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# The Subject-centered Integrative Learning Model: A New Model for Teaching Occupational Therapy's Distinct Value

## Abstract

The concept of occupation-centered education has been used to describe what programs do when they infuse occupation throughout an occupational therapy curriculum. In describing occupation-centered education, educators often describe the strategies they use to help students learn occupation, including courses about occupation, direct experience with occupation, cases and questions that connect biomedical sciences and health conditions to occupation, assignments that require students to infuse occupation into therapy, curriculum threads related to occupation, and many others. While each of these strategies is important, no conceptual model exists that defines occupation-centered education, elaborates its concepts and principles, and guides the development of curriculum and instructional strategies, uniting them within a whole theoretical approach to teaching occupational therapy. Research has consequently demonstrated that occupation can remain hidden and implied in these and similar teaching and learning strategies. Further, the number of topics students must learn continues to explode and many are not profession-specific. Thus, students and educators alike need a learning framework that helps them intentionally relate multi-disciplinary topics to the distinct value of occupational therapy. The Subject-centered Integrative Learning Model (SCIL-OT) is a conceptual model that outlines the theoretical foundations, elements, and principles of occupation-centered education. This model thus offers a roadmap for curriculum and instructional design that seeks to place the concept of occupation at the center of all aspects of education.

## Keywords

Curriculum and instruction design, occupation-centered education, teaching occupational therapy, education

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## The Subject-centered Integrative Learning Model: A New Model for Teaching Occupational Therapy's Distinct Value

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### ABSTRACT

The concept of occupation-centered education has been used to describe what programs do when they infuse occupation throughout an occupational therapy curriculum. In describing occupation-centered education, educators often describe the strategies they use to help students learn occupation, including courses about occupation, direct experience with occupation, cases and questions that connect biomedical sciences and health conditions to occupation, assignments that require students to infuse occupation into therapy, curriculum threads related to occupation, and many others. While each of these strategies is important, no conceptual model exists that defines occupation-centered education, elaborates its concepts and principles, and guides the development of curriculum and instructional strategies, uniting them within a whole theoretical approach to teaching occupational therapy. Research has consequently demonstrated that occupation can remain hidden and implied in these and similar teaching and learning strategies. Further, the number of topics students must learn continues to explode and many are not profession-specific. Thus, students and educators alike need a learning framework that helps them intentionally relate multi-disciplinary topics to the distinct value of occupational therapy. The Subject-centered Integrative Learning Model (SCIL-OT) is a conceptual model that outlines the theoretical foundations, elements, and principles of occupation-centered education. This model thus offers a roadmap for curriculum and instructional design that seeks to place the concept of occupation at the center of all aspects of education.

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For over two decades, scholars have sought to promote occupational therapy's distinct knowledge and practice through occupation-centered education (Wood et al., 2000; Yerxa, 1998). *Occupation-centered education* refers to teaching and learning in which educators systematically link all aspects of a curriculum to occupation, from its broadest aim, vision, and mission to its specific curricular activities, assessment approaches, and processes used daily in classrooms (Hooper, Krishnagiri, & Price, 2020). Educators seeking to design and implement occupation-centered education, however, have few resources. The Model of Subject-centered Integrative Learning in Occupational Therapy (SCIL-OT) is a resource for educators that outlines the theoretical foundations, elements, principles, and practices of occupation-centered education. The SCIL-OT Model can help educators to teach, and students to learn and subsequently deliver, the distinct value of occupational therapy on behalf of clients.

The purpose of this paper is to introduce the SCIL-OT Model. To accomplish this purpose, we first explain the need for this model and its use of the phrase, subject-centered integrated learning. We then introduce the five elements of the SCIL-OT Model and their associated guiding principles, challenges, and the model's guidance with respect to those challenges. Lastly, we summarize interdisciplinary theories of learning that validate the SCIL-OT Model.

### **THE SCIL-OT MODEL: NEED AND LANGUAGE**

In response to calls for occupation-centered education, the World Federation of Occupational Therapists (WFOT, 2016) requires that all occupational therapy education programs worldwide teach students about occupation. Specific requirements or standards vary, however, across accreditation councils such as the WFOT, the Accreditation Council for Occupational Therapy Education (ACOTE; 2018) in the United States, the Health and Care Professions Council (2018) in the United Kingdom, and the Occupational Therapy Council (2018) in Australia. Further, these accreditation standards only define *minimal acceptable* criteria related to teaching occupation. Most importantly, accreditation standards do not comprise a conceptual model for designing occupation-centered education. Although WFOT's newly revised minimum standards require robust content on occupation and offer generic advice on curriculum design, this advice still neglects how to organize, prioritize, and visualize all knowledge in relationship to occupation.

It is our understanding, therefore, that no conceptual model is available that outlines what is meant by and how to design occupation-centered education, leaving us, as educators, without clear guidance. For guidance, we still often turn to accreditation standards related to occupation, but as noted, these standards are not models that guide the design of occupation-centered education. We also turn to general theories and pedagogical approaches from education, but alone these theories and approaches have little connection to occupation. We also consult the few published articles on occupation-centered education, but alone this work also falls short of a model to guide curriculum design, instructional approaches, and learning and assessment activities. Without guiding models, even when educators are deeply committed to occupation-centered education, the concept of occupation may remain implicit in curricula,

classroom processes and materials, and assessment approaches (Krishnagiri, Hooper, Price, Taff, & Bilics, 2017). If the concept of occupation remains largely implicit in education, then students can miss their distinctive contribution to the health of individuals, communities, and populations.

