Student-centred learning: options for the application of constructivist thinking in occupational therapy education.

By Helen Jeffery

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1. Introduction

This work explores the relationship between *social constructivism*, two specific approaches to implementing constructivist thinking (*problem based or enquiry based learning* and *experiential learning*) and the concept of *action competence*. Indicators of compatibility are identified, and justification for the use of these theories in occupational therapy education is given.

2. Social Constructivism

Constructivism is often reported as the emerging contemporary educational ideology of choice (Eyler 2009, Kang, Choi & Chang 2007, Knapp 1992, Knowles 1998). This is particularly apparent in the education of teachers, and is also reflected in literature regarding the education of health professionals (Craddock et al 2006, Lederer 2000).

Constructivist thinking involves an understanding that learners build or make their own meaning from experiences. Constructivism understands learning as multiple constructions that are socially and experientially based (Savin-Baden 2004). Learners incorporate past experiences into this process, and adjust internal models or frameworks to accommodate new experiences (Dumchin 2010, Knapp, Knowles 1998, Quay 2003). Learning is a process of discovery or invention rather than of memorising, and contrasts with the theories of learning that stem from an empirical or positivist paradigm (Hunter 2008). Meaningful learning "occurs through reflection and by linking new knowledge to an existing framework of knowledge" (Brandon and All 20010).

The term constructivism is broad, and different forms have been explored and developed. (Larochelle, Bednarz & Garrison 1998). There is no one constructivist theory of learning but rather a multitude of closely related theories utilising the underlying premise that learners construct their own meaning. Woolfolk (2004) somewhat helpfully identifies two forms of constructivism – psychological constructivism and social constructivism, as a way of organising constructivist views.

Here psychological/individual constructivism focuses on individual internal mechanisms of reflecting on and coordinating one's own cognitions, of the individual constructing their own meaning. The outside world is the source of input but the actual work regarding the construction of meaning from that input is done internally. This interpretation of constructivism incorporates Piaget's theory of cognitive development, specifically his focus on processes of accommodation and assimilation (Larochelle, Bednarz and Garrison 1998, Woolfolk 2004).

Social constructivism relies heavily on the presence and process of social interaction or social activity, and on cultural context in the construction of meaning for the individual. These components are essential not just as sources of input but as an integral feature of the construction of meaning. Learners take for themselves meaning that is a product of their acting and interacting with others and their environment. Social constructivism draws heavily

on the work of Vygotski, specifically his belief that internal structures and processes can be traced to the individuals' relationships and interactions with others, the involvement of specific cultural tools (artefacts and symbols, especially language, that pertain to the culture and influence development) and involvement in activity (Woolfolk 2004; Brandon and All 2010).

2.1 Social constructionism

Constructionism is defined as the construction of social knowledge as opposed to individual knowledge. This includes what is considered within a specific culture or context as "common sense ideas, every-day beliefs and commonly held understandings" (Woolfolk pg 325). All knowledge is socially constructed and reconstructed within society. Social constructionists are interested in both how this process of construction of meaning evolves and in how the knowledge is communicated to new members of the particular social-cultural group (Woolfolk; Boghossian 2001, Quay 2003). Learning is not just individual, but is also collective – a group will construct knowledge as a group, "groups are capable of actions and understandings that transcend the capabilities of the individual on their own." (Davis et al in Quay 2003 pg 106).

2.2 Constructivism into practice

Clear parallels can be drawn between constructivist thinking and the principles of adult learning in that both stress a learner centred approach, ownership of the process by the learner, experiential learning and problem solving approaches to learning (Knowles 1998). Woolfolk has identified five elements of constructivist thinking that influences teachers working within this philosophy:

Teachers:

- Embed learning in complex, realistic and relevant learning environments
- Provide for social negotiation and shared responsibility as a part of learning
- Support multiple perspectives and use multiple representations of content
- Nurture self awareness and an understanding that knowledge is constructed
- Encourage ownership in learning. (Woolfolk pg 327)

In addition to these elements, Saveryal and Duffy (in Knowles 1998, pg142) propose instructional elements that include ensuring all learning tasks are anchored to a larger task or problem, design the environment to both support and challenge the learners thinking and provide opportunity for reflection on both the content of the learning, and the learning process.

