Representation of Theory in Occupational Therapy Education: An International Systematic Mapping Review, 1940-2015

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Abstract

Previous review research has outlined the state of various aspects of occupational therapy education. No reviews, however, have examined how theory, specifically, is represented in educational scholarship. This systematic mapping review explored the way in which theory, as it relates to both occupational therapy practice and pedagogy, has been discussed throughout occupational therapy education scholarship. In the education scholarship, theory pertaining to occupational therapy practice often overlaps with theory pertaining to pedagogy; therefore, both domains were included in the review. A systematic search for occupational therapy education literature published between 1940 and 2015 resulted in 9765 unique citations, 556 of which met inclusion criteria. Papers were coded for curriculum design, teaching methods, research design, and theoretical content. This paper presents findings related to theoretical content. Results demonstrated that theory, when referenced, referred to established social science theories more prominently than occupational therapy specific theory, until recent decades. Further, theory was often treated as a footnote to the main discussion rather than as a focal point. The authors discuss the importance of prioritizing a line of scholarship surrounding how to convey theory in such a way that it better informs pedagogy as well as the processes of evaluation, planning, and intervention. This comprehensive historical review serves to orient occupational therapy scholars to the past and present state of theory while also shedding light on its necessary inclusion in future scholarship.

Keywords

Theory, occupational therapy, education, systematic mapping review

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ABSTRACT

Previous review research has outlined the state of various aspects of occupational therapy education. No reviews, however, have examined how theory, specifically, is represented in educational scholarship. This systematic mapping review explored the way in which theory, as it relates to both occupational therapy practice and pedagogy, has been discussed throughout occupational therapy education scholarship. In the education scholarship, theory pertaining to occupational therapy practice often overlaps with theory pertaining to pedagogy; therefore, both domains were included in the review. A systematic search for occupational therapy education literature published between 1940 and 2015 resulted in 9765 unique citations, 556 of which met inclusion criteria. Papers were coded for curriculum design, teaching methods, research design, and theoretical content. This paper presents findings related to theoretical content. Results demonstrated that theory, when referenced, referred to established social science theories more prominently than occupational therapy specific theory, until recent decades. Further, theory was often treated as a footnote to the main discussion rather than as a focal point. The authors discuss the importance of prioritizing a line of scholarship surrounding how to convey theory in such a way that it better informs pedagogy as well as the processes of evaluation, planning, and intervention. This comprehensive historical review serves to orient occupational therapy scholars to the past and present state of theory while also shedding light on its necessary inclusion in future scholarship.

Introduction

Learning about theory is an essential foundation of an occupational therapy student's education. Theory is defined as an organized way of facilitating explanations and predictions about phenomena which contribute to the profession's body of knowledge (Van Deusen, 1993). In practice, theory guides the process of evaluation, treatment planning, and intervention (Kielhofner, 2009). In pedagogy, theory guides the design, implementation, and evaluation of teaching and learning. However, no research has broadly evaluated the manifestation of practice and pedagogical theory within occupational therapy education scholarship. The education scholarship is distinctive in that it incorporates, and thereby serves as a source for describing, theories taught for practice and theories guiding teaching. This paper presents an international systematic mapping review of theory as it manifests within occupational therapy education literature from 1940 to 2015. Thus, the time period covered by the review encompasses entire decade-long trends and allows the viewer to zoom out to an extent that gaps, patterns, and shifts related to practice and education theory are visible. The study questions included: What theories have been evoked in occupational therapy education over the last seventy-five years? What themes exist regarding the use of theory supporting both education and practice?

Scholars have warned that overlooking theory can have detrimental effects (Ikiugu & Smallfield, 2015). Ikiugu and Smallfield (2015) cautioned that practitioners who do not critically appraise evidence and its alignment with the profession's theoretical foundations run the risk of deserting occupational therapy's distinctive values, foundations, and contributions. While the profession emphasizes evidence-based practice (EBP), it must also maintain the connection between evidence and theory (Hooper et al., 2018). Dedication to the development and incorporation of theory is key to preserving occupational therapy's identity. Ikiugu and Smallfield (2015) stated that "EBP without development and use of professional theory is a hollow pursuit" (p. 165). Similarly, Whyte (2008) proposed that if researchers and practitioners devoted as much effort to theoretical development as they do to the production and replication of evidence, the field of rehabilitation would progress drastically in its scientifically based treatment (Whyte, 2008). Scholars have also argued that scientific evidence unaccompanied by explicit mention of theory is not true scholarship (Finlayson, 2007).

