

Howarth, Joan ORCID: <https://orcid.org/0000-0002-8769-6607> , Morris, Karen ORCID: <https://orcid.org/0000-0001-9272-4994> and Cox, Diane ORCID: <https://orcid.org/0000-0003-2691-6423> (2017) Challenges of teaching occupation: introduction of an occupation focused teaching tool. *Journal of Occupational Science*, 25 (1). pp. 142-148.

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## Abstract

Occupational science is of importance to multiple disciplines due to its potential to contribute the understandings of complex social issues. "Occupation", as a key concept of occupational science, is recognised as being highly complex. This can result in it being challenging for students to develop a comprehensive understanding of occupation as a concept.

Terminology of occupational science literature has been noted at times as using the terms occupation, purposeful activity and activity interchangeably; further adding to the challenging of teaching the concept of occupation. This paper explores evolving definitions of occupation, challenges this has created within education, and the potential use of occupation as a threshold concept. Consideration of a selection of pedagogic methods used in teaching the concept of occupation is briefly explored. The paper concludes with identification of a newly developed occupation focused teaching tool as a proposed alternative approach to teaching the concept of occupation. The teaching tool was originally developed to teach the discrete concept of occupation in occupational therapy education. The tool was not designed for developing understanding of the therapeutic use of occupation. The teaching tool is an analogy for occupation, and has utility in supporting the transformation of students understanding of the concept of occupation, commensurate to understandings of occupational science.

Occupation    Education    Challenges    Teaching Tool

The Journal of Occupational Science launched a new section for publications, inviting papers focused on how occupational science and the concept of occupation is, and can be, taught

(Hocking, 2016). This paper acknowledges the importance of multiple disciplines developing an understanding of occupational science. It focuses specifically on education regarding the concept of occupation; explores some of the challenges of teaching occupation as a concept, including the complexity of occupation and interchangeable use of terminology. A selection of pedagogic methods used in the teaching of occupation is considered, and an introduction to the rationale and provision of an occupation focused teaching tool is presented. The teaching tool was designed to develop students' understanding of occupation as a discrete concept. Although created for use in occupational therapy education, the tool was not designed for developing understanding of the therapeutic use of occupation rather the concept of occupation. Thus, whilst use of the teaching tool in occupational therapy education is considered in this paper, use of the tool in teaching the concept of occupation as understood within the discipline of occupational science is presented. The form, function and impact of the occupation focused teaching tool are currently under critical pedagogic investigation as the subject of a larger PhD study (Howarth, unpublished).

### Occupation Focused Education

Hocking & Nicholson (2007) identified the introduction of the International Classification of Functioning, Disability and Health (WHO, 2001) as resulting in the necessity for all health professions to have an understanding of the occupational impact of health conditions, and be able to conceptualise their own work in terms of occupational participation. Yerxa (1993) identified occupational science as being "... the study of the human as an occupational being" (p. 3), with the ability to contribute multiple understandings regarding the relationship between occupation and health. However, this relationship is also acknowledged as not being the only concern of occupational science (Yerxa, 1993). Wicks & Jamieson (2014) highlight the contribution occupational science can make to understanding complex social issues, whilst Urbanowski, Shaw and Chemmutut, (2013) discuss its contribution to the wider development of public policy. Thus, occupational science, as an interdisciplinary science, is of concern to students from multiple disciplines, in a variety of diverse contexts (Hocking, 2016). Occupational therapy is one such profession, utilising

occupation as both the method and the outcome of intervention (Crabtree, 1998; World Federation of Occupational Therapists, 2016).

Hocking (2009) identified that students who develop a more comprehensive understanding of occupation also develop a greater understanding of the interdependent relationship between occupation, health, well-being and life satisfaction. Thus, occupational scientists and therapists that develop greater depth of understanding will be better placed to appreciate the individuals they work with, and enhance their ability utilise occupation. Whilst Hocking (2009) advocated for research to be undertaken to explore discrete forms of occupation, in later work she advocated for a greater understanding of the concept of occupation in and of itself (Hocking, 2016). However, recent research acknowledges that occupational therapy lecturers can find it challenging to teach the concept of occupation (Di Tammaso, Isbel, Scarvell & Wicks, 2016). A variety of reasons that create these challenges exist, one of which is occupation's highly complex nature (Di Tammaso, et al, 2016).

