

Bottom-Up or Top-Down Evaluation: Is One Better Than the Other?

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The *Occupational Therapy Practice Framework: Domain and Process* (Framework; American Occupational Therapy Association [AOTA], 2002) specifies that all occupational therapy evaluation must begin with an occupational therapy profile and an analysis of occupational performance (AOTA, 2002). This document requires that a top-down approach to evaluation be used wherein the therapist always begins by examining the client's occupational performance, grounded in a client-centered approach. In this paper, we question the soundness of the AOTA official position that occupational therapy evaluation should always be based on a top-down approach. After surveying the evolution of each approach and examining their relative strengths and ability to document effectiveness, we suggest that clients' needs may be better served by a therapist determining which evaluation approach would be most appropriate to the situation through the use of a screening tool.

Three Approaches To Evaluation and Treatment

"A top-down assessment . . . starts with inquiry into role competency and meaningfulness . . . [and] further determines which

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particular tasks define each of the roles . . . whether he or she can now do those tasks, and probable reasons for an inability to do so" (Trombly, 1993, p. 253). In the top-down approach, the foundational factors (performance skills, performance patterns, context, activity demands, and client factors) are considered later.

The bottom-up approach considers foundational factors first to obtain an understanding of the client's limitations, real disabilities, and strengths. "A bottom-up approach to assessment and treatment focuses on the deficits of components of function, such as strength, range of motion, balance, and so on, which are believed to be prerequisites to successful occupational performance or functioning" (Trombly, 1993, p. 253). An assumption inherent in the bottom-up approach is that acquisition or re-acquisition of motor, cognitive, and psychological skills will ultimately result in successful performance of activities of daily living.

Although the focus of this paper is on the top-down versus bottom-up approach, it should be noted that some therapists use a third approach to evaluation by assessing the client's context first. The initial focus of evaluation is the examination of the person relative to his or her disability status, lifestyle, age, and stage of life as well as setting and environment (Hinojosa & Kramer, 1998; Ideishi, 2003).

Historical Perspective

In the early 19th century, the moral treatment movement was noted in several mental hospitals, influenced in part, by religious

and political beliefs at the time. This movement, which encouraged patients to engage in activities, is credited as the philosophical roots of occupational therapy (Bockhoven, 1971). Adolph Meyer built on those principles with value placed on time, work, and activities that promote self-fulfillment (Christiansen & Baum, 1997). Occupations and later "habit training" embodied the early philosophy of occupational therapy (Mosey, 1986). The popular societal beliefs regarding the indelible connection between a person's value and his or her work as well as the danger of "idle hands" likely supported or even shaped the early philosophy of occupational therapy (Mosey, 1986, p. 25). This era can be described as using a modified top-down approach, where intervention focused primarily on occupations, with remediation of performance skills being an occasional, but welcome by-product.

In the early 1900s, medicine focused on treating acute conditions. After World War I, immunological and surgical practices advanced; however, the Depression overshadowed serious growth in the field of rehabilitation (Mosey, 1986). Injuries suffered during World War II, followed by the successful use of antibiotics presented a need and supportive climate for the rehabilitative professions. Intervention at this time focused on physical components, as that was what the medical team valued. Many occupational therapists embraced the reductionist medical model and to varying degrees abandoned the holistic approach of occupations and activities (Christiansen & Baum, 1997; Mosey, 1986). This series of events ushered in the use of a bottom-up approach.

In the 1960s, in a national environment of social and political change during which many traditional paradigms were challenged, some occupational therapists began to question the appropriateness of the medical model. As therapists sought to define the domain of concern, different philosophical camps emerged (Mosey, 1986). The use of frames of reference to support treatment was prevalent (e.g., Ayres, 1972; Ayres & Robbins, 1979; King, 1974; Mosey, 1970, 1981) along with pragmatic problem solving approaches (Schell & Cervero, 1993)¹ very much embodying a bottom-up approach. In the 1970s, Mary Reilly and Elizabeth Yerxa both argued that the profession needed to distance itself from dependency on the medical model and began to promote occupations as the primary focus of intervention (Reilly, 1971; Yerxa, 1967). They proposed the development of a comprehensive theory for occupational therapy wherein there would be no need to rely on theories from other disciplines, unlike the frame of reference model, thereby providing the ultimate professional identity. This focus on occupations embodies the top-down approach. During the past decade, the development of occupational science has created an increased emphasis of occupations as the primary concern of occupational therapy and the top-down approach as the “best” method of evaluation.

