Learning Styles: Problem-based Learning (PBL) Amongst Occupational Therapy Students

This essay will explore the importance of learning styles, and critically evaluate the use and appropriateness of problem-based learning (PBL) amongst Occupational Therapy students. I will explore the significance of adult learning and its relation to the way in which Occupational Therapy students gain knowledge, as well as making useful links between problem-solving as a process and PBL. This essay aims to connect all these aspects and investigate whether they impact and have relevance to Occupational Therapy as a profession.

“Learning is described as the process whereby knowledge is created through the transformation of experience” (Kolb 1984, as cited in Brown et al, 2008). Individuals can use learning to manage and adapt to everyday situations, and as individuals are unique in nature, this has given rise to many different styles of learning. Unfortunately, learning is a complex entity, whereby environmental, organic and motivational factors can all impact (Hagedorn, 1995), however many theorists have still dedicated exploration into this field of research.

In 1907, Dr Maria Montessori was the first individual to make reference to learning styles (Marshall, 2017) and believed that every individual was unique in the way in which they learn (Faryadi, 2007). Despite mainly working with young children, Montessori identified that learners can direct themselves, and should be guided only when needed. Montessori also proposed that using materials enhanced learning, and thus recognised the importance of learning through actions. Furthermore, as cited in Faryadi (2007); “education is not what the teacher gives; education is a natural process spontaneously carried out by the human individual and is acquired not by listening to words but by experiences upon the environment.” With regards to Occupational Therapy education, this suggests that learning could be better acquired through practical, hands-on experiences. Montessori’s research provides a useful foundation for learning styles despite being mainly based on children.

Many different learning theories and models have been developed over the years, identifying different learning styles, however, one of the most influential and well recognised is that of David Kolb (Dennison, 2012). Kolb outlined his experiential theory of learning styles in 1984, where he identified four learner types based on a four-stage cycle (Kolb, 1984). Kolb’s cycle proposes that first, an individual has immediate, concrete experiences, and these serve as a basis for observation. The individual then reflects on these observations and begins to develop general theories. Abstract concepts are then formed based on such theories, and finally the learner tests these in real-life situations. From this theory, Kolb (1984) proposes a specific learning style preference based on individuals’ utilisation of these four stages: Divergers, Assimilators, Convergers and Accommodators. Kolb (1984) described divergers to be individuals who are imaginative, consider different perspectives and are interested in people. He believed assimilators to be more theoretical and interested in concepts. Convergers are individuals who enjoy problem-solving and finding practical uses for ideas, and finally accommodators who prefer hands-on experience.

Generally, it has been accepted that learning styles do have an impact on performance and achievement of learning outcomes (Cassidy, 2004), and thus understanding learning style

preferences potentially aid students to become better lifelong learners (Rudman et al, 2015). However, despite this, there are limitations and conflicting research. Due to the amount of different learning models and styles, it is likely that different tests could highlight different outcomes, causing confusion and confliction. Furthermore, often individuals are multi-modal, and therefore do not rely on just one learning method (French et al, 2007). Occupational Therapy students studied by French et al (2007) showed no significance or preference between learning styles (divergers, assimilators, convergers and accommodators); instead they demonstrated a balance across all four stages of learning.

Interestingly, Fleming (2006) proposed that a learning style is “a description of a process or of preferences” and emphasised the importance of encouraging a learner to think about the way in which they learn. Thus, learning styles are not necessarily set in stone, they rather refer to the preferential way a learner absorbs, processes, comprehends and retains information (Nunez and Valverde, 2017), and this knowledge and understanding can be useful.

Can understanding learning styles be relevant within Occupational Therapy education and the Occupational Therapy profession? Within education, teachers can often identify learning styles of students and adjust their teaching style accordingly. Dunn et al (1995) demonstrated that students whose learning styles had been recognised and accommodated for performed significantly better than those whose learning styles had not. Similarly, when learning activities match learning styles of students, this can lead to better performance (Hawk and Shah, 2007). However, what if all students learning styles are different? Despite being aware of learning style preferences, it is difficult to accommodate for all students, which suggests that students must adapt to different styles of teaching and learning. This adaptability is crucial, particularly within the Occupational Therapy profession.

Occupational Therapy is a profession that prides itself on working with clients in a holistic and person-centred way (Parker, 2013). Moreover, being aware of a service-user’s learning preference could contribute to a better therapeutic rapport, encourage engagement and positively impact on achievement. West (1987, as cited in Boneva and Mihova, 2012) posits that individuals with learning disabilities respond better and learn from visual stimuli rather than auditory or text. Within practice this information could be essential, suggesting that Occupational Therapists can adjust their assessments or interventions to suit the client’s needs; in this instance choosing to provide visual prompts instead of verbal.

Despite much research suggesting the importance of learning style preferences, it is important to note that these are not always fixed (Kolb 1981, as cited in Turesky and Gallagher, 2011), and could be developed and adapted over time. Robertson et al (2011) explored learning styles of Occupational Therapy students on placements. Interestingly, one student reported that while they usually relied on academic printed resources, on placement they were required to use a more hands-on approach. Another student expressed the benefits of observing real-life situations rather than reading about them in textbooks. Within Occupational Therapy education, this therefore implies a need for hands-on experience and real-life scenarios, suggesting that Problem-Based Learning would be beneficial in helping students prepare for work as a practitioner.