Given the centrality of knowledge about occupation in curricula, one might ask why the SCIL-OT Model is named *subject-centered* rather than *occupation-centered integrative learning*. The short answer is that subject-centered reflects the model's interdisciplinary influences; particularly, interdisciplinary views of professions. Scholars in education and sociology have described a *profession* as a community united by a unique body of disciplinary knowledge that is applied to unique societal concerns and needs (Abbott, 2014; Freidson, 1994), and is concentrated on a *core subject* (Bruner, 2009; Elder & Paul, 1994). Core subjects reflect a profession's hallmark philosophy; central focus of inquiry, thought, and practice; and that which holds the highest importance. As Palmer (2017) summarized, "every discipline has a gestalt, an internal logic, [and] a patterned way of relating to the great [subject] at its core" (p. 125). For example, "movement and movement-related function" is the core subject of physical therapy; "the study of humanness in the health circumstance" is the core subject of nursing; "materials and the limits and potentials" is the core subject of engineering; and disability and the enabling-disabling process is the core subject of rehabilitation (Hooper, Greene, & Sample, 2014). In contrast to these core subjects, occupation—humans' occupational need and drive for occupation and occupation's capacity to form and transform people, environments, communities, and societies—is the core subject of occupational therapy (American Occupational Therapy Association, 2014; Fortune & Kennedy-Jones, 2014; Townsend & Polatajko, 2013).

To understand professions as concentrated around core subjects is to understand that professional education, too, must be concentrated around core subjects. Professional education is therefore *subject-centered*. Applied to occupational therapy education, the interdisciplinary concept of *subject-centered* refers to making *occupation* visible and accessible to learners across curricular elements, including all courses, assessments, and learning activities, even when students are primarily learning about other topics.

### **THE SCIL-OT MODEL: FIVE ELEMENTS**

As next described and illustrated in Figure 1, the SCIL-OT Model is comprised of five elements: (1) occupation at the core; (2) the topics that students learn; (3) the knowledge community; (4) the learning context; and (5) the interconnecting lines.

