Ensuring That Education, Certification, and Practice Are Evidence Based

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The occupational therapy profession has put forth a vision for evidence-based practice. Although many practitioners express a commitment to the provision of services informed by evidence, the reality that tradition still determines much of our education, certification, and practice cannot be ignored. In this article, we highlight the disconnect between the profession’s aspirations and actual practices using neurophysiological models as an example. We describe actions to actualize the shift from traditional interventions to evidence-based approaches. We challenge readers to become agents of change and facilitate a culture shift to a profession informed by evidence. It is our hope that this article will provoke critical discourse among educators, practitioners, authors, and editors about why a reluctance to let go of unsubstantiated traditions and a hesitancy to embrace scientific evidence exist. A shift to providing evidence-based occupational therapy will enable us to meet the objectives of the Centennial Vision.


Background

We respectfully edit and author multiple chapters in review and study guides for the national occupational therapy certification examinations (Fleming-Castaldy, 2009, 2012). For more than a decade, we have struggled with a disconnect between our commitment to currency and efficacy and the press to include outdated and unsubstantiated information across multiple domains in these works. To ensure our publications are solid resources, we review the textbooks the National Board for Certification in Occupational Therapy (NBCOT; 2010) uses to validate exam content. To facilitate students’ effective studying, we strive to coherently synthesize this wealth of information. This process
confounds us when key references describe approaches developed many decades ago that subsequently have been found to have questionable efficacy. Academic integrity calls for us to disregard this material and not include it in our works. Yet we cannot ignore our responsibility to ensure that our publications include potential NBCOT examination content.

For example, to address this conflict, we note that traditional neurophysiological approaches were “developed in the 1940s and 1950s based on the understanding of nervous system pathology at that time” (Gillen, 2009, p. 243; 2012, p. 260). Although this caveat is truthful, it is untenable. Why are outdated approaches in current texts when they have been usurped by contemporary approaches that are more occupation based and task oriented and are supported by sound scientific evidence?

When we discuss our dilemma with colleagues, many report feeling compelled to teach traditional approaches to ensure that students pass the certification examination. Although knowledge of “facilitation and handling principles and techniques” (NBCOT, 2008a, p. 106; 2008b, p. 131) is listed in the NBCOT examination blueprints, no theoretical approaches or models of practice are specified. This ambiguity can contribute to a perception that all content in NBCOT reference textbooks is critical to master for examination success, regardless of its relevance (or lack thereof) to current EBP. The press to ensure students’ success on the NBCOT examination is accentuated by the Accreditation Council for Occupational Therapy Education (ACOTE®, 2012) standard that program pass rates meet a set benchmark. Noncompliance results in significant stress for program directors and faculty members, who must execute remediation plans and address institutional concerns about the recruitment of future students.

Educators who teach only contemporary approaches risk student complaints about inadequate preparation for fieldwork. To avoid conflict, the disconcerting stance of teaching traditional approaches in a historical context (with the caveat “disregard this once you pass your exam”) may be taken. Although some may be comfortable not rocking the boat to directly confront this disconnect, we believe it is time to challenge existing practices and facilitate needed change.

Why Evidence Trumps Tradition

In this section we identify key issues that support the use of evidence, not tradition, to inform occupational therapy education, certification, and practice.

Ethical Principles

The Occupational Therapy Code of Ethics and Ethics Standards (2010) states that practitioners should avoid using outdated or obsolete measures, use evidence-based interventions as much as possible, take actions to ensure continuing competence, and practice on the basis of “current knowledge and research” (AOTA, 2010b, p. S19). Practitioners must provide clients with “full disclosure of the benefits, risks, and potential outcomes of any intervention” (p. S21). These tenets mandate that the perpetuation of practices based on unfounded theories end. It is an ethical responsibility to ensure competence and provide interventions grounded in science and established efficacy.

Educational Standards

The ACOTE (2012) standards for the occupational therapist emphasize the development of competencies for EBP. The AOTA (2010a) blueprint for entry-level education provides a curriculum guide, but it does not prescribe details. Because published education guidelines are broad, educators must “continuously and dynamically” (AOTA, 2010a, p. 186) assess their curricula to ensure currency in practice. If outdated approaches and unsubstantiated theories remain in curricula, are educators preparing students for competent practice?