The differentiation between theories, models, frames of references, and frameworks has been confusing and debated among educators and practitioners (Christiansen & Baum, 1997; Hagedorn, 2001; Ikiugu, 2010; Nilsen, 2015). Many educators and practitioners view the aforementioned terms as interchangeable, arguing that this approach creates less confusion and provides a simplified perspective. Others point to the importance of differentiating theory as it provides clarity and various levels of practice guidance (Cole & Tufano, 2008). Theory in occupational therapy practice serves two purposes: to understand individuals and their occupations; and to predict and improve an individual's functioning and occupational performance (McColl, 2003). Theory in occupational therapy pedagogy explains how people learn and what methods are likely to support learning. Theory in both domains of pedagogy and practice were included in this review due to how they overlap in the literature, such as social learning theory being utilized

with occupational therapy students in relation to their own learning as well as in relation to their therapeutic interactions with clients.

McColl (2003) also differentiates "small-t theory" as a term used to refer to the informal--often personal--ideas that occupational therapists apply throughout practice and teaching that help shape their decision making. Contrasting, "Large-T Theory" refers to a formalized, methodological approach to conceptualizing and representing phenomena. The purpose of *Theory* is to enable one to foresee, predict, and study correlations and connections among concepts (McColl, 2003). Theories provide explanations of why and how specific practices are effective, reflect a profession's unique and distinct contributions, and guide occupational therapists through the application of evidence (Ikiugu & Smallfield, 2015; Krefting, 1985). Large T Theory also includes theories that are not unique to occupational therapy; the field has borrowed, and will continue to draw upon, theories established within other disciplines such as psychology, neuroscience, and education.

Large T and small t theory assist researchers, practitioners, and educators in using evidence to inform their practices and to produce the highest quality of work. These theories also connect the profession's values, beliefs, and postulates about best practices (Cole & Tufano, 2008). Therefore, investigating both small t and Large T theory is essential in that theory shapes and provides guidelines for action in occupational therapy practice and education.

In his seminal publication on the profession's conceptual foundations, Kielhofner (2009) described the ideal relationship between theory, research, and practice as one that allows for all three components to continually influence one another. A crucial missing link in this cyclical model, however, is education. Serving a major role in disseminating theory into future practice, education is a pivotal step in preparing effective, critical, and theory-informed practitioners. As with evidence-based practice, there is a need for evidence-based education and for education research to be accompanied by theory (Hooper, 2016; Ilic et al., 2015). Continued theory building is necessary for the field of occupational therapy to remain relevant and progressive. Additionally, scholars have increasingly identified a gap between entry-level occupational therapy professional education and clinical practice (Smallfield & Milton, 2020). Educators have been urged to bridge this "education-practice gap" through offering more opportunities for students to deepen their theoretical knowledge and *apply* it to actual practice (Smallfield & Milton, 2020). Our comprehensive review examined both theory supporting practice and theory supporting education (pedagogical theory), as they often overlap and are simultaneously conveyed through the education that occupational therapy students receive.

Methods

A systematic mapping review is one of fourteen types of reviews considered within a systematic review research framework (Grant & Booth, 2009). The purpose of a systematic mapping review is simply to describe the terrain of a line of inquiry, including what has been examined, how a topic has been represented, types of inquiry used to

explore a topic, and current ways of conceptualizing a topic. Systematic mapping reviews are particularly relevant when a line of inquiry has been underway but not yet been organized and evaluated. Such organization helps guide scholars in future inquiry (Grant & Booth, 2009). Unlike scoping and systematic reviews, which evaluate the size, scope, and quality of the evidence base, systematic mapping reviews are not primarily concerned with assessing the strength of findings and concluding optimum interventions.

For this review, we followed a five-step process as outlined in Figure 1. The protocol for this study was developed based upon the processes documented in Hooper et al. (2013) which drew upon protocol development suggested by the Best Evidence in Medical Education Collaboration (Hammick et al., 2010).