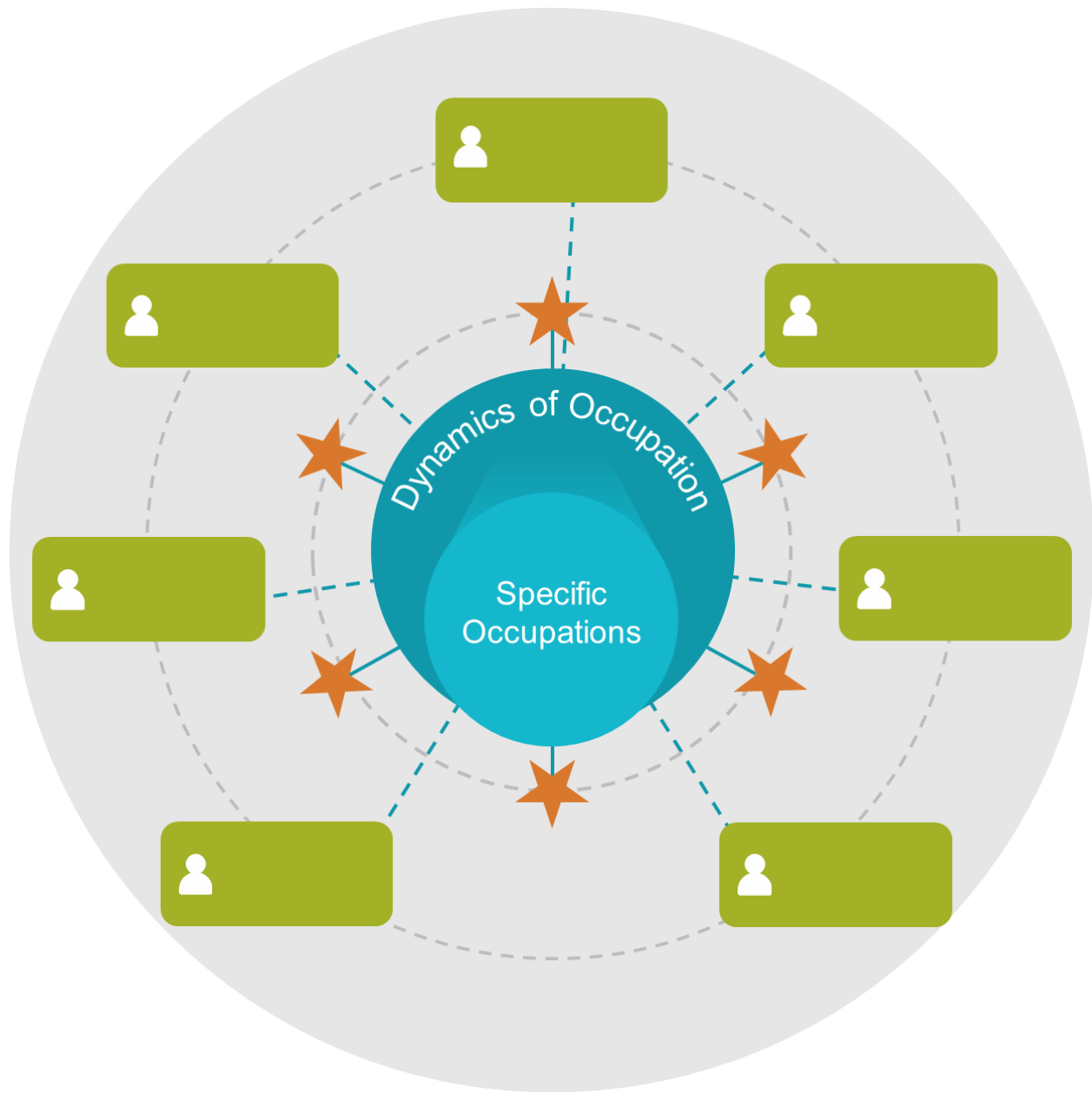


Figure 1. *The Model of Subject-centered Integrated Learning in Occupational Therapy.*  
 Note. Five elements of the SCIL-OT Model: (1) occupation, comprised of specific occupations and dynamics of occupation (center circles); (2) topics that students learn (orange stars); (3) the knowledge community (human icons); (4) the learning context (light grey background); and (5) the connecting lines (solid and dashed lines). Instructional design, teaching and learning, and assessment occur “on the lines.” Educators and students create connections among topics and the core (lines connecting the stars to center circles), topics and other topics (lines connecting stars to each other), personal experience and the core (lines connecting rectangles to center circles), and members of the knowledge community (lines connecting rectangles).

### **First Element: Occupation**

*Guiding Principle 1: Occupation is the Core Subject of Occupational Therapy; Therefore, Occupation Is the Core Subject of Occupational Therapy Education*

Because the concept of occupation represents occupational therapy's reason for existing, occupation is the subject at the center, or core, of all occupational therapy education. Occupation, therefore, comprises the first element of the SCIL-OT Model. Two dimensions of occupation that educators must consider when designing learning are highlighted: specific occupations and the dynamics of *occupation* (see Figure 1).

*Specific occupations* refer to familiar taxonomies of occupation such as basic and instrumental activities of daily living, work, education, and play and leisure, among others. As educators, we commonly teach specific occupations through texts that represent the field's scope of practice and process such as the *Occupational Therapy Practice Framework* (American Occupational Therapy Association, 2014) or *Enabling Occupation II: Advancing an Occupational Therapy Vision for Health, Well-being, & Justice through Occupation* (Townsend & Polatajko, 2013). We also ask students to observe, analyze, adapt, and teach specific occupations, as well as to relate client factors such as movement, vision, and cognition to specific occupations. Having specific occupations as one dimension of the SCIL-OT Model's core subject reinforces the importance of these long-standing emphases in teaching occupation.

The model additionally suggests that educators take curriculum and instruction design further by addressing the second dimension of the profession's core subject, the dynamics of occupation. Most basically, the *dynamics of occupation* refer to the complex mechanisms by which occupation works in relation to health. Concerning this relationship, educators commonly teach students general concepts such as "human beings possess an innate, biological need for occupation," or that "as humans engage in occupation, they meet needs for survival, growth, development, health, and well-being" (Hooper & Wood, 2018, p. 46). Teaching general concepts like these is important. But if students are going to use occupation as a mechanism of health, then they must deeply understand and articulate the dynamics by which occupation relates to and influences health. The SCIL-OT Model prompts educators to help students unpack the complexities behind specific occupations.

To illustrate, as educators, we often teach the specific occupation of eating mainly by having students consider eating as an ends and means. As an end, students explore how a client's diagnostic-based impairments such as impaired visual scanning or difficulty swallowing impact eating, followed by how to adapt eating to compensate for impairments, and how to teach family members and caregivers strategies for enabling eating. As a means, student explore how to set up feeding to remediate impairments such as visual scanning or upper extremity motor control. To be sure, a certain level of unpacking has occurred when students learn about eating by understanding it as both an ends and means in therapy. However, students can learn all these aspects related to the specific occupation, yet still not grasp the rich complexities of this occupation or *why* occupational therapists are concerned with eating at all.

Consider, therefore, how we can design instruction to further unpack the specific occupation of eating and help students grasp its inner dynamics related to health and thriving. We design instruction wherein students explore the macro contexts of eating; that is, the webs of transactions that, first, make the occupation of eating even possible and, second, make it an agent of health. For example, students might begin with humans' biological drive for food and nutrition. Students discover that humans respond to the drive for food through engaging in an array of food-related occupations. Eating is now situated with the larger occupations of growing, transporting, acquiring, and preparing food. Each of these larger occupations also embody complex interactions among cultural traditions, politics, objects, habit, economics, geographic location, technology, temporal rhythms, meanings, and social connections. Students might examine how each performance of eating is a specific manifestation of all these occupations coming together.

As students examine eating at the individual level, they learn how eating, as any occupation, elicits and integrates six human sub-systems: the physical, biologic, information processing, sociocultural, symbolic-evaluative and transcendental (Sadlo, 2016). Students might explore further how eating is coordinated with an array of other occupations, some occurring at the same time such as helping others eat, catching up on the news, connecting with a loved one or a community. By examining these complexities, students learn to explain how the specific occupation of eating manifests general dynamics of occupation in health such as these: people a) meet survival needs for food, b) meet psychological needs for competence, autonomy, relatedness, and growth, which are considered foundational to health and well-being (Matuska & Christiansen, 2008), and c) draw upon, utilize, develop and maintain unity among their bodies, minds, contexts, social relationships, communities, and societies, and so influence their health (Molineux, 2009).

To illustrate further, Bagatell and Womack (2016) described a course they designed to have students explore the dynamics behind specific occupations, including eating. In this course, students examined sociocultural and geopolitical factors influencing “what and how one eats” and social dynamics involved in eating (p. 516). After establishing macro influences on eating, students examined associated body functions and structures that support eating, including the digestive, gustatory, olfactory, oral motor, musculoskeletal, and neurologic systems. Students further examined how body functions and structures varied in response to “different eating situations” (p. 516).