Learners construct their own meaning and enhance their capacity to do so through being open to social and collaborative approaches to learning and developing their critical thinking skills. Lederer (2000) draws a parallel between the principles of both constructivism (explicit) and experiential education (implied) with the use of occupation by occupational therapists – "...through the process of doing, concepts are crystallised into understanding and knowledge is transformed." (pg 84). He identifies many elements common between a learner in

occupational therapy education, and a client in occupational therapy intervention, including constructing knowledge in a search for meaning, responding to real, ill-structured and complex situations, reflexivity and ability to respond to feedback, and the collaborative nature of knowledge construction (pg 92).

The principles of constructivist theory are general and do not directly address the practicalities of its application to the teaching/learning process (Legg, Adelman and Levitt 2009). A wide variety of teaching or instructional methods have developed in response to the growing enthusiasm for utilising constructivism at all levels or formal education, including situation based learning, problem based learning, enquiry based learning, project based learning, case based learning, role play, experiential learning, reflective processes, web based learning (Legg et al 2009, McGuire, Lay and Peters 2009). The challenge for teachers in the education of health professionals is in devising strategies and structuring the learners' experiences in the classroom, skills laboratory and in the clinical field to ensure both active learning and connected learning. Collaboration between all members of the faculty is essential to ensure a continuum of the learning process (Brandon and All 2010).

3. Enquiry based learning/problem based learning

Enquiry (or inquiry) based learning and problem based learning are both processes of active self directed learning through enquiry. They are widely adopted by educational institutions in the health arena including medical, nursing and allied health professional training (Hendry et al 1999, Horne et al, Chung and Chow, Cleverly, Tremblay). Enquiry based learning (EBL) and problem based learning (PBL) both share the same educational intentions and philosophical orientation of constructivism in learning (Hendry 1999, Savin-Baden and Major 2004, Tosey and McDonnell 2006, Cleverley 2003), and fit broadly into the experiential learning tradition (Savil-Baden 2004, Tosey and MacDonnell) They are both student centred, depend on active learning, involve immersion in and engagement with complex problems or scenarios and are facilitated by academic staff with learners working collaboratively in small groups (Deignan 2009, Mantzoukas 2007, Price 2003).

PBL was originally developed at McMaster University, Canada, in response to a realisation that traditional didactic teaching methods in medical education was not equipping learners with the skills they needed to practice effectively, and was hindering their ability to develop critical and analytical thinking skills in the medical environment. There was an identified gap between what was covered in the classroom and what medical practitioners needed in the field. (Hendry 1999, Horne et al 2007, Price 2003) The function of PBL was to meet four fundamental educational objectives:

1. Development of effective clinical reasoning process
2. Organisation of knowledge for use in clinical contexts
3. Development of effective self directed learning skills
4. Increase motivation for learning (Barrows in Chung and Chow 2004 pg 158).

Some literature blurs and confuses the two approaches – Mantzoukas (2007) states PBL and EBL are so similar that to try and define them separately is semantics. He describes the development of PBL from its origins in medical education, with a structured diagnosis orientated slant, to inclusion by nursing and allied health professional educators of humanistic psychology and educational theories of adult learning and experiential learning.

Price (2003) outlines clear distinctions between the two approaches, which is compatible with Mantzoukas' analysis. PBL involves learners being set an ill defined and complex problem, situation or scenario (trigger) and are assisted in analysing, sifting through the knowledge they have, deciding on what other knowledge and information they need, and working collaboratively in their groups to formulate a plan or reach a solution. The trigger is utilised to initiate and stimulate the active learning process and is therefore given before information or resources. The trigger is a problem. Problem based learning is:

> A group-mediated and inquisitive way of learning about practice problems. Study groups work towards the formulation of solutions. The approach emulates the inductive/deductive skills that nurses need to develop and use in practice. (Price pg 217)

EBL, according to Price, involves developing a deeper understanding of the nature of situations and of clinical practice more sensitively and deeply. It is not as focused on solution outcomes, and the end point is not necessarily a discrete answer. The purpose is more to sensitise the learner to the situation and foster an understanding and insight. The trigger is a question. Enquiry based learning is:

> An inquisitive and co-operative approach to investigating practice where it is anticipated that there is unlikely to be a definitive solution, but where principles of good practice or alternative approaches to care might reasonably be recommended (Price pg 213).