### Toward a Definition

When defining occupation authors have expressed difficulty in clarifying what occupation is without losing elements of the dynamic, multidimensional nature of the concept (Krishnagiri, Hooper, Price, Taff & Bilics, 2017). As a result many definitions of occupation exist with occupational science and occupational therapy literature. These definitions have revealed that occupation is influenced by temporal aspects and by social, cultural and historical context (Hocking, 2009). Occupation is understood to shape and create identity (Christiansen, 1999), and has a relationship to health (Wilcock, 2006), well-being and life satisfaction. Examination of these and other definitions (Wilcock, 1993; Trombly, 1995; Stone, 2003; Abrahams, 2008; Russell, 2008) reveal a growing understanding of what occupation does and what it can provide to individuals and societies.

Whilst these definitions allow for insights into what occupation does they do not define what occupation is. It is noted that authors who present definitions of occupation within occupational science and occupational therapy literature are, in the main, occupational therapists. As the foremost concern of occupational therapy is the therapeutic use of occupation, it is therefore unsurprising that much focus of research has been the exploration of how occupation can be used to positively influence health (Dickie et al.,

2006). This may provide some explanation as to the multiple definitions focused on the influence of occupation rather than definitions of the specific concept itself.

Pierce (2001) identified occupation as "... a specific individual person's personally constructed non-repeatable experience" (p. 139). She recognised that whilst the occupation itself can be observed, the understanding of the subjective meaning is difficult to identify by anyone other than the individual undertaking the occupation. An alternative definition identified occupation as "... a dynamic relationship among an occupational form, a person with a unique developmental structure, subjective meanings and purposes, and a resulting occupational performance" (Nelson and Jepson-Thomas 2003, p. 90) This definition is acknowledged by the authors as abstract and requiring further explanation. However, what can be identified in both definitions is recognition that subjective meanings are attached by individuals to create their occupations. This results in occupation being a subjectively determined experience. This adds to the challenge of enabling students to understand when something is an occupation is and when it is not.

### Interchangeable Terminology

In 1998, Golledge acknowledged occupational therapists have used the terms activity, purposeful activity and occupation interchangeably throughout occupational therapy's history. This interchangeability has resulted in confusion in the use of terminology. This further adds to the challenge of enabling students to understand what occupation is and its' difference from the other terms. The emergence of occupational science has furthered the knowledge and understanding of occupation and its' relationship to humanity. Through this, attempts to separate the definitions of activity, purposeful activity and occupation have grown (Pierce, 2001; Reed, Hocking and Smythe, 2010). However, there remains no agreed defining or differentiation of the terms within occupational science or occupational therapy. This lack of clarity of agreed definitions results in students not being taught one predominant conceptualisation of occupation that can be applied to all forms of human occupation. Availability of multiple definitions facilitates multiple understandings and insights into the complexity of occupation. This results in the notable challenge for education with the core concept of occupation remaining "... a just-out-of-sight subject"

(Hooper, 2006, p. 558; Krishnagiri, et al., 2017). In an attempt to redress this problem Price, et al (2017) identified “... concepts from education literature ... that could support teaching occupation as a way of seeing” (p. 6), one of which is the use of threshold concepts.

### Occupation as a Threshold Concept

Meyer (2010) explained threshold concepts as providing an analytical framework that enables a concept to be viewed in a transformed way. The transformation in learning opens “a new and previously inaccessible way of thinking about something” (Meyer and Land, 2006, cited in Meyer, 2010, p. 204). This allows a student to begin to explore and understand a subject differently. A student can then gain understanding from the perspective of a specific discipline (Hooper, 2008).

Sadlo (2016) advocated for the recognition and use of threshold concepts in occupational science education. She (2016) identified threshold concepts “as fundamental concepts that are identified by experts as essential to the learning and understanding of any subject” (p. 497). However, Sadlo’s (2016) paper is a development of previous literature concerned with human systems that facilitate occupation rather than with consideration of occupation itself as a threshold concept.

Fortune and Kennedy-Jones (2014) also discussed the importance of threshold concepts, exploring their use in occupational therapy education as a mechanism to facilitate students to think “...in an occupational way” (p. 297). Whilst they highlight the importance of understanding the concept of occupation their discussion focuses on the use of an occupational perspective of health as being the threshold concept (Fortune & Kennedy-Jones, 2014). The rationale presented is that, as the area of concern for occupational therapy is the relationship between occupation and health, it is that relationship that needs to be the threshold concept. Occupation is identified simply as one of many surrounding concepts required to understand the threshold concept advocated.