**Teaching occupation: Challenges and related strategies.** One challenge related to teaching the dynamics of occupation was alluded to in the above examples of eating; it is possible to teach procedural aspects of occupation divorced from why occupation works as an agent of health. Consider another example from another common topic in occupational therapy education: how to conduct in-depth analyses of specific occupations. Students can learn the procedures of occupational analysis in isolation from why occupational analysis is a preeminent skill in occupational therapy. The SCIL-OT Model reminds educators to relate learning to the dynamics of occupation. Learning occupational analysis in direct relation to the dynamics of occupation can give students



the ultimate rationale for why they analyze and adapt specific occupations, beyond the rationale “to improve clients’ performance and engagement.” The occupations they analyze and adapt interconnect with a repertoire of occupation by which clients meet survival, psychological, and physical needs important to health and well-being. Consequently, such activities serve as levers, or mechanisms, for impacting health and well-being (Matuska & Christiansen, 2008). Knowing why they are learning occupational analysis, students become empowered to represent occupational therapy’s distinct perspective and value as they address clients’ most basic skills. They develop literacy in occupation as humans’ “primary health mechanism” (Wilcock & Hocking, 2015, p.89).

A second challenge pertains to erroneous assumptions educators are at risk of making about students’ existing knowledge of the dynamics of occupation. Owing in part to our many years in practice, education, and research, educators may mistakenly presume that connections among the specific occupations that we teach and the dynamics of occupation in health and well-being are self-evident to students. If we make such presumptions, however, we can underestimate how obscure the connections remain for students. Accordingly, the SCIL-OT Model guides educators and faculty groups to (a) identify specific occupations that appear in courses, and (b) articulate clearly and substantively how each specific occupation may relate to the dynamics of occupation.

A third challenge pertains to the breadth of occupation. Educators may assume that teaching the dynamics of occupation involves re-teaching content students learned in undergraduate or pre-requisites courses on, say, neuroanatomy, anthropology, political science, psychology, or sociology. While students may draw upon such prior knowledge, applying it to occupation is new to them. Accordingly, and as guided by the SCIL-OT Model, educators do not reteach prior content. Rather, educators teach the dynamics of occupation by helping students see occupation as something that arises from complex personal and macro processes, which together may profoundly influence a person’s health.

### **Second Element: Topics**

*Guiding Principle 2. The Topics We Teach, Although Important and Necessary, Are Not Distinctive to Occupational Therapy and Lack a Cohesive Logic*

The second element of the SCIL-OT Model encompasses the many important and necessary topics that educators teach. *Topics* are defined as the explicit practice-related skills, concepts, facts, theories, attitudes, or dispositions that educators teach and students apply on a given day (see Figure 1). This element also includes a program’s curricular threads, themes, or pillars such as evidence-based practice, client-centered practice, or ethical practice. At the course level, topics are often represented in weekly schedules on syllabi; for example, splinting and splint-making skills, a particular conceptual practice model, transfers, musculoskeletal structures of the hand, or needs assessment with a community agency. Topics are also reflected in instructional materials and what educators explain and demonstrate to students.

The topics that occupational therapy students are required to learn are seemingly endless. Moreover, these seemingly endless topics are not the equivalent of nor substitutes for the core subject of occupation. Distinguishing the core subject of occupation from topics consequently allows us to see the nature of the topics we teach in three ways.

*One, the topics we teach are generally not profession-specific.* In other words, and though exceptions exist, the bulk of topics in occupational therapy curricula are, on some level, not unique to occupational therapy. For example, students across diverse health professions learn about client-centered and evidence-based practices, activity analysis, a systems view of humans and their environments, and some configuration of anatomy, neuroscience, physiology, and psychology.

*Two, topics are context-specific.* That is, practice settings, geographical locations, educational institutions, and local, national, and international accreditation requirements, among other contextual factors, influence the topics we teach. Topics considered important in one particular practice setting, region of a country, or country in the world will be different from those considered important elsewhere. Contextually valued topics often dictate what is included and omitted in educational programs. For example, students at one program may spend weeks learning the topic of the Model of Human Occupation (MOHO; Taylor, 2017), while students at another program may never be exposed to MOHO. One program may prioritize knowledge and skills related to driving while another may have only a single lecture on driving.

*Three, topics vary by educator.* Educators tend to teach what they have valued in their own learning and research (Lattuca & Stark, 2011). Some educators may have had a positive learning experience with cadaver anatomy and thus believe that all students need to learn that topic to the same degree and in the same format as they had. Other educators may have had “an aha” experience related to emotional intelligence and thus seek avenues for incorporating this topic into the curriculum. A researcher testing interventions based in cognitive behavioral therapy may seek ways to include this topic in their course.

**Teaching topics: Challenges and related strategies.** Teaching topics is indispensable. However, their above-described nature clarifies that topics, by themselves, do not hold together in a cohesive professional logic. Owing to this lack of a coherent logic, students are unlikely to automatically ‘see’ or grasp meaningful links to occupation, especially when topics are taught in a stand-alone fashion apart from occupation. As Elder and Paul (1994) described, teaching content in a stand-alone fashion can leave students with a collection of unrelated bits of information that they can neither assemble nor apply in profession-specific ways.

Educators are consequently challenged to teach topics in ways that not only do not occlude occupation from students’ views, but also make it impossible to ignore. Related to this challenge, the SCIL-OT Model establishes that occupational therapy’s uniqueness lies in its core subject of occupation and, as discussed later in this paper,

emphasizes connection-making with occupation. Hence, when educators explicitly connect topics with occupation, students are most apt to learn the distinct value of occupational therapy. Learning experiences whereby students repeatedly, thoughtfully, and precisely draw such connections also best prepare them to deliver that distinct value as practitioners.