Certification and Licensure

Professional certification and licensure aim to protect the public by ensuring qualified practitioners. Most state regulatory boards use the NBCOT certification examinations as a licensure qualifier. These examinations are developed on the basis of practice surveys (NBCOT, 2008a, 2008b); therefore, multiple barriers to the implementation of evidence in practice must be acknowledged (Tomlin & Borgetto, 2011). Past and prospective survey respondents may include practitioners who have not updated their practices. Reported practice thus may not be evidence based.

During workshops we conduct nationally, many attendees report feeling disconnected from the profession’s stated emphasis on EBP and their established comfort zone. Others acknowledge they do not know contemporary approaches and question their own interventions’ efficacy. The incongruence between reported practice and the aims of certification and licensure is troubling. This disconnect is supported by the literature (Crist, Brown, Fairman, Whelan, & McClure, 2007; Natarajan et al., 2008). Approaches learned in school (e.g., neurodevelopmental treatment [NDT], Brunnstrom, proprioceptive neuromuscular facilitation [PNF]) are reported as preferred for stroke rehabilitation (Natarajan et al., 2008), whereas entry-level therapists report NDT as one of the most frequent interventions used across settings (Crist et al., 2007).

Because certification and licensure renewal requires evidence of continuing professional development, it is practitioners’ responsibility to seek and engage in activities that develop their competencies beyond entry-level education for practice informed by evidence.

Professional Identity and Competition

Those who ignore evidence to argue that contemporary approaches are nascent and who maintain allegiance to practices whose efficacy has been questioned for decades present a professional identity of marginal value in today’s practice environment. Consumers, payers, regulatory bodies, and policymakers are demanding sound rationales for interventions and functional outcomes that enable participation (Hinojosa, 2007; Holm, 2000). Although occupational therapy practitioners may readily identify themselves as most qualified to meet this need, the reality of
professional competition cannot be ignored (Clark, 2010).

Many professions are seeking to expand their practice to include occupation-based services. Yet occupational therapists report using “pre-functional activities that aim to improve performance skills and body structures more often than occupation-based activities that incorporate meaningful activities into therapy sessions” (Smallfield & Karges, 2009, p. 412). Why are occupational therapy practitioners holding on to reductionistic approaches when other professions are embracing contemporary models that support the validity of context and activity-based interventions? We recognize that interventions are often needed to directly treat impairments; however, we contend that these should be embedded in EBP, which emphasizes the therapeutic use of occupation. Those who plan and implement interventions without consideration of the evidence will be replaced by professionals who have integrated science into their daily practice (Clark, 2010).

The Centennial Vision

The oft-quoted Centennial Vision foresees occupational therapy as “a powerful, widely recognized, science-driven, and evidence-based profession” (AOTA, 2007, p. 613). Evidence-based decision making and science-fostered innovation in practice are key objectives of this vision (AOTA, 2007), but their attainment is seriously compromised by the inclusion of outdated approaches in professional texts, curricula, certification, and practice. We assert that the Vision’s aims can be achieved if occupational therapy text authors and editors, educators, and practitioners commit themselves to maintaining currency in their respective works. As an example, we provide a critical review of the evidence regarding approaches used for clients with impaired motor control.

Argument for the Abandonment of Traditional Neurophysiological Models

For decades, researchers have argued that the traditional neurophysiological models are based on an outdated understanding of motor control and recovery (Burgess, 1989; Henderson, 1988; Mathiowetz & Haugen, 1994). Attempts have been made to integrate these approaches with the language of contemporary approaches, but Rao (2011) noted the following:

Although this is typical during paradigm shifts, the amalgamation of old techniques with new theoretic knowledge is not useful either theoretically (since established Bobath techniques are not consistent within the new paradigm of motor control and learning) or for clinical practice (since numerous studies have demonstrated that there is indeed little evidence). The challenge for us as therapists is to design and evaluate techniques within the newly emerging paradigm of task-oriented training. (p. 124)