Alternatively, Hooper, Krishnagiri, Price, Bilics, Taff & Mitcham (2014) discussed the importance of clarity of a profession’s core subject in education, and advocated for clarification of the difference between a core subject and additional topics. Hooper et al (2014) cautioned that “when a profession’s central concern or core knowledge is obscured,

students fail to grasp it” (Hooper et al 2014 p. 189). This leads to a dilemma as to whether occupation as a discrete concept, or occupation and its relationship to health should be the core concept in occupational therapy. Whilst recognising this requires ongoing research and discussion, it remains that occupational therapy students require development of a comprehensive understanding of occupation to then utilise it therapeutically (World Federation of Occupational Therapists, 2016).

### Complexity of Occupation and Pedagogy

Entwistle (2009) identified understanding as distinguishable from simply having knowledge of a subject. The development of understanding allows an individual to retain and use knowledge of a subject flexibly, and apply it within novel situations (Entwistle, 2009; Newton, 2012). For understanding to progress, conceptual development has to take place.

Fry, Ketteridge and Marshall (1999) noted that conceptual development occurs when students engage with deep, or transformational, learning. Factual knowledge needs to be learnt within the context of personal experience. Students then need to become actively engaged with the subject to enable them to make sense of the facts within their own experience. Wilcock is cited as having identified that “... an occupational philosophy of education ... required acknowledgement and integration of students’ prior learning” (Hocking, 2016, p. 484). This concurs with the work of Hooper et al (2014) who, in addition to advocating the use of occupation as a threshold concept, also identified the importance of transformational learning to be facilitated. In order for transformational learning to be designed, consideration of different forms of pedagogy is necessary.

A variety of pedagogies have been employed to teaching the concept of occupation in occupational therapy education, including didactic, experiential, and problem based learning methods (Hooper, 2006). Didactic teaching methods utilise a lecture format, which is identified as a way to transmit knowledge (Sadlo, Piper & Agnew, 1994). Experiential learning requires students’ active participation in learning activities. Problem based learning advocates that students be given a problem that can be encountered in a practice setting about which they have to investigate a solution (Sadlo et al., 1994). Whilst each of these pedagogic methods can aid in the learning process, each has its’ limitation when teaching a discrete complex concept such as occupation. Didactic education through a lecture format

enables the transmission of knowledge; however, the learning undertaken by the students is noted as being passive due to the one-way communication (Light, Cox & Calkins, 2009). The transmission of knowledge is not ensured and whilst it can enable the learning of facts it is noted as not facilitating the development of understanding of a subject (Newton, 2012).

Experiential learning requires students' active participation in learning activities and aims to enable knowledge development through the lived experience (Kolb, 2015). Occupational therapy students participate in a range of activities such as cooking, gardening and art during their education programmes. Whilst active learning encourages student discussion, reflection and questioning (Sadlo et al., 1994), transferring the understanding of one activity to another may be challenging. In addition, due to the acknowledged subjective nature of occupation there is no certainty that the activities students participate in are occupations for them. Thus students are being directed to participate in activities as a learning experience and may be confused by the term if the learning activity is not experienced by them as an occupation.

Problem based learning (PBL) advocates for students to be set real-world problems for investigation and resolution (Sadlo et al., 1994). Whilst PBL can facilitate learning in relation to considering the solving of problems and identification of appropriate interventions, it does not focus student learning on development of knowledge and understanding of an abstract concept. In utilising these methods of education information is either simply transmitted to students, or through experiential or PBL, focuses learning on discrete forms of human occupation at any one time.

The challenge of occupational therapy education is not for students to develop knowledge of discrete occupations or simply to develop the ability to problem solve challenges in occupational performance. Rather occupational therapy students need to develop knowledge and understanding of all forms of human occupation in order to learn to analyse how problems in occupational performance occur. Greater understanding of occupation will enhance students' ability to then consider how occupation can be used therapeutically to positively impact health and well-being (Hocking, 2009).

An alternative approach

An alternative approach for development of conceptual understanding is to enable a student to have a working model of occupation in their mind. Students have been noted as finding it beneficial when they are supported to create a visual representation (Newton, 2012). This results in an ability to articulate and make predictions regarding the concept (Newton, 2012).