A related challenge pertains to the sheer volume of topics that educators presume that they must teach and students must know. Indeed, educators sometimes start curriculum and instructional design by asking, “What do students need to know?” Yet beginning with this question is critiqued for its reliance on a content paradigm (Fink, 2013). Whether intentionally or not, educators employ a content paradigm when they (a) design learning by first listing and arranging topics (content) that students must learn and (b) then produce courses and curricula that are over-stuffed with topics. Such ‘over-stuffing’ occludes not only the core subject of occupation from students’ views, but also how particular topics relate to occupation. Rather than ‘over-stuffing’ with content, therefore, the SCIL-OT Model prioritizes connection-making of topics with occupation.

### **Third Element: The Knowledge Community**

*Principle 3. As Members of a Large Knowledge Community, Educators and Students Together Learn and Develop Knowledge of Occupation and Related Topics*

Knowledge and professions are social in nature; they are products of experience, dialogue, inquiry, and discovery that have occurred through social processes over time (Abbott, 2014). The SCIL-OT Model highlights the social nature of knowledge and professions by recognizing the *knowledge community* as its third element (see Figure 1). Members of the knowledge community can include anyone within or outside the profession who has insights, whether through personal, practice, research, or other experiences, that illuminate the core subject of occupation and relevant topics. Among many others, members could thus include educators, researchers, authors, interdisciplinary colleagues, clients and other persons in the client’s constellation, and students. Using the SCIL-OT Model to guide curriculum and instructional design, educators intentionally create opportunities for students to co-construct knowledge with others. These opportunities can be direct such as co-constructing knowledge with their student peers in the classroom or with clients in the community. These opportunities can also be indirect such as co-constructing knowledge with authors they read or video cases they watch.

**The knowledge community: Challenges and related strategies.** A common challenge related to the model’s third element is that incoming students are often unaware that they have just joined a particular knowledge community, let alone that they are expected to be active constructors of knowledge along with other members of that community. To help students realize their new status as community members who bear responsibility for co-constructing knowledge, we, as educators, often design curricula and courses that engage students in a process of professional socialization. The SCIL-OT Model urges us to address professional socialization in some specific and explicit ways. For example, we can intentionally design opportunities whereby students

connect and collaborate with other members of the knowledge community including not only us as their educators, but also their peers, clients, own families and communities, interprofessional colleagues, organizations, and occupational therapy practitioners and researchers. Learning activities aimed at such connections and collaborations might include facilitating meetings between students and authors of their textbooks and scholarly articles, having students debate professional issues (formally and informally), or requiring students to learn about the lived experiences of clients and generate implications for practice. While programs may already use such activities, the SCIL-OT Model underscores the need to take these experiences one-step further: students need to be able to describe explicitly the ways in which they are actively consuming and co-constructing knowledge of occupation through these collaborations.

#### **Element Four: The Learning Context**

*Guiding Principle 4. The Learning Context Shapes All Elements of the SCIL-OT Model*

*Learning context* refers to external and internal influences on curricula, teaching and learning (see Figure 1). Among many others, these influences include new knowledge, trends and issues in the profession; the type and mission of the educational institution; the geographical and cultural location, physical environment, available resources, vision, and mission of the program; the backgrounds of faculty; the knowledge and skills that faculty value and the learning, teaching, and assessment approaches that they use; and the characteristics and previous experiences of students.

When guided by the SCIL-OT Model, therefore, educators seek to recognize relevant contextual influences on how occupation is understood or what occupations are deemed most relevant, what topics are deemed most important, who comprises the knowledge community, and what teaching methods are most valued. Educators' careful attention to and explication of contextual influences can, in turn, help students better understand why students in other programs may have quite different educational experiences. For example, students' experiences in a program that is committed to problem-based learning will be influenced by how educators design cases, train tutors, and debrief students on what new understandings they have developed or still need to develop. Students' experiences in a program with resources for standardized patients will be influenced by how actors are trained, what students are asked to do with actors, and the feedback that actors provide to students. Students' experiences in a school or division with a strong interprofessional education initiative will involve much articulation of occupational therapy's distinct value and application to specific client situations.

**The learning context: Challenges and related strategies.** Given the enormous array of possible contextual influences on learning, a prevalent challenge is discerning which influences educators ought to assess in order to illuminate context-related constraints and opportunities for curriculum and instructional design. Related to this challenge, Fink (2013) and Lattuca and Stark (2011) recommended assessing trends in the profession and market place, institutional type and priorities, program and faculty characteristics, learner characteristics, the overall curriculum sequence, and learning resources, among other influences. These areas are also recognized as important in the SCIL-OT Model.

However, the SCIL-OT Model further specifies unique features to consider about the learning context. Namely, educators are urged to assess the following features: (a) how the collective “occupational profile” of students who attend a particular program ought to influence teaching and learning; (b) if occupations that are historically or currently characteristic of a particular campus, community, or region can be tapped for learning about the dynamics of occupation; (c) if occupational needs are already addressed through existing programs, which may offer learning opportunities for students to hone an occupational perspective; (d) what ongoing occupational needs of a campus, community, and region exist and how educators might provide students with opportunities to learn about and address those needs; and (e) the extent to which faculty are well-versed on an occupational view of humans and the dynamics of occupation, and related opportunities for faculty development.