Evidence further challenges the continued use of traditional approaches. Despite being used for more than 50 years, one is hard pressed to find evidence that PNF, Rood, or Brunststrom’s movement therapy have any effect on people living with disabilities secondary to a neurological event. The available evidence for the effectiveness of the Bobath approach in stroke rehabilitation was evaluated in Kollen et al.’s (2009) systematic review, which concluded that no evidence existed of Bobath’s superiority in promoting sensorimotor control of upper and lower limb, dexterity, mobility, activities of daily living, health-related quality of life, and cost-effectiveness. Kollen et al. found limited evidence for balance control in favor of Bobath and stated that “evidence-based guidelines rather than therapist preference should serve as a framework from which therapists should derive the most effective treatment” (p. 89).

Other systematic reviews (Luke, Dodd, & Brock, 2004; Paci, 2003) concluded that NDT is not superior or effective. Rao’s 2011 review determined “the Bobath approach needs to be reconsidered in stroke rehabilitation” (p. 124). Large clinical trials (Hafsteinsdottir, Algra, Kappelle, & Grypdonck, 2005; Langhammer & Stanghelle, 2011) demonstrated that NDT is ineffective and inferior when compared with conventional therapy and task-oriented approaches based on motor learning principles.

Although task-oriented approaches are often called “contemporary approaches,” they are clearly aligned with our profession’s philosophical base:

Meaningful activity is essential to occupational therapy intervention because occupation is the power of intervention. If occupational therapists believe in the use of occupation-based activities, it is contradictory for them to use pre-functional activities more often than functional activities. (Smallfield & Karges, 2009, p. 411)

The body of research supporting the efficacy of occupation-based methods continues to grow. For example, the task-oriented approach of constraint-induced movement therapy is clearly effective for a subgroup of stroke survivors (Taub et al., 2006). Task-oriented training demonstrated positive outcomes when compared with immobilization, resistance training, the Bobath approach, and traditional physical and occupational therapy (Rao, 2011). Hubbard, Parsons, Neilson, and Carey (2009) concluded that occupational therapists should routinely apply task-specific training during neuromotor interventions, particularly in poststroke upper-limb recovery. Similarly, Rensink, Schuurmans, Lindeman, and Hafsteinsdottir (2009) concluded that active use of task-oriented training produced better functional outcomes than traditional therapies for stroke survivors, contributing to improved overall health-related quality of life. They recommended “creating opportunities to practise meaningful functional tasks outside of regular therapy sessions” (p. 737).

Recommendations to Actualize Practice Informed by Evidence

Although the evidence for the use of contemporary approaches is strong, tradition prevails (Crist et al., 2007; Natarajan et al., 2008). Many challenges are involved in integrating evidence into practice, but failure to do so can result in suboptimal care, jeopardize reimbursement, and marginalize occupational therapy’s scope of
practice (Hinojosa, 2007; Lin, Murphy, & Robinson, 2010). We must confront the challenges to integrating evidence into practice to overcome the substantial lag that exists between the two (Kielhofner, 2005; Lin et al., 2010). Lin et al. (2010) described clear steps for implementing EBP. They identified easily accessible resources to appraise evidence and concrete strategies to effectively “bridge the divide between evidence and practice” (p. 168). We believe the incorporation of these recommendations (i.e., case-based workshops, small-group projects, expert facilitators, multidisciplinary collaboration, clinical and academic partnerships, journal clubs, and professional association membership) into education and practice will highlight the ineffectiveness of unsubstantiated approaches and foster adoption of EBP. These approaches can be effectively used by students, educators, and practitioners. Collaborative partnerships between practitioners, researchers, and theorists can also advance the scholarship of practice (Kielhofner, 2005).

Fresh perspectives can be brought to settings steeped in tradition by students and entry-level practitioners educated in EBP, providing a bridge toward practice informed by evidence. By conducting in-services, initiating the use of contemporary approaches, and modeling the pursuit of knowledge, they can serve as agents of change and facilitate a culture shift to EBP. Experienced practitioners should adopt an open mind to learn from our profession’s newest generation and seek opportunities to acquire the competencies needed for EBP when fulfilling their requirements for the maintenance of certification and licensure. Those who seek well-founded explanations for their interventions (rather than default to history) will develop strong professional identities able to withstand competition. In the following sections, we present additional conscious reflections and purposeful actions for major stakeholders to finalize the transfer of outdated approaches to the profession’s historical archives.