Figure 1

The Systematic Mapping Review Process
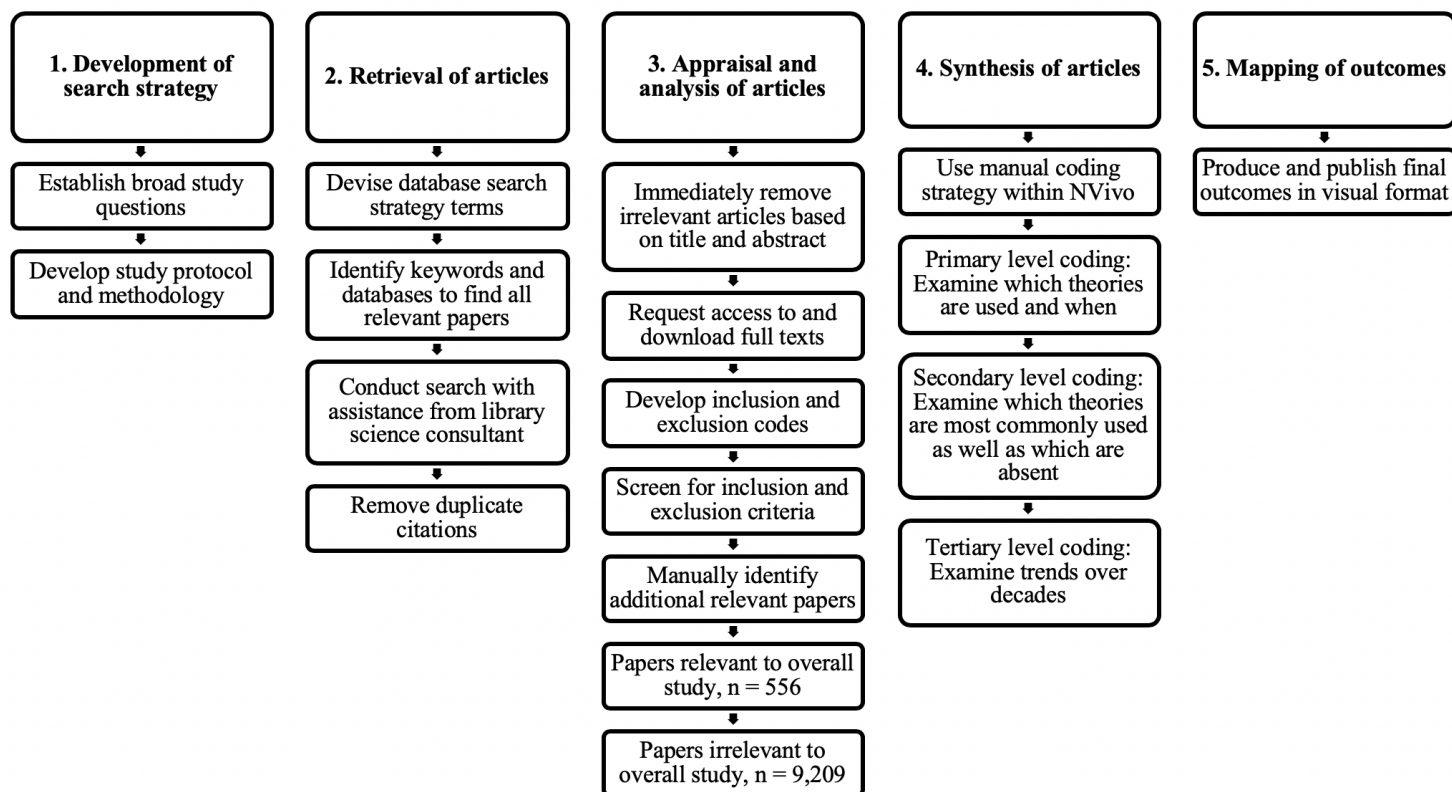
The first step in systematic mapping reviews is to establish research questions, which in this study included purposefully broad study questions to allow the researchers to cast a wide net for exploration of papers. The study questions included: What theories have been evoked in occupational therapy education over the last seventy-five years? What themes have emerged throughout the scholarship regarding the use of theory supporting both education and practice?

The second step involved retrieving the articles by developing and conducting a search strategy. The publication dates for the search were ultimately determined as 1940-2015. Following a preliminary search without date restrictions, we discovered it was virtually impossible to recover any texts published on occupational therapy education before 1940. The 1940-2015 timeline was adequate to capture historical trends. International papers published in English were included.

A clinical resource librarian performed the database search. The following databases were searched for papers relevant to occupational therapy education from 1940 to 2015: Medline (Ovid), Embase, SCOPUS, CINAHL, PsychInfo, ERIC, Cochrane Library, Web of Science, and Academic Search Complete. The full electronic search strategy for Academic Search Complete was as follows: ("occupational therapy" OR "occupational therapies" OR "occupational therapist" OR "occupational therapists" OR "OT") W2 (education* OR curriculum* OR teaching OR student. The researchers elected not to include "theory" as a search term. Using theory as a search term would have narrowed papers to those in which theory was a main topic. In order to address the research questions, we needed to examine papers that not only examined theory as a main topic, but also those that simply alluded to theory, both small-t and Large-T theories. Papers that alluded to theory, as if in passing, could inform us about the use of theory over time. Therefore, we decided to keep the search wide and use a subsequent screening process to cull papers for the presence of theory. A total of 15,873 citations were collected, including 6,173 duplicates and 9,700 unique citations. A manual search strategy was performed by the research team to confirm all relevant papers were identified; this yielded five additional papers.

