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Balancing Efficacy and Effectiveness with Philosophy, History, and Theory-Building in Occupational Therapy Education Research

Abstract

The preferred focus for education research in occupational therapy increasingly rests on studies that investigate efficacy and effectiveness in the teaching-learning context. While important, the almost exclusive promotion of outcomes-focused studies can come at the expense of other forms of inquiry, including philosophy, history, and theory-building. To fully inform education and enhance practice, outcomes-focused research needs the conceptual foundation provided by philosophical, historical, and theory-building studies. In this paper, the authors suggest that the research enterprise in occupational therapy education is in its infancy and, therefore, quite susceptible to shortcuts that head straight to outcomes. To address this issue, the authors promote an approach where theory-building studies and philosophical explorations both precede and enrich all research endeavors, including those aimed at identifying “what works” in professional education.

Keywords

education, research priorities, philosophy

Complete Author List

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Evidence-based. Measurable outcomes. Science-driven. These catchphrases capture the zeitgeist within health care and research funding policies. They are often code for knowledge and outcomes derived from hypothesis-driven, randomized experiments using advanced statistical analytic methods (Berliner, 2002). Under pressure for outcomes-focused research, occupational therapy too has prioritized these methods for generating efficacy and effectiveness evidence (American Occupational Therapy Association [AOTA] & American Occupational Therapy Foundation [AOTF], 2011). Without a doubt, intervention outcome studies are critical to occupational therapy practice and education research. However, in a rush to build quantifiable evidence of what works, the profession risks missing the growth and evidence produced from other forms of knowledge and research.

Drawing on scholars of education and medical education, we contend that outcomes-focused research is built from philosophical, historical, and theoretical inquiry. Further, we assert that outcomes-focused studies that are not built from philosophical, historical, and theoretical inquiry are akin to putting the proverbial research cart before the horse (Campbell et al., 2000). Therefore, for educational science in occupational therapy, we propose a strategic balance between inquiry that elaborates philosophical, historical, and conceptual underpinnings of education and inquiry that produces measurable outcomes from educational interventions.

By inquiry, we mean applying systematic processes to “seeking for truth, knowledge, or information concerning something; search, research, investigation, examination” (Inquiry, n.d.). Thus, we use inquiry and research synonymously, although we recognize that inquiry is also broader than formal research. We refer to philosophical, historical, and theoretical inquiry in two ways: (a) where philosophy, history, and theory are addressed as part of the research in order to situate it paradigmatically, and (b) where philosophy, history, and theory are addressed as the topics of research. In the former, researchers identify, for example, the philosophy of knowledge in which a study is grounded. In the latter, researchers ask questions that directly examine philosophical, historical, or theoretical phenomena and select systematic research methods appropriate to exploring such phenomena. We propose that both forms of inquiry are indispensable to education research.

Education research refers to “critical enquiry aimed at informing educational judgments and decisions in order to improve educational action” (Bassey, 1999, p. 39). Morrison (2002) further distinguished between “action-oriented research, with its intentions to effect action, and what is described as ‘discipline research’ which is primarily concerned with *understanding* the phenomena of educational activities and actions” (p. 9). Action-oriented research is similar to the scholarship of teaching and learning, which focuses on generating data from classroom-based inquiry in order to improve practice (National Research Council, 2012). Discipline research is similar to discipline-based education research, which “investigates learning and teaching in a discipline...with deep grounding in the discipline’s priorities, worldview, knowledge, and practices” (p. 9). Our premise in this paper applies to both discipline-based education research and the scholarship of teaching and learning.

To develop our thesis, we first establish how ubiquitous philosophy, history, and theory are in all research. We then examine the lack of these forms of inquiry in occupational therapy education research. And last, we outline a research method that can strengthen and develop inquiry focused on philosophy, history, and theory.

The Ubiquitous Nature of Philosophy, History, and Theory in All Research

We want to first review how philosophical, historical, and theoretical inquiry buttress the research process. Doing so will provide the basis for suggesting that these types of inquiry be balanced

with efficacy and effectiveness inquiry. By balanced we mean making philosophy, history, and theory explicit in all research studies and increasing published studies that explore them directly as the focus of research. First, philosophical, historical, and theoretical inquiry are used to situate all research paradigmatically (Lincoln, Lynham, & Guba, 2011). The philosophies or paradigms of positivism, postpositivism, and constructivism, among others, guide “the practical conduct of inquiry”, such as determining the aims, how the quality of inquiry is established and judged, the roles of the researcher, and “the interpretation of findings and policy choices” (Guba & Lincoln, 1994, p. 112). Research shaped by one philosophy will differ in important ways from research shaped by a different philosophy. Therefore, explicitly naming the philosophy by which research has been shaped clarifies a study’s premises. Hence, the guidelines for publishing research in the *Canadian Journal of Occupational Therapy* (2015) require authors to clearly describe a study’s paradigm.