Problem-Based Learning (PBL) has become an established learning method and is often used within healthcare educational settings to enhance students’ learning (Yew and Goh, 2016). The PBL process involves a small group of individuals being provided a ‘trigger’, which is often a

problem or complex real-life scenario. The group then brainstorm ideas to grasp and understand the nature of the problem. Individuals assign each other responsibilities within the group, resolving specific aspects of the problem before meeting again to report back on their findings. This knowledge is then combined with the rest of the groups findings and is put into the context of the problem. Students are guided by a tutor, ensuring they identify and explore appropriate areas (Barrows, 1986), but essentially the onus is on the individuals and self-directed learning.

PBL is seen as appropriate for Occupational Therapy teaching and practice due to its applications to real world problems, which often do not necessarily have one simple answer (Health and Care Professions Council, 2013). Spalding and Killett (2010) and Barrows (1986) found that students were able to relate triggers to real-life scenarios, which developed their clinical reasoning skills, as well as increasing motivation and tolerating uncertainty, which they found beneficial in their learning. Hammel et al (1999) corroborated these findings amongst Occupational Therapy students, finding that communication, critical reasoning, and team-building skills all developed following PBL sessions, thus better preparing students for clinical practice.

The PBL process can incorporate aspects of Kolb's experiential learning theory (Efstratia, 2014), suggesting that the PBL approach in education can suit all learners. The trigger can be considered a concrete experience, providing basis for observation and reflection. Divergers enjoy exploring a range of perspectives and working with others and thus appear suited to this stage of the PBL process. Assimilators enjoy creating theories and hypotheses, and convergers like problem-solving; again, identifying key areas within the process in which certain individuals could thrive. Finally, pooling knowledge together and using it in a practical way to solve the problem suits accommodators.

Crucially, Hammel et al (1999) confirmed that the triggers presented to students are typically written to meet specific objectives from Occupational Therapy guidelines, which also supports the appropriateness of using PBL specifically in Occupational Therapy education. Furthermore, PBL allows for individuals to become more reflective (Holen, 2000), which is essential for Occupational Therapists in education and practice. One of the NHS's key values stipulate that staff should always be learning and improving the service (Health in Wales, 2018), and thus reflection can contribute to this. PBL sessions can encourage individuals to think about what went well, what did not, and what could be done differently next time. This is extremely beneficial within Occupational Therapy, particularly with regards to professional development.

The group setting of PBL is another positive, as this presents students with experience of working in a multidisciplinary team (MDT) (Halliwell, 2008), which is crucial for working within the Occupational Therapy profession. The PBL approach has been critiqued as group work and group dynamics can be difficult to facilitate and monitor (Burke, 2011). Some individual personalities are more dominant than others, and this could lead to inequality in participation (Hmelo-Silver, 2012; Wood, 2003). However, the presence of the tutor is essential to supervise this, along with careful planning and strong facilitation. Furthermore, it is commonly found that there are a diverse range of personalities amongst MDT meetings in practice, therefore suggesting that the PBL approach better prepares students and has real-life applications.

Despite the clear evidence implying the benefits and appropriateness of PBL in education and practice, PBL does have some drawbacks. Interestingly, McCarran and D'Amico (2002, as cited in Davys and Pope, 2006) conducted a study and found no significant difference between

one group of students who undertook traditional teaching and learning methods, compared to another group who undertook PBL. However, this was only a small-scale American study, so may not be truly representational. Moreover, although PBL has been found to develop interpersonal skills, Kirschner et al (2006) argues that it does not appear to provide enough foundation or factual knowledge that students' need for practice. However, in contrast, Spalding and Killett (2010) found that PBL does promote a clear transition from theoretical knowledge to professional practice.

Literature has also suggested that the PBL approach can often lead to increased anxiety in students (Davys and Pope, 2006). It might be beneficial to investigate whether this initial feeling of anxiety decreases the more a student uses this approach of learning. Roberts (2013) further implied that PBL can cause anxiety amongst students, however suggested that this is only when PBL is the sole learning method and not used in conjunction with other methods. It should therefore be considered that PBL is not always enough to prepare a student for practice, as there is also a clear need for hands-on, practical learning within placement settings as well (Robertson et al, 2011). Toal-Sullivan (2006) explored the transition of Occupational Therapy students from University to their first year of clinical practice and found that many were challenged by their limited practical experience and responsibilities of client care. These findings emphasise that although PBL can be useful, there is also a need for placements throughout Occupational Therapy education.

Additionally, some critics express that PBL can be too problem-focused, and propose that using Appreciative Inquiry in conjunction with PBL can counteract this critique (Roberts, 2013). Appreciative Inquiry encourages exploration beyond the problem and focuses on possibility and positivity (Kessler, 2013). Appreciative Inquiry was developed to complement more traditional problem-solving models (Cooperrider & Srivastva, 1987), and due to focusing on strength and positivity has now been widely used across organisations and educational settings (Kessler, 2013).

The Appreciative Inquiry approach works well alongside the traditional PBL method within Occupational Therapy to encompass a service-user's skills and strengths. Occupational Therapist's aim to work with individuals in a holistic and realistic way, emphasising strengths rather than weaknesses, supporting them to reach their desired goals. Furthermore, Appreciative Inquiry also allows individuals to recognise and accept that they may not always be able to fix a certain problem, instead manage it in the best way possible to still live a meaningful life.