Educators

Although the aspiration to present EBP may be established in curricula standards, educators must critique their courses. Which approaches (traditional or evidence based) are formally presented and tested? Is what is or what should be in practice taught? Does practice drive education or education drive practice?

Faculty limitations must be acknowledged and needed expertise acquired. Skilled educators should model mindful reflection, facilitate critical dialogue, and assertively mentor novice educators and adjunct instructors. Mentees should actively seek and nondefensively accept mentorship to learn to teach beyond their comfort zone and integrate evidence into their courses.

In the realm of continuing education, instructors have a professional responsibility to let participants know whether the interventions they teach are anecdotal or evidence based. Interventions deemed ineffective or inferior by evidence should be rejected by those who approve or sponsor continuing education courses.

Textbook Editors and Authors

Entry-level textbooks provide the content foundation for curricula, certification examinations, and students’ future practice. We challenge editors and authors to appraise the content of their work to determine how much is included about outdated approaches. If content is only historically relevant, should it be in a chapter or relegated to a footnote in an introduction about the evolution of the field?

Certification Boards

Because certification examination content validity is established through survey data (NBCOT, 2008a, 2008b), the limitations of this research design must be recognized. The practices reported by respondents may not represent those of non-respondents or reflect EBP. These realities should be considered during practice survey construction, data analysis, examination blueprint formulation, and item construction. Are the justifications for exam items based on documented evidence or retained tradition?

Conclusion

In her seminal analysis of the profession’s tools of practice, Reed (1986) advised that “historical precedent is the least desirable justification… but the easiest to explain… [whereas] research and study is the most professionally responsible approach to justifying the use of a medium or method but the most difficult to obtain” (p. 599). Reed’s words have great applicability to the adoption or abandonment of intervention approaches. For decades, leaders in our field have called for EBP, yet many in our profession remain wedded to tradition. This reluctance to assume accountability for the validity of our practices must be confronted. Maintaining misplaced loyalties and politely ignoring colleagues who do not remain current must cease.

The time is now to make the shift from tradition to evidence. The Centennial Vision is a dominant influence in curricula and is contributing to EBP’s becoming firmly established in our profession. Although not all aspects of the art of occupational therapy can be systematically measured (Tomlin & Borgetto, 2011), the available quantitative and qualitative research should be used to inform practice. Theoretically based research within and outside our field should also be used to guide practice (Gutman, Mortera, Hinojosa, & Kramer, 2007; Kielhofner, 2005). Ignoring published evidence that contributes to the science of occupational therapy practice must stop.

We can learn much from our international colleagues. On the basis of findings from an extensive review of the evidence, Bobath instructors in the Netherlands called for the abandonment of the obsolete and constantly changing assumptions used to explain the Bobath Concept [and the adoption of] a new approach based on evidence-based guidelines and the improved understanding of mechanisms underlying adaptive motor relearning and mechanisms of functional recovery after stroke. (Kollen et al., 2009, p. e95)

Over a period of 18 months, all active Bobath instructors in the Netherlands were teaching the new, evidence-based approaches.

We challenge our U.S. colleagues to be equally receptive to change. Although we have focused on motor control, we believe
the continuance of traditional approaches without evidence is indefensible in any practice area. Educators, editors, authors, practitioners, and our profession’s credentialing bodies must acknowledge the impact of continued inclusion of unsubstantiated and disproven approaches in their respective domains. It is time to walk the talk of EBP and not require the demonstration of knowledge of obsolete techniques as a criterion for practice.

The integration of science into a profession requires introspection, confrontation, and discourse. Personal and systemic change must be sought, embraced, and critiqued. We are all accountable for the attainment of a profession informed by evidence to ensure our integrity and maintain a competitive edge. We believe that the art of occupation-based practice—supported by the science of evidence-based approaches—will help occupational therapy meet the challenges and seize the opportunities of our next 100 years. ▲

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References