### **Element Five: The Connecting Lines**

*Guiding Principle 5. Teaching, Learning and Assessment Occur “On the Lines”*

Element five of the SCIL-OT Model is comprised of the lines that interconnect all the other elements (see Figure 1). Designing curricula and instruction “on-the-lines” is the principle that brings subject-centered integrative learning alive. *Learning on-the-lines* means that we design learning to force students’ attention from isolated topics, experiences, and interactions to five *connections* to occupation:

1. Specific occupations to the dynamics of occupation;
2. Topics to the core subject of occupation;
3. Various topics to one another;
4. Students’ experiences to the core subject of occupation; and
5. Students to members of the knowledge community in their given context.

To make these connections, the SCIL-OT Model endorses a plethora of common teaching and assessment methods. For example, educators commonly set up active learning experiences in the classroom and community; they demonstrate, model, lecture, facilitate discussion, devise electronic materials, ask questions, give feedback, and provide physical and visual prompts. Educators also include interprofessional experiences, team- and problem-based cases, standardized patient experiences, or other modes of simulation. And educators ask students to complete written examinations, write treatment plans, present their work with clients, and complete practical examinations. Guided by the SCIL-OT Model, educators would continue to employ any or all of these methods, but with this redirection: educators aim all instructional design, methods, and learning outcomes directly on students’ connection-making with respect to the five connections.

**Connections of topics to the core subject of occupation.** To ensure a deep knowledge of occupation and the ability to use it therapeutically, the SCIL-OT Model reminds educators that students need to relate all topics not only to specific occupations, but also to why and how those occupations work as mechanisms of health and well-being. Instead of teaching in a stand-alone fashion, therefore, we teach the relationships of topics to specific occupations and the dynamics of occupation.

Topics relate to occupation in several ways. For instance, a topic may a) develop through occupation (e.g. skills and capacities); b) thwart occupation (e.g. poverty or disability); c) enable occupation directly without therapist involvement (e.g. humans' need and drive for occupation); d) be a tool that therapists use to enable occupation (e.g. client-centered practice, therapeutic use of self); e) provide a way of conceptualizing occupation and its relation to health (e.g. MOHO); f) be a facet of occupation (e.g. meaning); and g) support therapists in enabling occupation (e.g. knowledge of health disparities, leadership).

We may teach such relationships using problem-based learning, lecture, discussion, service learning, or some other method. Regardless of the method, however, we target students' ability to connect topics to occupation; that is, we target and assess their *on-the-line knowledge*. We also assess on-the-line knowledge by designing exams, essays, intervention plans, documentation assignments, or other assessments accordingly. In other words, we evaluate students' proficiencies in not only the particular topic being assessed, but also the strength and clarity of the connections that students are able to draw to the core of the profession.

Consider anatomy or kinesiology; teaching on-the-lines means that beyond learning movement structures and functions, students learn to connect anatomical structures and functions to specific occupations. Further, students learn to connect movement—what movement is used, its extent and intensity—to transactions of environments, intentions, biological conditions such as hunger, demands of the occupation, meaning, volition, and cognition, among other factors. Students learn body functions and structures in connection to mechanisms that make occupation an agent of health.

When guided by the SCIL-OT Model, educators would therefore ask these questions pertaining to connections of topics to the core subject of occupation:

- What are the relationships between each topic in this course and specific occupations and the dynamics of occupation?
- How will my instructional design help students make the connections?
- How will my assessment strategies ensure students can make the connections?

**Connections among various topics.** Occupational therapy educators are excellent at designing activities that require students to string together a number of topics. Activities related to the occupational therapy process are prime examples. We commonly ask students to interview people about their occupational histories, the occupational issues they are facing, and their perceived strengths and challenges. We then commonly ask students to observe an occupation, assess and document occupational strengths and challenges, draft goals that address the challenges, choose and plan an approach to intervention appropriate for addressing the goals, and sometimes implement the approach. Additionally, we often require students to connect topics to supporting research or connect a theoretical concept to its application in practice. When we assign activities such as these, we are requiring students to interconnect knowledge of occupation, the occupational therapy process, interpersonal and communication skills, interviewing, and documentation, among other topics.

However, we less commonly ask students to identify explicitly what topics they had to integrate to complete an activity (Hooper, Krishnagiri, Price, Taff, & Bilics, 2018). In the absence of such questions, students may not develop a metacognitive awareness of how they assemble and draw upon distinct knowledge domains to complete learning activities. Consequently, the broader conceptual understandings necessary for completing the learning activity remain veiled from the students' view, leaving occluded how they assemble and construct knowledge for practice.

Thus, integrating multiple topics in a learning activity requires one additional step: asking students to identify the topics they combined and explain how each informed their performance of the activity. For example, when planning an intervention for a client, a small group of students might identify all the topics they assembled to create and implement the plan. These students may explain that they began with interviewing skills to elicit knowledge of the client's occupational goals and discovered the client's desire and need to cook a simple meal. They may further explain how they linked this knowledge to knowledge of roles and role fulfillment to highlight the occupation's importance to the client. Given the importance, they used observation skills and expertise in occupation analysis to determine the fit between the client's capacities and a typical kitchen environment and a cooking task they typically perform. The students might then articulate that they combined their observation with additional motor assessments based on what they observed about the client's capacities for cooking. They might identify that they linked occupation analysis knowledge and skills to knowledge of object characteristics in order to select tools and materials for the client that were not too heavy. They might piece together knowledge of the person-environment-occupation alignment to position the tools and materials, being mindful of reduced range of motion they observed. Throughout, they might draw upon knowledge of client-centered care to engage the client in collaborative problem solving.