Tosey and McDonnell (2006) emphasise the primary goal of EBL is the "development of transferable skills of enquiry, which are most relevant in any context (especially professional and workplace contexts) where the capacity to construct knowledge and to act within conditions of complexity are important" (pg 3).

How PBL/EBL is utilised in higher education varies considerably (Vardi and Ciccarelli 2008, Trembly, Tryssenaar and Jung 2001). Factors to consider when introducing PBL/EBL include the fundamental curriculum and how that is decided, assessment, staff support and development, and learner support and education regarding the approach. Savin-Baden and Major (2004 pg 37-45) outline eight curricula models of utilising PBL with various combinations of problem based, problem solving, lecture based, mixed approaches. Although this offers a wide range of potential options, she emphasis that to avert disaster the structure of units or modules should be maintained with the central component being the problem or scenario or situation – lectures, skills groups, seminars etc all contribute to or feed in to this.

Contrasting with this view is a study by Summerlee and Murray (2010) into the impact of one unit or course utilising PBL in the first year of study on the remainder of the course of study for those students. The results showed the students who had participated in the PBL unit demonstrated more sophisticated research skills, increased community and learning engagement, and achieved higher academic grades through the remainder of their programme than the control group.

PBL/EBL has been found to be effective in increasing independent learning skills and facilitating deeper exploration of the material than traditional didactic teaching. Research into these learning approaches also indicate they improve team work, interpersonal and collaboration skills; and improve confidence and self awareness; presentation, research, inquiry and analytical skills; conflict management and resolution skills and creative thinking skills (Horne et al, Deignan, Summerlee and Murray, Savin-Baden and Major 2004). However there are also clearly identified difficulties when adopting PBL/EBL which if not successfully addressed can have a negative impact on the experience for both learners and teachers. Issues include poor understanding of PBL/EBL on the part of learners and/or teachers, dysfunctional group formation, inadequate participation from some students, inadequate preparation and superficial researching on the part of students, resourcing issues (time, space, literature, guidance), teachers over-involved or under-involved, teachers with poor understanding of group dynamics and group facilitation skills (Deignan 2009, Horne et al 2006, Tremblay et al 2001, Vardi and Ciccarelli 2008, Thomas et al 2007, Summerlee and Murray 2010)

The role of the learner is central, and includes taking responsibility not only for their individual learning but the part they play as a team member. Learners familiar with traditional learning environments need to shift towards becoming an active problem solver, contributor and discussant; a public person prepared to take risks; a collaborative worker with attendance dictated by community expectation; and need to accept learning interdependently with others and seeing peers, oneself and the community as resources rather than the teacher. (Savil-Baden and Major pg 82).

The role of teacher is primarily that of facilitator (Tosey 2006), and secondarily that of resource or expert. Schmidt and Moust (in Savin-Baden and Major pg 101) following research into the requirement of effective facilitators of PBL argue that facilitators need to have content knowledge, be able to be involved with the learners in an authentic way and be able to communicate at the students level of understanding. The skill of the facilitator has a direct impact on the success of the process (Deignan 2009, Hendry 1999, Savin-Baden 2004,)

4. Experiential education

The Association for Experiential Education defines experiential education as:

> …a philosophy and methodology, in which educators purposefully engage with learners in direct experience and focused reflection in order to increase knowledge, develop skills and clarify values. (http://www.aee.org/)

Experiential education involves learners in activities or experiences that have real life consequences. The process involves active and conscious reflection following the experience in order to ensure the learning happens, and that meaning or knowledge is constructed from the experience. (Kolb 1984). Experience is regarded by many as the most natural way to learn, "learning through experience is the normal commonplace approach to learning, we take it for granted." (Boud and Miller 1996).