Further, each philosophy undergirding research emerged in unique historical contexts, such as the rise of quantification in the mid-twentieth century in western cultural contexts and subsequently, toward the end of the century, the rise of alternative forms of inquiry with their critiques of over-quantification (Guba & Lincoln, 1994). One such critique highlighted the important role of theory in all research. It was previously assumed that facts were independent from theory. “But it now seems established beyond objection that...facts are determined by the theory window through which one looks for them, but different theory windows might be equally well supported by the same set of ‘facts’” (p. 107). Further, new research philosophies emerge in response to new historical movements and ideas, such as postmodernism, which fundamentally shift the undergirding assumptions and implementation of research.

In addition to situating research paradigmatically, the entire research design process—from what constitutes a research problem and the knowledge base used to frame the problem, to the argument and aims for a study and the unanswered questions related to a research problem—is interdependent with philosophy, history, and theory (Antonenko, 2015). For example, making explicit the philosophical, historical, and theoretical foundations for an intervention “may lead to changes in the hypothesis and improved specification of potentially active ingredients” (Campbell et al., 2000, p. 695). Further, philosophical, historical, and theoretical tenets guide and justify researchers’ choice of empirical methods and create deeper levels of understanding during data analysis (Thompson, 2012). Philosophical, historical, and theoretical inquiries also shed light on the relevance, coherence, and relationships between concepts and findings that may not have been obvious from data alone. Overall, these inquiries are catalysts for several key functions in the research process and are indispensable (Storberg-Walker, 2006). According to Torracco (1997), these functions include “interpreting new data, responding to new problems, defining applied problems, evaluating solutions, discerning priorities, identifying new research directions, developing common language and defining boundaries, and guiding and informing research” (as cited by Lynham, 2000, p. 163). Thus, philosophy, history, and theory are indispensable to the research process.

In addition to the buttressing role that philosophy, history, and theory have in all research, the systematic development of philosophies, historical accounts, and theories is equally important because these guide future research and move a science forward (Cook, Bordage, & Schmidt, 2008). Such inquiry drives science forward because the purpose is to systematically assemble and define key concepts central to education and to posit mechanisms of learning. These posited mechanisms are then explored, strengthened, changed, or discarded through empirical studies and the further refinement of

theory. Such work is essential because “the evidence [from studies] will only have relevance if it feeds us with the knowledge about what interventions work and when *and informs our theoretical understanding*” [emphasis added] (Gibbs, Durning, & Van Der Vleuten, 2011, p. 185). In other words, moving a science forward requires that philosophies, historical accounts, and theories be developed to guide research and that research circle back to refine philosophical, historical, and theoretical understandings.

In sum, philosophy, history, and theory serve as the paradigmatic roots shaping all research. First, all research depends on concepts that have been systematically assembled from philosophy, history, and theory to explain why an intervention is important and believed to produce a desired effect. Second, research aimed at developing philosophies, historical accounts, and theories produces frameworks that guide intervention research. Prioritizing studies void of philosophy, history, and theory is thus a questionable way to approach building any research agenda. Krupat (2010) was critical of medical education research for the lack of conceptual analysis, arguing that strictly empirical research without conceptual coherence is not good science. Gibbs et al. (2011) argued that studies focused solely on educational interventions and their outcomes prevent research from maturing and that medical education inquiry would remain “soft science” (p. 184) until studies of educational interventions grew from, and helped to build, conceptual frameworks. As Norman (2012) argued, education needs more theory-based research, not less. Therefore, the future of education research in occupational therapy will depend on (a) conducting inquiry that builds philosophical, historical, and theoretical foundations for the science and (b) conducting intervention inquiries that make explicit their philosophical, historical, and theoretical roots.