The third step involved screening a portion of papers to develop inclusion and exclusion criteria (found in Table 1). This step helped cull the collected papers for those that represented how theory was portrayed and used, the exclusive interest of this study. Papers that did not address theory were excluded. For example, papers that explored the demographic characteristics of educators, or student and faculty perceptions of academic-related topics were excluded. Using the finalized selection criteria (Table 1), two members of the research team (RH and ST) screened the papers and excluded a total of 9,149 papers, leaving 556 papers. The primary reason for excluding such a substantial number of articles was simply a global lack of reference to any theory.

Table 1

Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
Teaching methods	School-based occupational therapy
Interdisciplinary education	Education not mentioned in title or abstract
Cultural effectiveness and awareness	Demographic characteristics of educators
Curriculum	Patient education
Fieldwork	Continuing education
Student evaluation, and student learning outcomes	Student and faculty perceptions of academic-related topics
Theoretical content	
• Related to education	
• Related to practice	
Student learning	
• Student learning outcomes	
• Student perspectives and attitudes	

The fourth step involved data extraction from the included papers. The data extraction tool was modified from one originally developed by Hooper et al. (2013). The original tool, created to thoroughly assess educational literature, map themes, and identify primary approaches, was simplified by the authors to allow for more efficient and streamlined screening of 556 papers for theory specifically. The main modifications of the data extraction tool included the removal of screening sections related to evaluation, faculty issues, level of investigation, and strength of findings. This review did not focus on research findings but on representations of theory. Representations of theory were spread throughout sections of the papers, not just within findings. The final data extraction tools examined the following variables: paper type (e.g., peer-reviewed, editorial), educational content (e.g., curriculum-related, student-related, teaching methods), focus of research (e.g., undergraduate, graduate, fieldwork), purpose (e.g., learning, practice, or teaching improvement), theoretical content (i.e., education-related or practice-specific), and emphasis given to theory (i.e., background, foreground, or not present). The subcategories within each screening criterion, which were mutually exclusive, are defined in Table 2. It should also be noted that a theory was considered by the authors as "referenced" if the theory was informally discussed, briefly mentioned in some capacity, or formally cited with the original work and included in the reference section.

Table 2

Coding Criteria

Code	Subcategory
Paper type	Peer reviewed: the paper was published in a peer reviewed journal such as the *American Journal of Occupational Therapy*
	Editorial: the paper was published in a magazine such as *OT Practice* or individually as a statement piece
Educational content	Curriculum-related: the paper's primary focus was coursework, curriculum design, or any topic related to the content of what was being taught
	Student-related: the paper's main focus was student perceptions, student preferences, or any topic related to the students receiving the education
	Teaching methods: the paper's primary focus was various strategies of teaching or anything related to the delivery of the content being taught
Research focus	Undergraduate, graduate, fieldwork, or unknown: based upon the information typically stated in methods or introduction sections
Purpose	Learning: the paper in some capacity stated that the goal of the research was to improve student learning
	Practice: the paper's primary goal was to improve practice skills of future clinicians
	Teaching improvement: it was stated that the aim of the paper was to improve effective teaching methods
Theoretical content	Education-related: the theory was developed within the context of education (e.g., humanism, critical consciousness)

The same two researchers who screened the papers also coded using the data extraction tool. The researchers met frequently to discuss disagreements and discrepancies, ultimately arriving at coding decisions together. We used NVivo, a qualitative data analysis software, to code each paper. We approached coding in three

levels. The primary level coded for the identification of theoretical content, and 62 papers were coded with the "theoretical content" code, meaning that the paper referenced or discussed either practice or education related theory in the foreground or background. If a paper was deemed to convey theory, a secondary level of coding was conducted. This level of coding included the use of NVivo to assess the frequency of references to theory. The researchers also manually noted how each theory was referenced and the context in which it was portrayed. In the process of data extraction, it was discovered that there were prevalent theories, such as social learning and role acquisition, that could potentially be categorized as both an educational theory and an occupational therapy-specific clinical practice theory. Therefore, theories that initially met criteria for both categories were coded based upon the specific context in which it was used. For example, a paper that utilized social learning theory to guide the structure and content of a course was coded as an educational theory, while a paper that utilized social learning theory as a central component of a mental health intervention was coded as a practice-specific theory. Our approach did not originally anticipate this overlap, and the authors elected to include both theoretical categories in the final mapping visual.

