created to aid in lesson design. Regular meetings were convened among faculty, facilitating brainstorming sessions to optimize the incorporation of the VW Model into course designs. Furthermore, faculty members participated in end-of-semester retreats where they assessed the semester's successes and challenges. They also delved into thematic analyses of student feedback from course evaluations. This practice of reflection and analysis, encompassing both positive and challenging aspects of the courses, fostered the ongoing growth and refinement of the faculty's teaching and learning within the VW Model.

Additionally, ACOTE requires that programs assess students' knowledge, skills, attitudes, professional behaviors, and competencies congruent with the curriculum design (ACOTE, 2018, 2023). The VW Model requires total assessment and training of all domains in a deliberate ongoing manner, just as health science professions require proficiency in relating with clients, analyzing their needs, formulating plans tailored to those needs, assessing the outcomes, and monitoring and adjusting accordingly. Focusing on only the cognitive and physical aspects and leaving the psychosocial clinical experience out may negatively affect overall occupational therapy student development.

With this model, students understand that the responsibility for learning ultimately falls on their shoulders. While commonly used in higher education, it is known that multiple-choice assessments are not 100% accurate in their reflections of whether a student understands the content (Cox, 2019; van Wijk et al., 2023). However, the VW Model requires students to explain their thinking and their honest assessment of their understanding. Honest self-reflection, along with an expert's external assessment, provides a closer reflection on a student's true level of understanding. Ensuring assessments are demonstrations of actual real-world events reinforces the importance of the assessment to the students.

By contrast, incorporating all the developmental domains in all courses ensures more practice and assists students in pulling together the big picture to aid in comprehension (Araujo et al., 2022). The VW model allows faculty members and students to continually assess these areas and grow as professionals. The model also enables the faculty to address some challenges that faculty and students encounter with traditional teaching styles. The model emphasizes students demonstrating their skills and continually improving themselves, while faculty position themselves as professional guides who provide insight and coaching to students. Having a safe environment where students can make multiple attempts, fail, and then learn from failing can create a better learning arena in which development and improvement are watchwords.

The VW Model aims to change the standard learning environment to one that looks and feels authentic and mirrors the real world. Establishing such an environment offers a unique opportunity to shift the traditional learning paradigm and cultivate an authentically student-centered learning model. This model places individual accountability on each student to exhibit the proficiency levels necessary for entry-level occupational therapy, while affording students ample focused practice and coaching to attain the requisite skill level.

Student Assessments and the VW Model

Historically, students and faculty in the occupational therapy program invested significant energy in assignments, grading, and final grades, or primarily focusing on awarded points. The VW Model adjusts that approach by changing the focus from a student's ability to rote memorize and recall information to a central question of whether students truly understand and can demonstrate the concept or skill. This redirection places an emphasis on students to demonstrate the skill, which necessitates an underlying mastery of understanding of the requisite content. Faculty, on the other hand, focus their time on providing individual student guidance and encouragement until mastery of the skill is demonstrated, rather than spending time grading assignments, worrying about plagiarism or cheating. Faculty no longer spend significant energy with traditional assignments/quizzes, as they might not show students' true level of understanding. This shift to skill mastery includes a new faculty/student dynamic where students are continually assessed by faculty and peers; eventually, a culture of self-improvement is developed through self-reflection via non-punitive measures and understanding that mistakes are learning opportunities.

By assessing in multiple ways and multiple times, evaluations of a student's performance are more accurate and represent a fairer view of their real-world skillset. Students receive grades of complete/incomplete during *Practice Some* assignments, quizzes, or learning activities. Percentage or points-based grades are given for examinations or assignments related to the *Prove Some* quadrant of the VW Model. Such real-world assessment also provides students the opportunity to highlight their knowledge and self-assess their competency as entry-level practitioners. As the development of students' whole-self is central to the goal of the VW Model, the issue of honesty and critical self-assessment is crucial. Students need to develop the ability to self-assess and clearly understand their strengths and weaknesses. In addition to the need to self-assess, students must become comfortable with receiving feedback from faculty or peers. In many situations, it is difficult, if not impossible, for a faculty member to assess a student's ability accurately, as the student may have performed the task correctly by chance but did not fully understand why they were doing it, or did not feel at ease with the entire process. At such times, students need to self-assess their performance level and articulate their unease to the faculty. Likewise, if a student is struggling with a task, honest communication between the faculty providing the feedback and the students assessing themselves as to what they might need to help overcome this challenge is important. The learning environment should be set up such that students are comfortable asking for what they need such as additional practice, preparation, or seeing the skill role modeled with the faculty's expertise.

Just as the faculty endorsed the VW Model, students have also expressed their appreciation, enjoyment, and belief that this model is helping them to better learn the content and skills. An external review conducted by the Director of the Teaching and Learning Center was completed over three semesters with the inaugural cohort. The director interviewed the cohort of students on the instructional design model used and their thoughts on the new Occupational Therapy Doctorate (OTD) program. Students reported that repetition and practice and less emphasis on in-class lectures gave them a deeper understanding of the course material. One student commented, "The professors provided us with multiple videos and activities and demonstrations that helped us think about the content in a deeper way and furthered my understanding of the material." Recent external course reviews conducted with students and end-of-year course evaluations consistently show students' appreciation for the VW Model. Students clearly understand the quadrants of the VW Model and use its language when seeking guidance, as illustrated by one student when they wrote, "Overall, I enjoyed this course and the format/layout of it, I liked how the course was mostly hands-on (prove-its and projects) and less sitting in a classroom and being lectured to."