Changes in World Health Organization (WHO) Classifications—Influences on Uniform Terminology

In 1980, the WHO published the *International Classification of Impairments, Disabilities, and Handicaps* (ICIDH) as its first classification of disability to serve as a

¹An article entitled, “Assistive Devices for Activities of Daily Living” by Helen Hopkins, published in a 1960 *American Journal of Occupational Therapy* exemplifies the use of pragmatic reasoning. In it, the author describes the process by which assistive devices are selected and fabricated for individuals with functional limitations, using knowledge about a client’s abilities and difficulties, along with the types and costs of materials available.

common language for health professionals. The disease-impairment-disability-handicap model was of bottom-up orientation and an important beginning in the conceptualization of disability on a global scale.

Significant revisions were made to the ICIDH in 2001 to encompass a more holistic approach to health and wellness as well as to include context as a relevant factor to function and disability. The resulting *International Classification of Functioning, Disability, and Health* (ICF), much like the ICIDH, aims to maintain the common language for describing issues relevant to health and allow for worldwide comparison of data and comprehensive coding (WHO, 2001). This version’s paradigm of health, wellness, and context, embodies popular global concerns about function and disability while still retaining a bottom-up orientation.

Similar trends are mirrored by revisions in the American Occupational Therapy Association’s Uniform Terminology documents, specifically editions two through four. The first version, the “Occupational Therapy Product Output Reporting System and Uniform Terminology for Reporting Occupational Therapy Services” document was published in 1979 to establish a uniform system for reporting occupational therapy services in hospitals as was mandated by the 1977 Medicare-Medicaid Anti-Fraud and Abuse Amendments (AOTA, 1989).

A second edition of the Uniform Terminology was published in 1989 intent on defining occupational performance areas and components, and not replacing its first edition (AOTA, 1989). Occupational performance areas and components are organized laterally, with the areas ordered as “I” and the components ordered as “II.” The only description of their relationship is, “Performance components refer to the functional abilities required for occupational performance” (AOTA, 1989, p. 812). The lack of a hierarchical organization and the very ordering of the two concepts in the above statement leave much leeway for the support of a bottom-up approach, which was indeed popular at the time.

The third edition of the Uniform Terminology, published by the American

Occupational Therapy Association in 1994, was intended to replace its predecessor. An important initiative in this version was the introduction of performance contexts. The three resulting categories, performance areas, performance components, and performance contexts, are organized laterally, not hierarchically, suggesting equal importance among them and potential for incorporating a bottom-up approach. Given examples are resolved using a bottom-up approach. However, the following statement, “This document is not meant to limit those in the field, formulating theories or frames of reference, who may wish to combine or refine particular constructs. It is also not meant to limit those who would like to conceptualize the profession’s domain of concern in a different manner” (AOTA, 1994, p. 1) reflects the presence of new ideas and constructs for problem analysis. This was indeed the case as occupation based models had been developed but not accepted as a standard.

A dramatic change in approach is evident the Framework (AOTA, 2002). Described as filling a “need to reaffirm and clarify what occupational therapy practice is all about” (Youngstrom, 2002, p. 607), this newest version of a uniform terminology asserts occupation-based practice at the core of assessment and intervention. Concepts such as performance patterns and activity demands are introduced (AOTA, 2002), mirroring popular, top-down models. Labels are better aligned with terms in the ICF.

The evolution of the occupational therapy uniform terminology has a formative impact on occupational therapy programs and their students. These defining documents are presented as the domain of concern of the profession. The most recent version will ensure the proliferation of occupation-based concepts, even in schools with a strong bottom-up tradition.