Experiential education has influenced numerous formal and informal educational environments over the years. As understanding of how individuals learn or make meaning develops, non-traditional methods of teaching are coming to the fore. The experiential educational philosophy is informed by the work primarily of Dewey, articulated in his Experience in Education published in 1938. Dewey's theory incorporates the concepts of continuity (each experience will have an impact on following experiences) and of interaction (the relationship between past experience and the current situation and experience).

Proponents of experiential education advocate it as being an effective method of encouraging and instilling in the learner the social skills, work ethic and practical expertise necessary for compatibility with the given profession, and the level of transference of the learning is high (Eyler 2009, Knowles 1998). Experiential education is a style of education that potentially fits with any course content (Chapman 1992). Experiential education is charged with the ability to instil attitudes and skills necessary for lifelong learning, the development of critical thinking skills through immersion in real life problems, application of knowledge in complicated and ambiguous situations and a deeper level of understanding of content than is possible from classroom teaching. (Eyler 2009; Chapman, McPhee & Proudman 1992). Experiential education puts learners in more direct contact with the material, and ensures the experience is understood by the learner in terms of relevance to the learner.

Whilst experiential education is "education (the leading of students through a process of learning) that makes conscious application of the students experiences by integrating them into the curriculum" (Carver 1996), what is defined as experience is not clear. Carver goes on to indicate that experience can be considered any combination of senses, physical or cognitive processes, emotions, and that the educational aspect of the experience is dependent on the level of processing involved during and after the experience. Experience has also been defined as the working through of a situation or activity that has real consequences for the learner (Stevens and Richards 1992), or as immersion in social constructions and cultural expectations specific to an environment for which the learner is ultimately preparing for – work based experiences, fieldwork placements, service learning opportunities etc.

4.1 Experiential learning

Terminology in the *experiential education* field is often blurred with *experiential learning*. Experiential learning is the actual process the learner works through in order to learn from, or make meaning from, an experience. Experiential learning is learning through reflection on doing, the emphasis is on the critical reflection and processing of the experience. (Kelly 1997, Boud and Miller 1996, Craddock et al)

David Kolb is probably the most influential recent theorist regarding the development of experiential learning, continuing on from the earlier work of theorists such as Freire and Mezeiro who stressed the processing and critical reflection of experience being the heart of learning (Kelly 1997).

Kolb (1984) defines learning as "the process whereby knowledge is created through transformation of experience" (pg 38), and emphasises the learning that happens when content meets experience. Kolb utilised a learning cycle model to articulate his theory, with four stages in the process – concrete experience, reflective observation or critical reflection (where he learner asks questions about the experience based on past experiences), abstract conceptualisation (where the learner seeks to find answers to the questions, makes generalisations, draws conclusions) and active experimentation (where the learner puts the new hypotheses or conclusions to test, leading to more experience). As with any learning cycle, it can be entered at any stage, but when utilised consciously in teaching the usual start is with the concrete experience (Kelly; Stevens and Richards).

4.2 Roles of teacher and learner in experiential learning

The facilitation in experiential learning is often subtle, but is always intentional and goal directed with regards to desired learning outcomes. Teachers utilising experiential learning techniques creatively can apply them to any content, to any learning environment and at any level. It is about the organisation of delivery, the way the material is presented and worked with (Briers 2005, Craddock et al, McGuire et al).

The role of the teacher is to *cultivate an environment* to establish the physical and social context for learning. Carver (1996) identifies four pedagogical principles underlying experiential learning (authenticity, active learning, drawing on student experience and providing mechanism for connecting experience to future opportunity) and charges the role of the teacher as ensuring these are adhered to. Teachers provide structure (the minimum necessary for learning to occur) and help the learners make connections. The role has been aligned more with the concept of coaching than teaching, with teachers mediating, posing problems and guiding. Teachers need to trust that learners are drawing their own valid and meaningful conclusions (Chapman, McPhee and Proudman 1992, Tait 2009).