To construct an accurate model, students need to develop knowledge of the defining features that collectively create the concept. Entwistle (2009) identified that “To be able to do this, we need to have experienced the variations that make up the characteristic features of the concept” (p. 17). An advantage of occupational science, and therapy, education is that as humans are occupational beings, all students come to their education with multiple, varied experiences of occupation. Students then require support in learning and analysing what the characteristics, or defining features, of occupations are. However, as a defining feature of one occupation can appear to be notably different to the defining feature of an alternative occupation, it can initially be challenging for students to assimilate multiple different elements and recognise them as being the same defining feature. For example, the physical environment of a kitchen required for the occupation of baking is notably different from the physical environment of a tennis court required for the occupation of playing tennis. Providing students with terminology such as physical environment and explicitly identifying it as one of the defining features of occupation may enable students to attach variations of their prior knowledge to each term presented. This can result in students developing understanding that whilst physical environments themselves vary, a physical environment is a defining feature of an occupation. From this perspective occupation can be explained as being constructed from the combination, and dynamic interplay, of multiple defining features. Students can be facilitated to gain knowledge of the multiple defining features of occupation. Once gained, students can be facilitated to explore the interconnectedness of the multiple defining features that together make up the concept of occupation.

A challenge of this approach is the notably large number of defining features that together create occupation; how to enable to students to gain knowledge of each of them before beginning to explore the interconnected relationships and influence they have on each other. In recognition of this, and other challenges previously discussed, an occupation

focused teaching tool has been developed (Howarth, conference paper, 2016). The tool was developed with the aim of facilitating the development of knowledge and understanding of occupation as a discrete concept. Whilst originally developed for use in occupational therapy education, the teaching tool was not developed for education regarding the therapeutic use of occupation.

The occupation focused teaching tool is a physical entity that acts as an analogy for occupation. It provides students with a visual representation of occupation as a concept, to support their knowledge development. The use of analogies in education has been identified as effective for supporting students' development of conceptual understanding (Newton, 2012). Halpern, Hanson & Riefer (1990) identified that use of an analogy facilitates the transfer of relationships between the known and the unknown. Therefore, the teaching tool can enable students to draw on their prior knowledge of occupations, transfer it to the understandings occupation as recognised within occupational science, thus transforming their understanding of occupation as a concept.

Use of analogies has also been noted as beneficial in assisting students in managing large quantities of information; reducing the mental capacity required (Newton, 2012). As occupation is created by the dynamic interplay of multiple defining features, design of the teaching tool aimed to reflect this. Thus, the tool consisting of multiple independent components, each representing one defining features of occupation. The dynamic functionality of the tool enables occupation to be broken down into its multiple defining feature. When used in teaching, all the components that represent the defining features of occupation can be individually considered. As the defining features are considered they can be constructed together resulting in the presentation of a holistic representation of occupation in its complex form. The form of the teaching tool was carefully considered with the aim of developing a tool that could represent and facilitate explanation of all forms of human occupation.

A previously published definition of occupation was utilised to form the basis of the teaching tool (Nelson & Jepson-Thomas, 2003). The definition enabled a deconstruction of occupation to be expanded and developed. The physical design of the teaching tool reflects

the dynamic nature of occupation in that there is no set order in which to consider the many defining features. Therefore, on each occurrence of use, the teaching tool can support consideration of the defining features in a different order. This enables development of understanding of how the many defining features come together in chaotic form to create unique occurrences of occupation (Nelson & Jepson-Thomas, 2003).

The teaching tool additionally allows for differentiation of the terms activity, purposeful activity and occupation, whilst enable students to recognise the inherent relationship between the terms. Thus, occupation focused teaching tool supports the students' creation of a mental model of occupation as a concept, which maintains the dynamic, multidimensional nature of the concept (Krishnagiri, et al., 2017).

### Conclusion

Zemke (2016) identified occupational science as being able to contribute to addressing complex social issues; for this to be achieved everyone requires an elementary introduction to the subject (Hocking, 2016). However, the concept is recognised as challenging to teach due to the complexity of occupation, its' subjective nature, and the historic interchangeable use of terminology. In recognition of the challenges it is therefore necessary to turn "... our collective attention to pedagogic concerns" (Hocking, 2016, p. 484) and consider a variety of questions, one of which is regarding "How is occupation itself (not occupational science) taught and learned?" (2016, p. 485). Price, et al., (2017) focused on the teaching of occupation within occupational therapy education advocating for subject centred curricula; use of the concept of occupation as a threshold concept and use of pedagogic methods that can support transformational learning.

The occupation focused teaching tool introduced in this paper provides an alternative approach to teaching of the concept of occupation. The utilisation of the teaching tool, as a dynamic visual model, can support transformational learning. This is further aided by the teaching tool's facility of allowing students to manage large quantities of information, as well as apply their prior knowledge to their learning.

Designed with the aim of developing students' knowledge and understanding of the discrete concept of occupation, rather than the therapeutic use of occupation, the teaching tool has utility in teaching the concept of occupation as understood within the discipline of occupational science as well as the profession of occupational therapy.

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