When guided by the SCIL-OT Model, therefore, educators would ask these questions pertaining to connections among topics:

- How do the topics in my course connect to each other?
- How can I design instruction to have students make those connections?
- Do the learning activities and assessments I use hold students accountable for connecting topics to each other?
- Have I asked students to identify the topics they had to assemble or draw upon to complete the learning activity or assessment?

### **Connections of students' own life experiences to the dynamics of occupation.**

Occupational therapy educators are also masters at teaching on-the-line between students and occupation. Using a common assignment across occupational therapy programs, we ask students to complete time use diaries and analyze the diaries for types, patterns, and routines of occupation. We ask them to analyze an occupation and determine the role the occupation has played in shaping their development, identities, capacities, meaning system, and time use. We further require students to imagine what the loss of a favored occupation might mean to their sense of self, habits, routines, and capacities. Some educators require students to learn a new occupation and discuss

what the occupation brought to their lives and analyze the demands of the new occupation. In these and similar learning activities, we are asking students to connect with occupation on a personal level. A personal connection with the subject of occupation shifts the subject from “out there” to something students can relate to and see as relevant to themselves and consequently to their clients.

We could, however, ask students to take their analyses one step further to deepen their knowledge of the mechanisms by which occupation influences health. That is, sometimes students complete these insightful analyses of their occupational lives and that is the end of the activity. However, they must also grasp the macro occupation-health dynamics illustrated in their analysis.

When guided by the SCIL-OT Model, therefore, educators would ask these questions pertaining to connections of students’ experiences to the dynamics of occupation:

- Is there an opportunity in my course for students to relate personally to the concept of occupation?
- In asking students to examine occupation in their own lives, have I asked them to link occupation to the macro influences that made such occupations possible in their lives? Or that disrupted occupation from their lives at some point?
- Have I asked students to trace the impact of occupation all the way to their health, well-being, development and retention of capacities?
- Have I asked students to summarize why occupation is occupational therapy’s central concern based on their personal occupational experiences?

**Connections with members of the knowledge community in given learning contexts.** Occupational therapy educators commonly teach on-the-lines between the student and other members of the knowledge community, though we seldom frame it this way. For example, when we ask students to read scholarly literature in the field, we are in essence teaching on-the-line between students and other community members, namely the authors of the readings. When we ask students to interview people, connect with guest lecturers, or engage in discussion with peers, we are teaching on-the-line between students and other members of the knowledge community. That is, we are requiring students to connect with, inquire about, critically evaluate, and take in the personal experiences and scholarship of others, and those connections support them in constructing knowledge about occupation and related topics. What we omit, however, is an explicit expectation that students see and name their own knowledge making process through their engagements with others. For example, students typically are not aware of how they are taking knowledge from members of the community and assembling it into a knowledge base for themselves. They frequently do not appreciate how they actively change their own thinking in light of what they glean from others. They do not realize how they revise the meaning of their former experiences and learning based on new experience and knowledge. Teaching on-the-lines among the knowledge community creates opportunities for students to see and experience themselves as not only receiving knowledge but also as co-creating knowledge with this community. We design learning so that students see the active knowledge creation they do in response to their interactions with readings (authors), guests, interviewees, and others.



Guided by the SCIL-OT Model, therefore, educators would ask these questions pertaining to connections with knowledge communities and learning contexts:

- What members of the knowledge community are relevant to my course?
- How will students connect with those identified members?
- Toward what learning outcomes will students' connections contribute?
- How will students explain the knowledge they created in collaboration with members of the knowledge community?

### THE SCIL-OT MODEL: THEORETICAL FOUNDATIONS

As noted, one premise of the SCIL-OT Model is derived from the sociology of professions. That premise is that disciplines and professions form their defining areas of inquiry, service, and education around distinctive core subjects. The model further draws upon three learning theories from education that are grounded in research of how people learn. Learning theories in education are commonly a set of related concepts about learning, methods for applying those concepts, plus outcomes of learning that we seek for students. The three learning theories from which SCIL-OT Model draws heavily are idea-based learning, integrative learning, and transformative learning.

Basic tenets of the theory and method of *idea-based learning* are that (a) students are confused by the sheer volume of what they must learn and, therefore, that (b) students' learning is facilitated by linking individual topics with one central organizing idea or a few big ideas. Therefore, idea-based learning involves using a field's biggest ideas to help organize and give structure and coherence to learning (Hansen, 2011; Wiggins & McTighe, 2011). Seminal works in the education literature support that using big ideas thusly facilitates important learning outcomes (e.g. Bain, 2004; Bransford, Brown, & Cocking, 2018; Bruner, 2009; Paul & Elder, 2013). For instance, according to the authors of *How People Learn* (Bransford et al., 2016), competence as a learning outcome depends on students being able to understand topics in context of a larger conceptual framework, namely, the core subject and big ideas of the field. In contrast, if students learn individual topics in a manner that is detached from a larger conceptual framework, then they may succeed on exams yet remain unequipped to apply the logic of their discipline or profession in practice.

As occupational therapy educators, we might regard calls for repeated connection-making with occupation, or teaching-on-the-lines as it is called in the SCIL-OT Model, as overkill. Yet studies of professional education have found that teaching content in a stand-alone fashion prevails and connection making is rare (e.g. Benner, 2012; Cook et al., 2010; Sheppard, Macatangay, Colby, & Sullivan, 2009). Therefore, the SCIL-OT Model emphasizes learning in direct connection to the field's core idea and logic. The logic of occupational therapy is seen to rest in students' deep grasp of how topics illuminate aspects of occupation on the one hand, and how the core idea of occupation modifies what is important to know about specific topics on the other.