The teacher uses *concrete experience* to facilitate the potential for learning (Kolb 1984, Kelly 1997). Definitions of what is considered legitimate experience when utilising experiential learning theory varies in the literature, from practice placements in the intended work environment through to attending a lecture. Clearly fieldwork experiences will have the potential for deeper learning, as the drive for the learning is more likely come from agendas

other than, or at least alongside, the need to pass the assessment (Freeland 2009, Eyler 2009, Tait 2009). Experiences utilised in health education programmes other than direct fieldwork experience include cross cultural home stays, "living lab" (skills lab with real clients, described in Benson & Witchger Hanson 2007), cross cultural interviews (Yuen and Yau 1999), class and individual projects, utilising experiential learning principles in learning group work skills (Alers and Smuts 2002), case studies (Brandan and All 2010), role play, scenario based sessions, problem based learning groups, inquiry or enquiry based groups, simulations, service learning opportunities (Raiz 2007), developing specific games to explore content (Gifford 2001, Goldreich 2004), skills groups, web casts (Wooster & Lemcool 2004), outdoor activities (Chapman et al, DeLay 1996), web based discussion. The common theme however is that experience is different from an activity – an experience is an event with meaning. (Boud, Cohen and Walker 1993, Kolb 1984).

The teacher actively encourages or enables *critical reflection* on the experience. Reflection can be viewed as the intellectual and affective activities that learners utilise to explore their experience (Boud, Keogh and Walker 1994 pg 19). The affective component should not be underestimated – Proudman (Chapman, McPhee and Proudman 1992) considers experiential learning as emotionally charged learning, and that attempts to simplify it as description of "hands on learning" are not helpful. Teachers utilise a variety of techniques and tools to facilitate reflection – conversation and debate, reflective journaling (Lederer 2000), structured journal writing activities (Hobbs and Luebben 2001), reflective writing (McGuire, Lay and Peters 2009), reflection maps (Eyler 2002), transparent use of experiential learning cycles (Kolb), integration tutorials and seminars (Smits and Ferguson 2000), formal briefing and debriefing (McKenzie 2002), peer and self evaluation (Brandan and All 2010)

During the *abstract conceptualisation* phase, the teacher guides students towards the ideas, information and theories they can use to make the connections. Here the teacher can direct the learner towards references, resources, internet sites, facts, policies, plans, data, and encourage learners to use strategies and knowledge they already have – anything that is going to help them utilise logic and ideas to understand situations or problems (Kelly 1997). The teacher uses challenging conversation and questions, and designs activities that allow learners to test their new learning – the *active experimentation* phase. Learning portfolios is an example of an activity that has the potential to assist the learner work through each stage of the experiential learning process (Funk 2007).

With regards to the role of the learner, Kolb (in Kelly 1997) states that in order for experiential learning to be effective the learner must:

1. be willing to be actively involved in the experience;
2. be able to reflect on the experience;
3. possess and use analytical skills to conceptualize the experience; and
4. possess decision making and problem solving skills in order to use the new ideas gained from the experience

5. Action competence

Action competence in health and education spheres has developed out of the tradition of democratic education. This contrasts with the more moralistic approaches that incorporate working on the modification of individual's behaviours towards what is prescribed as ideal or acceptable (Colquhoun, 2000). Action competence is dependent on an individual's commitment to democratic principles, ability to conceive a greater or common good and buy-in to collective social action. Action competence is about the individual developing awareness and understanding of the issues, developing skills in critical analysis of the issues and imagining a future or environment where the issues are resolved. This awareness and vision, coupled with a will to be involved in and committed to effecting change, and the ability to be constructive in the change process at a societal level determines an individual's action competence. (Colquhoun 2000, Breiting 2010, Maindal, Kirkevold, Sandbaek, and Lauritzen, 2010). An individual with a high level of action competence will be "capable of seeking information, analysing, evaluating, arguing and together with others deciding and acting" (Uhrenholdt 1993, in Fontes 2004 pg 151).