The Lack of Philosophical, Historical, and Theoretical Inquiry in Education Research

In occupational therapy, systematic mapping studies have found that academic and fieldwork education research is characterized by descriptive inquiry methods used to study learning activities in local contexts, where student perceptions are the primary outcomes; however, studies frequently omit theoretical frameworks and use of philosophy, history, and theory as windows on data (Hooper, King, Wood, Bilics, & Gupta, 2013; Roberts, Hooper, Wood, & King, 2014). While much of the work in occupational therapy education research can be classified as descriptive, it is not as if it has been intentionally and systematically descriptive. That is, descriptive research is rarely named as the research approach. Rather, the body of work has been somewhat opportunistic in terms of studying an educational practice that is in place or being newly implemented in a local learning context. Philosophical, historical, and theoretical inquiry has rarely been addressed as the basis for the research or as a topic of research. Therefore, collectively, the characteristics of the research match those associated with early-phase research development (Cook et al., 2008). Growing beyond early-phase research will require systematic attention to philosophy, history, and theory in and through education research. Theory-building research (Lynham, 2002; Swanson & Chermack, 2013) offers a method that can help advance these inquiries.

A Method to Help Grow Systematic Philosophical, Historical, and Theoretical Inquiry

Addressing philosophy, history, and theory as it relates to situating studies paradigmatically has been widely addressed (Lincoln, Lynham, & Guba, 2011). However, designing research to develop philosophies, historical accounts, and theories have been overlooked, perhaps in part because of a lack of methodology for studying these domains in an applied profession. Theory-building research can help fill that gap (Swanson & Chermack, 2013). Theory-building research is a systematic research method

that was developed in and for the applied field of human resource development which, like occupational therapy education, was in an early phase of research and in need of theoretical inquiry. We present the method here as it may apply to education research, noting that each step not only involves philosophical and historical inquiry, but also facilitates philosophical and historical inquiry. Theory-building research generates frameworks that (a) describe the elements of a phenomenon, in this case a phenomenon in occupational therapy education; (b) posit how the elements likely work together toward desired learning outcomes; (c) apply the posited transactions to practice; and (d) refine the elements and transactions based on findings. Ultimately, this method is concerned with clarifying and helping to select actions in practice. The purpose of theory-building work is, therefore, to “explain the meaning, nature, and challenges of a phenomenon, often experienced but unexplained in the world in which we live, so that we may use that knowledge and understanding to act in more informed and effective ways” (Lynham, 2002, p. 222). Theory-building research involves four overlapping and iterative stages: conceptual development, operationalization, application, and refinement. Philosophy, history, and theory are at the heart of all four phases as both inputs and outputs (see Figure 1). However, due to the early developmental stage of research, there currently exist limited examples of theory-building specific to education. Therefore, we have chosen an example from practice to clarify the process. To illustrate, we thread through each of the following stages the developmental process of the Lived Environment Life Quality Model (LELQ), a model for occupational therapists working with institutionalized adults with dementia (Wood, 2014; Wood, Lampe, Logan, Metcalfe, & Hoesly, 2016).