Finally, tertiary coding occurred through the identification of trends over decades. Trends and patterns were analyzed according to the frequency of references and the years during which the references of theories were made. The fifth and final step involved mapping the outcomes and creating a bubble chart, which is similar to both a proportional area chart and a scatterplot. Each theory was assigned a unique color, and bubbles were then mapped onto the axes (frequency and year of reference).

Results

Results indicated a general underrepresentation of both practice and education theory within occupational therapy education literature. Of the 556 papers coded, a total of 11% (n = 62) referenced theory. Of the 62 papers referencing theory, established social science theories, both practice and education-related, were most prominent, with occupational therapy-specific theory emerging in recent decades. Furthermore, when theory was referenced, it was typically treated as a footnote to the main discussion rather than a focal point. The most prevalent theories not specific to occupational therapy included sensory integration, dynamic systems, role acquisition, social learning, and experiential learning. As seen in the visuals below, there have been increased representations of theory supporting education and practice over time.

Theory Addressed as a General Background and Foreground Concept

Of the 62 papers that represented theory, 4.6% (n = 26) included theory as a background component, meaning that theory had in some capacity served a minor role either in guiding the educational endeavor or structuring the topic of study. An example of a paper coded with theory referenced in the background was a study entitled "An explorative study of an emerging practice clinical education program for occupational therapy students" through which Li-Tsang et al. (2009) implicitly utilized experiential learning and problem-based learning to explore students' learning processes during an emerging clinical education experience.

Papers that included theory in the foreground, meaning that theory was one of the central components of the paper, comprised 6.4% (n = 36) of all papers. An example of a paper coded as one with theory in the foreground was a study entitled "Application of humanistic learning theory in an associate degree program for occupational therapy assistants" in which Bloss-Brown and Schoening (1983) described their method of applying the humanistic learning theory to enable students to reach their full potential and to improve students' ability to engage with patients in crises. Of the 36 papers including theory within the foreground, 16 mentioned theory in the context of either occupational therapy or social science as a general concept rather than specifying particular, individual theories. For example, one purpose of the educational scholarship was to address students' integration of "theory and practice." Therefore, the loosely used and broad concept of theory was highlighted as essential but without further detail. In other words, most papers addressed the need to bridge the theory-practice gap, yet the references to theory remained vague, broad, and did not refer to specific theories.

Practice- and Pedagogy-Specific Theory
Approximately 7.7% (n = 43) of papers made reference to practice theories, both generally (non-specified) and specifically. Practice-specific theories most prominent in the literature included sensory integration (n = 6), role acquisition (n = 4), and psychosocial development (n = 2). Thus, when specific theories were cited in the context of occupational therapy practice, a substantial amount of the time they were borrowed, established social science theories such as psychosocial development. Regarding emphasis of theory, 5.7% (n = 32) of papers referenced a practice theory at the forefront of the paper while 1.9% (n = 11) referenced theory in the background. In the two figures below, the prevalence of both pedagogy- and practice-specific theory in occupational therapy education literature are represented by bubbles across the timeline of 1940-2015. The size of each bubble correlates with the frequency of articles that reference such theory. Each graph provides a legend which contains a color assigned to each unique theory. All 62 articles are represented in these figures.

Regarding pedagogy-specific theory referenced within the literature (see Figure 3), 4.3% (n = 24) of papers referenced non-specified or specified use of theory. Furthermore, of the 24 papers referencing pedagogy-specific theory, .08% (n = 5) of papers referenced theory at the forefront, while 3.4% (n = 19) referenced theory in the background. Pedagogy-specific theories most prevalent in the literature included social learning (n = 11), experiential learning (n = 4), constructivism (n = 3), and role acquisition (n = 2). Like practice-specific theory, pedagogy-specific theories were established in other fields and imported for occupational therapy education.