Action competence as a concept and practice in education has been progressed primarily in Denmark, where the majority of the literature and research is conducted. Although action competence as a model is designed for any "societal problem", (Fontes 2004) it has been most utilised in environmental education, health promotion and education for sustainability. The education for sustainability movement in New Zealand has incorporated action competence as the model of choice, and has developed a framework for teachers to utilise in all education sectors. (Teaching and Learning Research Initiative 2009; Wilson-Hill, Law & Eames). Aspects identified as being important to foster in learners to assist them develop action competence have been identified as: experience, reflection, knowledge, visions for a sustainable future, action taking for sustainability, and connectedness (www.efs.tiki.org.nz). As learners develop a critical, reflective and participatory approach towards issues, and values and attitudes regarding the future in respect of the issues, the hope is that change will ultimately happen at a societal and global level. (Breiting & Mogenson 1999).

5.1 Roles of teacher and learner in developing action competence

The New Zealand Framework for Action Competence (2009) provides clear guidelines for teachers utilising this framework in education for sustainability under each aspect identified. The role of the teacher is supportive and facilitative. The teacher provides experiences in authentic settings, tools to encourage reflection and critical thinking, and provides opportunities for learning in a range of contexts. The teacher facilitates a learner centred environment, and supports learner led initiatives.

Breiting (2010) encourages teachers and facilitators to ensure there is a high level of mental ownership, facilitated through a high level of student involvement and effort, and utilise a highly participatory approach throughout the process. Fontes (2004) emphases that learners need to be given choices and to be encouraged to articulate how and why they have made

their choices. The concept of sharing the power and responsibility for decisions regarding pathways followed in formal learning environments with learners challenges traditional educational processes but is a principle of constructivism.

Ensuring learners are supported in their endeavours to develop action competence; teachers have a role in ensuring they access facts, knowledge and information. Many learning environments manage this well, however do not put them into contexts or assist learners make the connections or links to the real world. This transfer and generalisation of knowledge has a potentially mobilising effect, essential for action competence (Gentile and Bencini, in Fontes 2004). Some occupational therapy programmes utilise service learning, or community experience, as opportunities to assist learners develop links between theory and practice, and to reap the benefits of participation in social environments they may not otherwise have exposure to. Hansen et al (2007) assert that "hands on experience in service to others not only contribute to the holistic development of students but also cultivates civic mindedness, an essential element of social participation." (pg 28). Although the concept of action competence is not directly reflected in the growing body of service learning literature, underlying themes overlap and are compatible. In preparation for an occupational therapy curriculum review in a South African school, de Jongh considers the value of having students experience membership and explores the aspects of underdeveloped communities. Students' learning focuses on commitment to the practice of upholding occupational rights of all people, and social justice and equity at both a community and political level (De Jongh 2009, pg 31). Again, although not explicitly defined, the outcome of students involved in these experiences is likely to include enhanced action competence.

One of the most often cited responsibilities of teachers facilitating action competence is the development of critical thinking skills. Critical thinking is reflective and evaluative thinking (Mogensen 1997). For learners to become genuinely motivated for action and mobilised into useful action for change, they need to be able to critically question, analyse, be curious about, explore – the teacher can be instrumental in initiating and nurturing this skill.

Learners increasing their level of action competence work collaboratively with teachers, with peers and in their communities. Learners share responsibility with teachers for the direction and process of their learning path, and take a lead in learning decisions.
As well as for teachers, the New Zealand Framework for Action Competence (2009) provides clear guidelines for learners utilising this framework. Learners are open to experiences and utilise their environment actively, learners are reflective by thinking critically and deeply, and are willing to share and discuss their opinions. Learners think creatively and innovatively, and are committed to developing capability and motivation for action and change.

Experiential learning has been identified as an approach appropriate in assisting learners develop action competence (E:\action competence\act comp approaches.mht).

6. Justification

Professional education is in part about identity formation. (Hooper 2007, Raveh 1995). The process of helping an individual develop their knowledge and skill base in order for them to ultimately practice in their profession goes hand in hand with the process of socialising them into the profession, the formation of a professional identity with an understanding of the common beliefs and values of that profession. This includes developing an awareness of the "big picture", and concepts of the occupation at a societal and global level (Gillette 2001), and can be described as developing action competence within the areas of direct interest to the profession (unemployment, poverty, homelessness, occupational deprivation etc). This process is potentially enabled by education principles that incorporate concepts such as nurturing and developing self awareness, empowering learners to critically construct knowledge form core values of the profession, and having direct meaningful experiences within the communities of interest. Hooper's (2007) extensive study included an exploration into what instructional methods occupational therapy teachers utilised in their goal towards nurturing identity formation. The techniques identified all fitted with constructivism, and many utilised experiential learning techniques in the classroom. Although not specifically discussed, implicit in this work is the development of action competence through critical reflection and expansion of the view of the client to include the social context.