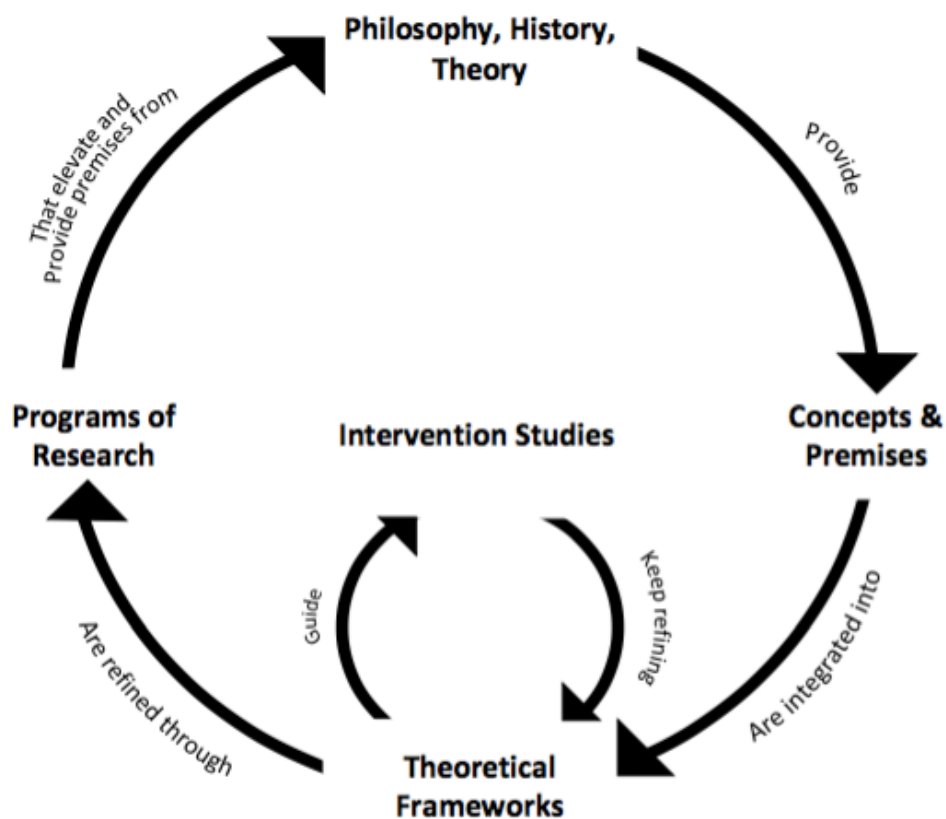


Figure 1. Stages of theory-building research.

Conceptual Development

This phase parallels what Pierce (2013) and Hooper (2016) discussed as intentional, systematic descriptive research that involves identifying, defining, and describing the basic facets of a construct. Here, researchers develop concepts believed to be at play in an area of occupational therapy education and posit the interactions among the concepts and how they are believed to work to produce learning (Lynham, 2002). Concepts may be harvested from existing philosophy, history, and theory both inside and outside of occupational therapy or from findings from observations and interviews or from practice problems. Regardless of the source, this stage requires that researchers explicitly describe the systematic process by which concepts for the developing framework were extracted from philosophy, history, and theory or how philosophy, history, and theory provided the analytic window on the data or the practice issue. The outcome of the conceptual development stage is a “coherent and informed theoretical framework, which encapsulates or ‘contains’ the explanation of the phenomenon, issue, or problem that is the focus of the theory” (Lynham, 2002, p. 229).

Conceptual development is described as the most foundational stage for growing a science because efficacy and effectiveness research depend on the rigor of the science’s descriptive work (Pierce, 2013). Consider, for example, the development of the LELQ model (Wood, 2014; Wood et al., 2016). Conceptual development of the LELQ began with a practice problem: “How does the immediate social and physical environment influence time-use and well-being each day?” Deep study of the philosophy and history of occupational therapy provided an analytic window into the practice problem. That is, philosophy and history offered the initial premise for the transactions among environment, time use, and well-being. To further develop the premises of the LELQ model, Wood (1998a, 1998b, 2002) then integrated theory from sociology, gerontology, and environmental psychology with scholarship in occupational therapy. The model’s premises that grew from philosophical, historical, and theoretical inquiries were then operationalized.

Operationalization

The next phase of theory-building research is described as operationalization. This phase involves converting the model’s transactions, proposed and elaborated in the conceptual development phase, into questions, hypotheses, and propositions that can be examined through research. This phase parallels what Cook, Bordage, and Schmidt (2008) referred to as clarification studies and what Pierce (2012) referred to as relational studies. Clarification studies take the concepts and propositions derived and explained from philosophy, history, and theory one step further. Here, researchers propose and study impacts on learning and teaching. The findings, though, rather than only reporting the observed effects, are used to clarify the “processes that underlie the observed effects” (p. 30) and thus refine the emerging theoretical framework. Clarification studies, though rare in occupational therapy education, tend to look toward the future by constructing a theoretical infrastructure operationalized for future empirical work. Take again the LELQ model as an example. Having established the model’s premises from philosophy, history, and theory, Wood operationalized the concepts to establish a research program to further assess the concepts (1998a, 1998b, 2002). The research focus was to examine the premises of the emerging model, thus continuing philosophical and theoretical inquiry at an empirical level.

Cook et al. (2008) asserted the necessity of clarification studies “to deepen [the] understanding and advance the art and science of medical education” (p. 128). Therefore, if clarification studies deepen the overall state of research, and these studies depend on conceptual work, then philosophical, historical, and theoretical inquiry must have high priority in building a profession’s educational science.

Confirmation and Disconfirmation

At the confirmation and disconfirmation phase, researchers study the emerging theory in real practice situations with the focus on analyzing research findings in light of how the findings verify or refute elements of the theory. Most research is confirming and disconfirming; however, the distinguishing feature here is what is being confirmed or not. The phenomena of interest is a theoretical framework developed and explained in part from philosophy and history. At this phase, the research questions, aims, and findings relate to the emerging theory more so than to the phenomena the theory is designed to explain. The outputs of research conducted at this phase involve a basis on which to judge the “fit or accuracy of the theory” (Swanson & Chermack, 2013, p. 107). For example, after years of studies examining the premises of the LELQ model, Wood, Lampe, Logan, Metcalfe, and Hoesly (2016) conducted a systematic confirmation/disconfirmation study. They asked practitioners to use the model and evaluate its concepts in practice. The study largely confirmed the concepts and premises of the LELQ Model and illustrated the model’s usefulness in explaining and guiding practice with adults with dementia who live in institutions such as skilled nursing facilities.