Supporting Evidence—Which Approach Works?

Therapists evaluate to obtain data necessary for understanding the client and for planning appropriate interventions (Hinojosa & Kramer, 1998). The way that a therapist organizes and conducts an evaluation will

determine the interventions the therapist selects. Thus, the focus of an evaluation determines the goals and outcome of treatment. *Good outcomes* indicate that the intervention facilitated goal accomplishment. Ultimately, client satisfaction with the level of functional performance, engagement in desired occupations, and objective determination of safety while doing so, is of paramount importance and should be included in the goals of therapy. These goals are compatible with both the top-down and bottom-up approach to evaluation.

Some therapists argue that the top-down approach and the focus on the client's occupation naturally leads to positive client satisfaction outcomes. Even if true, is client satisfaction adequate to support the efficacy of an intervention? While client satisfaction is highly important, it may reflect spurious factors, such as the affability of the treating therapist. Moreover, client satisfaction is subjective wherein integral points, such as safety, may not have been considered. Thus, client satisfaction alone is important but not adequate for establishing the efficacy of an intervention. When examining top-down occupation-based goals, we are challenged due to the dearth of valid and reliable tools to measure occupations. Tackling the philosophical question as to whether occupations can really be measured, Law writes that occupations can be assessed in a variety of ways, namely through informal interviews, a narrative or life history, metaphor, semistructured interviews, and health or functional status questionnaires (1998). Many of the above methods are highly subjective and not standardized. The *Canadian Occupational Performance Measure* (COPM) (Law et al., 1998) is a semistructured interview that has demonstrated strong test-retest reliability and responsiveness to change (Law, 1998), but is lengthy to administer. The *Self-Identified Goals Assessment* (SIGA) (Melville, Baltic, Bettcher, & Nelson, 2002) designed for use in subacute rehabilitation in nursing homes has yet to be standardized. The difficulty in effectively and efficiently assessing changes that result from therapeutic interventions undermines the validity of what we do. A direct relationship between intervention and result needs to be demonstrated to

rationalize continued reimbursement for our services.

When guided by a bottom-up approach, a therapist can measure changes in performance skills with confidence by using a standardized assessment, operating under the assumption that skills will generalize in to functional gains. Numerous assessment tools have been developed and standardized to measure performance skills. Two examples are the use of a dynamometer to assess grip strength and the Semmes-Weinstein monofilaments to assess pressure sensitivity (Jones, 1989). The assured reliability and validity of those tools enables practitioners to measure change in performance skills as they relate to therapeutic intervention. While component based assessments can provide valid information about specific changes in client's performance on specific tasks, they do not provide evidence about whether the person can perform occupations and whether the interventions relate to the person's life.

To better determine the impact approach has on successful outcomes, an experimental design with a random sample, stratified for different diagnoses, is indicated, using approach as an independent variable and one standardized assessment tool for measurement. Without such a comprehensive design, comparison of the bottom-up and top-down approaches is rough at best.

Inherent Challenges in Each Approach

The resurgence of occupations as a primary focus of the profession is significant and positive. This very special and unique aspect of occupational therapy has taken a backseat for many years, much to our collective loss. However, top-down approaches centered in occupations do present some challenges if not limitations. Occupation-based practice does not address time-based priorities such as a burn, which requires immediate concentration on the injury even prior to assessment of occupations. In some cases, exclusive use of occupation-based practice can be detrimental to the client.

Assessment of occupation-based intervention still has room for growth.

Standardized, efficient tools are needed to accurately measure the effectiveness of interventions. In a description of occupation-based curriculum, Yerxa (1998) makes only one concession for the need of a balance between the study of occupations and medical knowledge. Does the top-down approach provide that balance? Moreover, is just a balance enough?

Foundational factors in the bottom-up approach keep the therapist grounded in the very intricacies of physical, psychological, and cognitive function. When a client is assessed using a bottom-up approach, the therapist's focus is in the detailing of the progress that is made. For example, subtle changes in edema would be measured, recorded, and addressed even if its very presence did not interfere with occupational performance. However, its timely control may very well have prevented future functional limitations. The risk in using a bottom-up approach lies in if and when the practitioner fails to connect the foundational factors to occupational performance.