It follows from this emphasis on connection-making that the SCIL-OT Model is also influenced by the theory and method of *integrative learning*. Integrative learning is promoted on the basis that solving complex problems requires the ability to connect

seemingly disparate domains of knowledge and practice (Hooper et al., 2014; Huber & Hutchings, 2004; Palmer, Zajonc, & Scribner, 2010). In the health professions, integrative learning hones students' abilities to connect multiple domains of knowledge and experience with the complexities of service delivery and the multifaceted needs of their clients and patients.

In occupational therapy more specifically, integrative learning hones students' abilities to connect "the perspective and habits of mind of the profession, abstract knowledge, responsible application of concrete skills, the subjective experiences and objective needs of service recipients, germane evidence, professional reasoning, relevant features of the practice situation and the identity of the practitioner" (Hooper et al., 2014, p. 470). The theory and method of integrative learning can help occupational therapy students learn how to continuously piece together domains of knowledge such as these. Such integration is consistent with the demands of practice. Continuously in practice occupational therapy practitioners must make a myriad of connections that piece together their knowledge of guiding theory and evidence. For instance, practitioners must interconnect the occupational performance issues, goals, personal contexts, and environments of their clients; they must also situate these factors and considerations, among still others, within the constraints and opportunities of their practice settings. But to be effective, integrative learning requires instructors and models that make connection-making an explicit goal (Gale, 2006). The SCIL-OT Model is thus guided by the principle that teaching and learning occur on-the-lines. As a result, the model prioritizes connection-making in its recommended approaches not only to assessing student knowledge, but also to designing curricula, courses, and daily classroom processes.

The integration of multiple domains of knowledge and experience in new ways in response to particular practice situations also reflects a particular view of knowledge. That is, it would be next to impossible for students to draw their own connections across elements of the SCIL-OT Model if they viewed knowledge as absolute and fixed. Rather than absolute and fixed, connection-making presupposes a view of knowledge as fluid, flexible, and constructed in context.

**Transformative learning** is consequently a third theory-based method that supports and influences the SCIL-OT Model. Transformative learning is the process by which students' assumptions about knowledge, and themselves in relation to knowledge, transform (Magolda & King, 2012). Students gradually move from seeing knowledge as certain and readily available from experts, or as relative and subjective, to seeing knowledge as contextual. When students become able to see knowledge as contextual, they grasp that knowledge is tentative and fluid in nature because it is always being constructed based on sound judgment and evidence. Simultaneously, students gradually move from seeing themselves as recipients of knowledge to seeing themselves as active co-creators and evaluators of knowledge within the accepted inquiry norms of their professional community.

Doing the connection-making and assembly work associated with integrative learning requires that students also come to view knowledge as flexible and to view themselves as crafters of knowledge. By encouraging educators to teach and students to learn “on-the-lines,” the SCIL-OT Model provides multiple opportunities for students’ views of knowledge to evolve from absolute and handed down by authorities, to contextual and dynamically emergent from knowledge communities of which they are fellow members and knowledge-crafters. Ultimately as guided by the model, we as educators design learning that requires students to craft connections among multiple elements. In so doing, we create learning contexts that press students toward views of knowledge necessary for addressing the complexities of practice.

### **SUMMARY AND CONCLUSION**

The SCIL-OT Model is based on the principle that the big ideas of occupational therapy are also the big ideas that occupational therapy education must foreground. The core subject of occupation informs these big ideas; namely that (a) humans meet needs for survival and thriving through occupations that are coordinated with other occupations, and (b) occupations manifest deeper mechanisms affecting health, which include sustaining transactions among biological needs, contexts, time, habits and culture; in other words, the dynamics of occupation. The model further recognizes that teaching topics is vital. Yet teaching topic and skills distinct from these big ideas can limit students’ eventual abilities to apply the logic of their profession in practice. In addition, the model is guided by learning principles pertaining to students’ status as members and active knowledge-creators in learning communities and to the importance of situating curricula and its concept of occupation in local contexts and communities. Perhaps most importantly, the SCIL-OT Model encourages educators to teach and students to learn how to draw myriad connections among the profession’s core subject of occupation and disparate other topics and domains of knowledge that practices of occupational therapy demand.

Nearly two decades ago, Whiteford and Wilcock (2001) identified these shortfalls in occupational therapy education:

...in the minds of students who have no clear notion of why they are learning anatomy, physiology or neuroscience and how these subjects contribute to the occupational therapy profession’s particular view of humans, such subjects can become ends in themselves. This is particularly compounded when such topics...are delivered without an appropriate orientation as to why, and to what extent, occupational therapists need to understand the material covered. When this is the case, it is not surprising that students of occupational therapy struggle to integrate such knowledge into an understanding of occupation and applied occupational therapy concepts (p. 82).

The struggles of occupational therapy students to integrate their knowledge of the profession’s core subject of occupation with other topics are particularly concerning. *Integration* is, after all, an essential quality of knowledge in occupational therapy (Hooper & Wood, 2018). Moreover, multiple health professions have identified insufficiencies resulting from teaching new topics in stand-alone fashions. To address

these longstanding insufficiencies, the professions of medicine, nursing, and engineering have also initiated reforms toward more integrative subject-centered learning. Owing to its grounding in occupation and emphasis on connection-making across multiple knowledge domains, the SCIL-OT Model provides avenues by which educators in occupational therapy programs worldwide can likewise move toward and more fully embrace subject-centered integrative learning.

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