Figure 3
Pedagogical Theory Referenced within Occupational Therapy Education
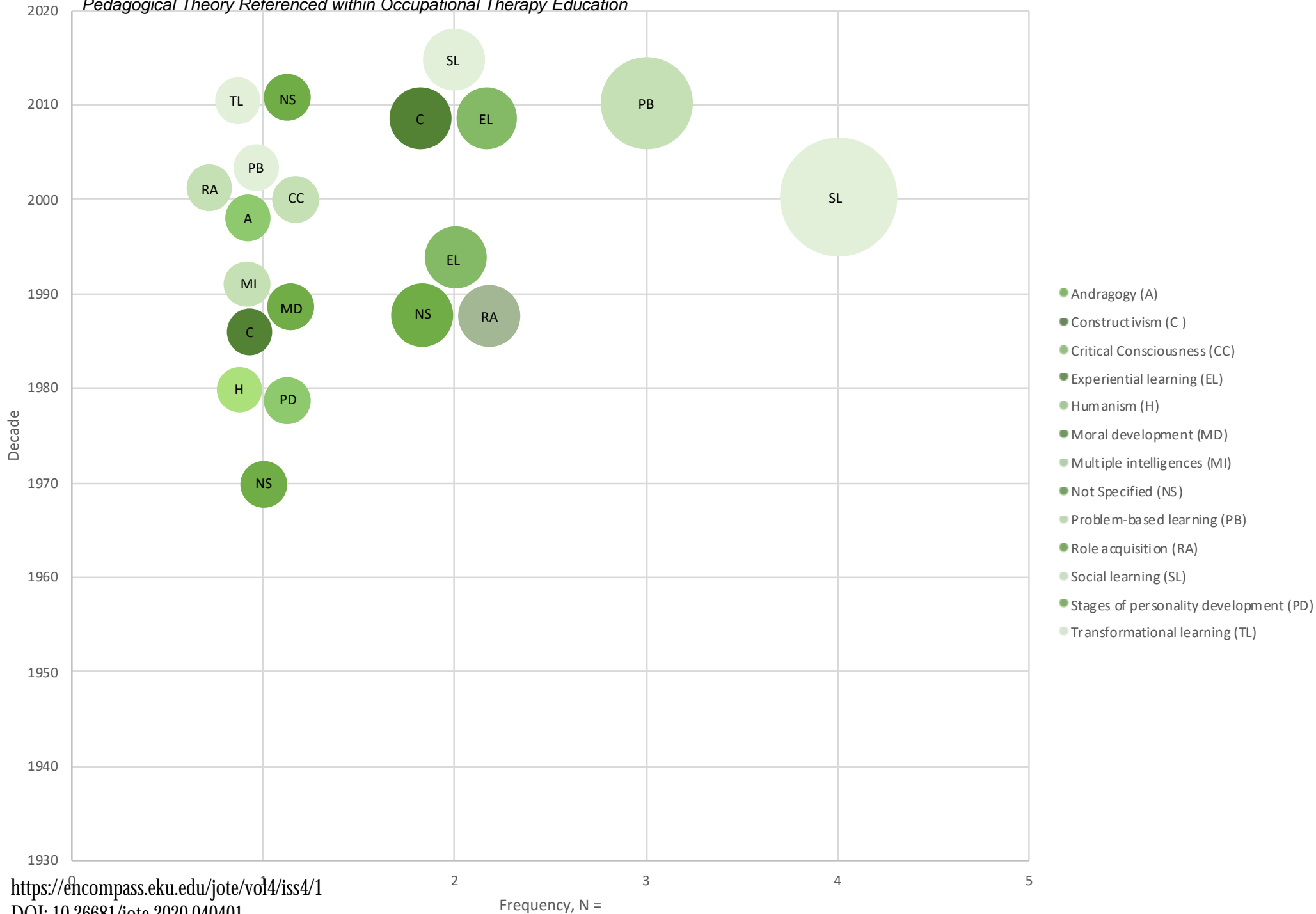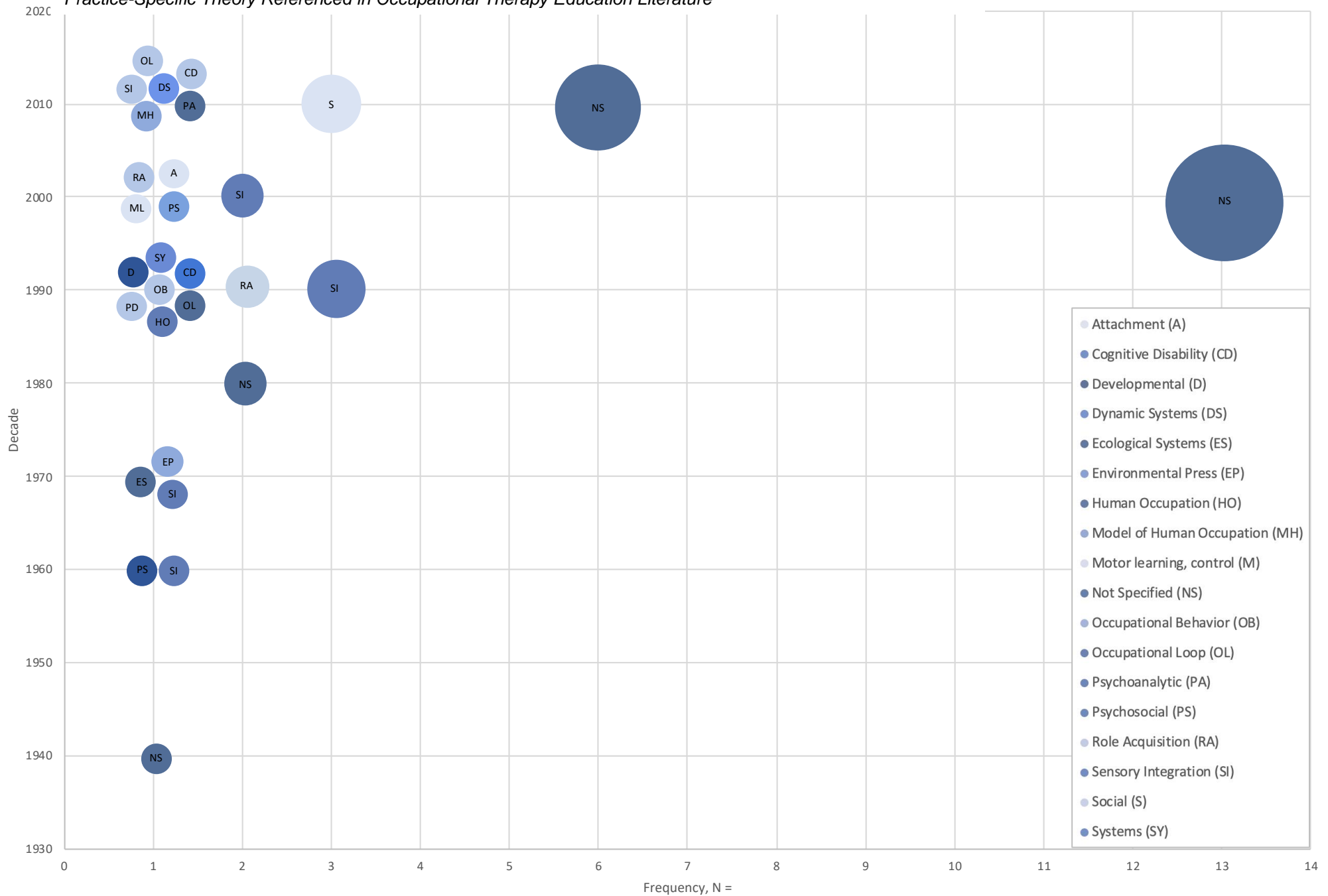
Figure 4