Considering the Bigger Picture

Occupations were the prevalent assumptions during the inception of occupational therapy. The changing philosophical assumptions of leaders of the profession such as Reilly and Mosey have affected those of the profession. Finally, social change in the 1960s, when many prevalent paradigms were challenged, provided a fertile environment for philosophical innovation. These changes in philosophical assumptions, influenced as they were, have contributed to the alternating rise and fall of the bottom-up and top-down approaches.

Over the years and throughout the literature, the discourse regarding both approaches has included strong, differing opinions. A virtual chasm has resulted between the two schools of thought with the top-down proponents currently enjoying greater popularity supported by the Framework (AOTA, 2002). Despite individual preferences for one approach over the other, it is the ultimate goal of therapeutic intervention to encompass both poles of the component-function continuum, wherein, both the "top" and "bottom" of an individual's functional limitations are

	Bottom-Up Approach	Top-Down Approach
Models/Theories Incorporating Each Approach (The following include some examples of the given category. There are many other models not included)	<ul style="list-style-type: none"> • Frames of Reference (Mosey, 1970, 1986) • Sensory Integration (Ayres, 1972) • Neurodevelopmental (Bobath, 1979) • Movement Therapy (Brunnstrom, 1966, 1970) • Proprioceptive Neuromuscular Facilitation (PNF) (Voss, Ionta, & Myers, 1985) • Motor Relearning (Carr & Shepherd, 2003) 	<ul style="list-style-type: none"> • Occupational Science (Clark et al., 1991) • Model of Human Occupation (Kielhofner, 1997) • Occupational Behavior (Reilly, 1962) • Client-Centered Occupational Therapy (Law, 1998) • Activities Health Model (Cynkin & Robinson, 1990) • The Person-Environment-Occupational Performance Model (Christiansen & Baum, 1997) • Occupational Adaptation (Schkade & Schultz, 1992; Schultz & Schkade, 1992) • Task-Oriented Approach (Bass-Haugen & Mathiowetz, 2002) • Occupational Therapy Intervention Process Model (Fisher, 1998)
Unique Strengths	<ul style="list-style-type: none"> • Easily incorporated with all clients, even those: without insight, unable to articulate occupations, without family to do so, nor for whom the process of learning to express desired occupations would be meaningful (Law, 1998). • Compatible with the biomedical team philosophy (Law, 1998). • Appropriate for time sensitive physical disability, in which immediate and/or focused intervention is integral (i.e., fracture or burn). • Often directed by applied scientific inquiry, appropriate and ready for clinical use. 	<ul style="list-style-type: none"> • Is most synonymous with the roots of the profession. • Provides occupational therapists with knowledge of our supposed area of expertise—occupations so that we can best address them (Christiansen & Baum, 1997). • Focuses the occupational therapist on the holistic. • Identifies clients with occupational dysfunction, but not necessarily medical needs or disease, a category of clients often missed with other models (Rogers, 1982). • Engenders theoretical autonomy.
Limitations	<ul style="list-style-type: none"> • Frames of Reference utilize theory from other disciplines, never becoming fully independent and self-sufficient. 	<ul style="list-style-type: none"> • There have been difficulties noted in assessment and implementation of some models in this approach (Law, 1998). • Some models in this approach embody basic science—not readily applicable for use.

Figure 1. Comparison of bottom-up and top-down approach

reached and successfully achieved or at least addressed. Both have advantages that are critical for occupational therapy evaluation and intervention (see Figure 1).