Application

As a reasonable fit of the theory is established, researchers will also conduct inquiry on its direct application by practitioners. The focus of the research questions at this phase are again focused on the ease and use of the theory in practice. So while the inquiry takes place in the context of real-world practice situations, it takes place in order to continue work on the theory. The results are used to refine the theory, ultimately, providing a solid foundation for efficacy and effectiveness studies, which will focus on the theory’s proposed outcomes, bringing us full circle to the relevance and interdependence of outcomes research on philosophy, history, and theory. We offer one final example from the LELQ model. Having derived the premises of model from philosophy, history, and theory and having operationalized its concepts and conducted research directly on its premises, Wood et al. (2016) explained that the next steps for the LELQ model will be to conduct intervention studies and, importantly, to continue “real-world scrutiny of the LELQ model[’s] usefulness for practice” (p. 24). As the LELQ model moves into intervention and outcomes research, that research is still intended to circle back to inform the model’s philosophical, historical, and theoretical underpinnings. Thus, philosophical, historical, and theoretical inquiry continue as researchers study the LELQ model’s impact on clients and institutions.

Conclusion

Occupational therapy education research is in its infancy. As a developing endeavor, such research is vulnerable to the prevailing zeitgeist of outcomes-focused approaches, promoted as the path by which the profession will develop its education science. Rendered less visible by the dominant research discourse are the key roles that philosophical, historical, and theory-building inquiry play in creating outcomes-focused research and ensuring its effectiveness. From conceptualization through analysis, studies of what works depend on sound philosophical, historical, and theory-building work. Studies that simply begin with interventions and end with outcomes lack an important mechanism that demonstrates their contribution to how education works in the profession.

Nonetheless, priorities for research often preference studies focused on effectiveness, randomized control, and evidence generation (Thomas, Bossers, Lee, & Lysaght, 2016). This focus on efficacy is likely in response to gaps recently identified in education research (e.g., Hooper et al., 2013). Moreover, recognizing that occupational therapy education research is in an early phase of development,

clearly studies with appropriate data collection, rigorous analysis, and broad outcomes are necessary. However, the danger here is to lump philosophical, historical, and theoretical inquiry with the opportunistic descriptive work that has dominated education research, but these are not the same; in fact, inquiry in philosophy, history, and theory, rather than being separate from or less than the prioritized empirical work, are actually intimately involved with its development. Thus, this narrow perspective fails to recognize that philosophy, history, and theory development are: (a) solid research topics unto themselves, (b) valid forms of research, (c) especially needed when a line of inquiry is truly in its infancy, and (d) the first steps in a larger program of intervention research (Campbell et al., 2000).

However, a newly developed research agenda for occupational therapy education promotes six priorities for the future of occupational therapy education research: theory-building, pedagogy, instructional methods, learner characteristics and competencies, socialization to the profession, and faculty development and resources (AOTA, 2014). With the inclusion of theory-building in the agenda, and in a recent educational conference call for papers, opportunities exist to mature the educational science of occupational therapy with a philosophy-history-theory-outcomes research balance.

To mature occupational therapy's education science, it is imperative that the full spectrum of inquiry—philosophy, history, theory, intervention, outcomes—be promoted, not only as individual forms of inquiry but also as an interdependent system. Interdependence means that existing and developing philosophies, historical accounts, and theories serve as the source waters of downstream studies of instructional processes and their outcomes. In turn, studies of instructional processes and their outcomes serve to further refine concepts and proposed learning mechanisms established through philosophical, historical, and theoretical inquiry. Part of the interdependent system must also include opportunities to publish work at each phase of inquiry.

Philosophy, history, and theory researchers can promote this interdependence through building solid conceptual infrastructure for future empirical studies. Effectiveness and efficacy researchers can promote this interdependence through explicitly situating research in philosophy, history, and theory. Successful promotion of this inquiry interdependence is high stakes for occupational therapy. If promoted, education research will not only increase in quantity but also move beyond the descriptive level to inform teaching and learning on a scale large enough to affect the profession's desired learning outcomes: to graduate diverse practitioners who address global occupational needs.

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