Practice-Specific Theory Referenced in Occupational Therapy Education Literature

A pattern worth noting is the difference in the way in which theory was referenced in a practice context versus an educational context (see Figure 4). Of the 26 total papers that referenced theory as a background component, meaning that theory was not mentioned in the article title or abstract, a majority (73%) of papers referenced theory in the context of educational. In contrast, 42% of papers with theory mentioned in the background referenced occupational therapy practice theory (four papers overlapped, mentioning both categories). Contrastingly, when theory was referenced in the foreground, 13.8% of the time it was in relation to educational theory, while 88.8% of the time it was in reference to occupational therapy practice theory. This implies that occupational therapy practice theory was more often explicitly mentioned in the foreground than educational theory.

Discussion

The purpose of this review was to evaluate the representation of theory related to both practice and pedagogy in the education scholarship in occupational therapy. Results indicate that representations of theory supporting both pedagogy and practice have increased regarding presence in the educational literature. The increase since the 1940's may reflect the growing realization of theory's critical role in the profession (Finlayson, 2007; Kielhofner, 2009). Despite the increase, however, and despite a substantial amount of literature promoting the importance of learning and utilizing theory, the extent to which educational literature explicitly acknowledges, discusses or applies theory is limited (Elliott et al., 2002; Ikiugu, 2010; Steward, 1996). That is, in the papers reviewed for this study, theory was mentioned only in a small percentage, suggesting an ongoing gap in the education scholarship teaching students about practice theory and in explicating education theories for teaching and education research.