In *Educating the Reflective Practitioner*, Schon (1987) describes how various disciplines set or frame problems that they encounter. For the purposes of this discussion, we have labeled and defined the concept of problem framing as a cognitive process by which a health care practitioner mentally structures the limitations experienced by a client, incurred by a functional difficulty or medical dilemma, into a workable configuration to facilitate appropriate intervention. We believe that differing opinions regarding the bottom-up and top-down approaches are essentially different modes of problem framing based on differing philosophical assumptions. The ongoing

discussion between the two schools of thought is a disagreement on how best to organize the dilemmas presented by a particular client(s) to plan a course of treatment to obtain the best results. Attaching a label to this concept facilitates its conceptualization by the general population of occupational therapists. Moreover, after experiencing the expressions of a sharp divide in the literature, it is our hope that uniting both approaches under a common label can soften the lines of demarcation, promote understanding, and lead to the development of a unified, integrated, and more effective approach.

Another element to appreciate is that occupational therapy embodies a profession of change tempered by constancy. Changes have occurred in the settings we work in, the tools we use, and the clients we treat.

The one constant throughout our collective evolution is the focus of occupational therapy: the goal that clients reenter society, whatever that may mean in a given decade or century. In the early years of occupational therapy the promotion of occupations and adaptive habits was reflective of the societal norms of that time period—the concept of “clean habits” (Mosey, 1986) and the arts and crafts movement. The answers to existential questions of what it means to be productive, spiritual, and fulfilled vary from one generation to the next; thereby changing the definition of successful, societal reentry from generation to generation and reflecting relevant social, political, and religious trends.

Occupational therapists are the *ultimate adaptors*; we have flourished as a profession because of our ability to incorporate

social change and assimilate the challenges presented in new client populations and treatment settings. Legitimate tools have been introduced and cast aside. Domain of concern has been defined and redefined. Philosophical assumptions have been reconfigured. As a result, the profession is alive and well. However, because occupational therapy has changed so much over the years, and because the profession manifests such a unique face to each population it serves, there is a general, ambiguous perception of what we do.

Occupational science and client-centered occupational therapy have made significant progress in promoting a professional identity. Yet, the broadness of these approaches may leave therapists hovering at the top sometimes without getting to the nitty-gritty at the bottom. They present a wonderful vision, albeit out of touch with the typical, day-to-day struggle of the occupational therapist to collaborate with clients using available supplies, within a designated amount of time, in the closest relevant context. Both approaches are needed to help our clients with the general and specific issues they present.

A Vision for the Future

At this stage of the profession's developmental history, integration is needed. Occupations and occupation-based practice, the present prevalent philosophy, is vital as an overarching mindset, but poor measurability, limited collective applicability, and negligibility in addressing time-limited priorities, make it inappropriate for exclusive use. Isolated use of a bottom-up approach is also inappropriate. Both approaches constitute trends that have contributed to our practice, but have also diminished it by asserting itself over the other. Each approach used in isolation is flawed. It is time that clients are not subjected to the changing climates of contemporary social philosophy, and instead are assessed to find out their greatest area of need, whether foundational, occupational, or contextual; in a truly "client-centered" fashion. Occupational therapy evaluation needs to begin with a screening. This initial screening examines health circumstance in which structures of the body or aspects of

the spirit face imminent harm and hindering future engagement in occupations if not addressed in the immediate present. This initial screening is not top-down, bottom-up or contextual, it is concerned with understanding the client. Based on the findings from this screening, the therapists can determine what the best course of action is. If the major concern is a health problem, the therapist would begin with a bottom-up approach. Examples include aspiration, a newly repaired tendon, or a patient with a fall risk. If the major concern is the ability to participate in a life activity, the therapist would begin with a top-down approach. Examples include taking care of one's personal self-care, participating in a social group, or writing poetry. If the major concern involves contextual concerns, the therapist would begin evaluation by examining those factors.

Conclusion

We as a profession have come full circle. Our approach to evaluation and treatment is similar to that of our founders, albeit evolved. At this juncture, a retrospective awareness of how trends in our profession have mirrored societal ones may prevent our continued swaying with the tides of the time. Introspection would surmise that it is time to frame problems in a manner that best serves our clients, instead of in a manner that best fosters the independence and autonomy of the profession. In conclusion, it is our position that primary use of only one approach in problem framing can be insufficient, and that the use of a screening tool is indicated to ascertain the area warranting intervention, be it foundational, contextual, or occupational.▲

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