In summary, students came to terms with the shift in learning and the emphasis on student performance. Students have learned the model so well, that when instructors are not using the model correctly, the students are quick to point it out. They appreciate the faculty's effort, the lack of long lectures, and the elimination of busy work. Similarly, interviews and student course evaluations emphasize how they appreciate this design and believe it is helping them become better prepared.

Strengths and Limitations

Current information regarding the strengths and limitations of the VW Model is anecdotal; however, there are plans to conduct research regarding faculty and student perceptions of the model as well as quantitative analysis of the model's efficacy with student outcomes. Evidence from annual program assessments, including student and faculty testimonials, reflections, and observations, shows that the model has strengths. However, a qualitative study investigating students' and faculty's perceptions of the VW Model could provide compelling empirical evidence.

The intentional embedding and threading of the four quadrants throughout the curriculum, leads to congruent lesson designs focused on course deliverables. Conceptualizing course content in this manner helps faculty convey to the students both assignments and class expectations. Students have a clear understanding of those expectations, not only how they will be assessed, but also how they will be practiced.

The VW Model eliminates reliance on a traditional lecture format, allowing students to actively engage with the material and have deeper learning experiences. Active learning principles are evident throughout the literature as best educational practices (Michael, 2006; Prince, 2004; Reilly & Reeves, 2022). The model allows for constant in-the-moment formative feedback from both faculty and peers, allowing students to learn from mistakes and fine-tune skills during class time.

Faculty notice that the model develops stronger collaborative relationships between themselves and the students. Rather than feeling like they needed to know everything and be perfect, instructors commented that a sense of "we will figure this out together" reduces the pressure of teaching. This new learning environment provides students an authentic insight into the professional world of occupational therapy, as practitioners do not always have immediate answers in client cases. This helps students realize that there is not always a single right answer, and that ongoing investigation and learning is necessary to provide a high standard of care. This collaborative practice-intense learning environment appears to accelerate the growth of students' confidence in their skills and themselves, enabling students to perform better and develop their style of patient care.

While the model has strengths, it also has some limitations. One noted limitation is the cognitive load on the faculty when initially designing a course using the principles of the VW Model. The faculty report that teaching using this model is rewarding but requires a significantly higher cognitive load than seen with traditional learning models such as lecture-based instruction. Another ongoing challenge for faculty is how to best manage the rare occasions when a student is still unable to perform the task or assignment successfully, even after extensive practice and re-practice. With the various demands of working in higher education, faculty may be tempted to fall back to traditional teaching methods, such as passive lecture, as it might be perceived as being easier for both them and their students. Lastly, there is always the risk of students failing to complete their pre-class preparation, and faculty are then faced with how to engage students in content when they do not have the background from the *Prepare Some* materials.

Implications for Occupational Therapy Education

The VW Model was designed to guide course design and pedagogical practices tailored to health professions programs. Since the VW Model is based upon best practices in teaching and learning, this model could be adapted for undergraduate occupational therapy programs. With the VW Model, students engage in a process of self-identification with the role of occupational therapist. This cognitive construct is collaboratively cultivated through faculty guidance and curriculum assimilation. Central to this construct is the students' obligation to conduct a comprehensive self-assessment, thereby identifying their individual strengths and weaknesses, and maintaining a continued commitment to self-improvement in areas requiring enhancement. Furthermore, emphasizing the importance of each facet within the VW Model is crucial, with no singular component taking precedence to the detriment of the others.

The model requires faculty to role model and demonstrate the correct method of performing or completing an activity (*See Some*) before adding additional 'curves' to the activity. Students are asked to watch videos, read content, complete worksheets, or other activities before working with the content (*Prepare Some*). Students practice skills and behaviors while receiving formative feedback from themselves, peers, and faculty in a safe environment (*Practice Some*). Students are assessed on the skills and behaviors important to show mastery of the topic and content (*Prove Some*). The model provides flexibility for use during course design based on the type of course and level of prior exposure to the course content for the students. For example, if anatomy and physiology are pre-requisite skills, the applied anatomy instructor may start the course in the occupational therapy program with a *Practice Some* to determine gaps in knowledge from the pre-requisite. Furthermore, the model intends to provide students with adequate practice as the content builds upon content from previous courses.

Future qualitative research will offer a clearer understanding of the student and faculty perceptions of the model. In addition, research to examine the impact of the VW Model on clinical reasoning, fieldwork success, board pass rate, and other components of the occupational therapy program are integral. The scholarship of teaching and learning could be used to assist faculty in assessing and improving the impact of the VW Model. This may influence faculty decisions regarding selecting content delivery methods that enhance student learning and outcomes.

Conclusion

The development of a new OTD program at this institution allowed the faculty and staff to reflect on the program's teaching and learning philosophy. The occupational therapy department implemented the VW Model in each course to shift the responsibility of learning to the students by engaging them actively in all three developmental domains essential to the occupational therapy profession: cognitive, psychosocial, and physical. The VW Model quadrants provide faculty, regardless of their educational background or expertise, a format to follow that assists with strong lesson and course designs. Such designs help students engage in real-world activities focused on developing the required entry-level skills needed to be an occupational therapy practitioner. While only

being in place for four years, the model has shown itself to be successful with both students and faculty in terms of general classroom satisfaction as well as skill development. The students and faculty are actively engaged in improving the model, and additional research into its effectiveness, limitations, challenges, and rewards is ongoing.

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