In order for occupational therapists to understand their unique professional identities, comprehend their clients' occupational needs, and formulate appropriate and effective interventions to solve clients' problems, therapists must have a solid conceptual foundation, which includes theory generation and application (Kielhofner, 2009). Therefore, an important line of scholarship for occupational therapy education is how to convey theory in such a way that it informs the processes of evaluation, intervention planning, and intervention. However, Hooper et al. (2018) articulated challenges to moving forward inquiry related to education theory: if a disproportional emphasis is placed upon outcome-driven methodologies, randomized control trials, and efficacy research, theoretical and philosophical inquiry can become a diminished priority. In order to achieve a balance of philosophy, theory, and history with methodological inquiry of efficacy and effectiveness, this entire scope of inquiry must be viewed as interconnected and symbiotic (Hooper et al., 2018). Further, generalizability can be an issue in occupational therapy education research because studies are often context specific and based upon local learning situations to broaden scholarship on theory. Hooper (2016) proposed merging the two research agendas – one for occupational therapy and one for occupational therapy education – published by the American Occupational Therapy Association (Hooper, 2016). Based upon Hooper's proposed matrix (utilized to identify where specifically a particular study is situated within this

fused agenda), this systematic mapping review is positioned within the intersection of theory-building and education policy and systems research. This study highlights a need for education scholarship that studies teaching both "small-t theory" and "Large-T Theory" at the training stage. Otherwise, students will consequently not be prepared for application later in practice (McColl, 2003).

Despite the possibility that our search did not capture every piece of literature, we were, nonetheless able to use our analysis of 556 papers to suggest that approximately only 11% of the literature considered theory in some capacity. It should be noted that this percentage is a combination of two similar yet distinct subgroups of theory: occupational therapy education theory and occupational therapy practice-oriented theory. We also acknowledge that theory is not always utilized as often as it could be in occupational therapy education (e.g., courses dedicated to logistical fieldwork preparation, interactions with standardized patients, or additional clinical or community experiences). Further, faculty may not feel that theory is relevant or necessary to their specific course or lecture, and it is within their discretion whether or not incorporation of theory would enhance the learning experience and outcome.

Limitations
The scope of this review was limited in that it focused only on the topic of theory, which was specifically differentiated from frames of reference, models of practice, and frameworks. Due to the nature of our search strategy, there is an inherent possibility that we did not include all relevant papers. Any papers published before 1940 were difficult to locate due to the fact that many of them remain only in libraries across the world in physical form and have not been published online (which in part led to the selection of the specific years for our search). Restricting the search to English literature may have also limited our search results. Additionally, our ability to access abstracts and full texts impacted the amount of data retrievable from each paper. The older the paper, the more difficult it was for the abstract, online, or physical full text copy to be procured. Therefore, it is also possible that theories were missed which were mentioned outside of abstracts of papers to which we did not have access.

Implications for Occupational Therapy Education
These data illumine the need for ongoing and increased theory building and the consideration of historical context. Theory is recognized as essential to the occupational therapy student's education, and educators should therefore be more explicit with their theory use. Explicitly connecting pedagogical theories to curriculum design, instructional strategies, assignments, and learner assessment can clarify and integrate student learning. Pedagogical theories can assist occupational therapy educators in developing experiences which are aligned to facilitate achieving intended learning outcomes. Occupational therapy educators may also benefit from introducing the context surrounding each theory's historical use (e.g., its past trends and impacts on education and practice, the developers and their backgrounds, year it was first introduced, etc.). Educators must also strive to stay updated on their knowledge of theory, as our data demonstrate that theory representation and application evolve over time. More research is needed to examine the quality and strengths of findings of existing literature regarding

theoretical representation, as our review solely mapped the literature's current state. Finally, our study highlights the unique combination of occupational therapy-specific theory and theory drawn from psychological and life sciences. Acknowledging both origins is important for occupational therapy practice and pedagogy.

Conclusion

A comprehensive, historical review of the use of theory allows for a more thorough examination of past scholarship in order to better orient occupational therapy scientists and educators to the field's present state. It has been argued that because occupational therapy education is in its infancy, there is a tendency to overlook the importance of philosophical exploration and theory-building (Hooper et al., 2018). Theory has the potential to enrich both professional education as well as practice by strengthening the conceptual foundation. While it is neither expected nor necessary that occupational therapy education literature be saturated with theory as the predominant subject matter, it is recognized as an essential feature of the content taught, the practice of education, and the framework for education research. This review demonstrates the degree to which authors have included theory in scholarship related to or about practice and education. Rarely do continuing education experiences revisit theory, yet it still impacts latest evidence and maintains a place in the practicing arena. It is imperative that future occupational therapy education research prioritizes a paradigm shift toward a deeper valuing of theory. In order to produce effective occupational therapists with a foundational knowledge base, comprehensive educational training, and sound clinical reasoning, it is critical that educators embed theory and theory application throughout the entire occupational therapy curriculum. Occupational therapy education is considered the bellwether of practice, and it is crucial for Large-T Theory to comprise more than 11% of the foundational preparation which guides students on their path to practice.

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