The American Occupational Therapy Association has published a philosophy of occupational therapy education (2007). The statement within this document related to how occupational therapy educators work demonstrates a constructivist view and incorporates experiential learning:

> Occupational therapy educators use active learning that engages the learner in a collaborative process that builds on prior knowledge and experience and integrates professional academic knowledge, experiential learning, clinical reasoning, and self reflection. (Haynes and Jones 2007)

6.1 Compatibility

Shared features of constructivism and experiential learning, problem based learning and enquiry based learning:

- learning and teaching is a collaborative process
- development of critical thinking skills
- learners participate actively in the learning process
- use of critical reflection
- importance of relevance
- learning is enhanced if affective component is strong
- opposed to didactic, authoritarian styles of teaching
- affective component of learner important – passion, interest, motivation
- learners build or construct their own meaning

- context has a crucial influence
- learning is dependent on past as well as current experience

It is clear that experiential learning and action competence have a place as teaching/learning methodologies within a programme designed utilising social constructivist theory and principles (Quay 2003, McGuire, Lay and Peters2009). This is supported by literature exploring the education of health professionals, including occupational therapists. (Lederer 2000, Smits and Ferguson 2000, Alers and Smuts 2002, Benson and Hansen 2007, Raveh 1995) There are aspects of social constructivism that are not included or considered in experiential education literature. (Kang, Choi and Chang 2007; DeLay 1996), and literature exploring the theoretical underpinnings of experiential learning is developing (Quay, DeLay). Each is unique, complex and evolving. However the use of experiential learning as a method of programme delivery is compatible with social constructivist views of education and both are appropriate and commonly utilised within the context of occupational therapy education (Lederer 2000, Raveh, 1995).

Problem based learning and the approaches that have evolved from problem based learning (e.g. inquiry and enquiry based learning) are commonly utilised in health professional education (Savin-Baden and Major 2004, Tremblay et al 2001, Vardi and Ciccarelli, Cleverly 2003). The flexibility of these approaches has caused a multitude of translations of the principles and variety in their practices. Many of these are well documented, along with difficulties of implementation and possible solutions to ensure success for the learners and faculty.

The theory of action competence is also clearly compatible with social constructivist thinking, but perhaps even more with social constructionism. An individual with a high level of social competence is likely to have developed that knowledge and constructed their meaning along with others and as part of an experience of belonging with others working in a specific context. The process of increasing ones level of action competence sits comfortably with the use of experiential learning and, it can be argued is reliant on effective experiential learning. Action competence has been also referred to as social action, and has links with concept of social justice. The fields overlap and have common elements. Hardina and Obel-Jorgenson (2009) point out the need in many areas of social action for learners to develop skills in confrontation, verbal and written communication skills, empowerment, cultural competence, and interpersonal skills, and propose a model for the provision of supervision based on these skills for new graduate social workers.

An underlying premise in all of these theoretical approaches is the relevance for the learner, and their motivation for the learning. Developing the level of action competence in an individual as an integral part of an occupational therapy programme is compatible with desirable attributes of new graduates with regards to having an awareness of community, social and global issues, and a passion and desire to have an impact and facilitate change. However it is perhaps debatable how much the actual area this action competence is encouraged in can be dictated by a programme. Can an occupational therapy programme

legitimately incorporate action competence for sustainability? In this area it is important the learner is able to make clear connections between the content and its relevance to the overall programme. If action competence in the area of sustainability is to be utilised then research into how this can be effectively and appropriately needs to be conducted. Action competence is developing most in Denmark, and it is interesting to note that the Occupational therapy programme goals there include the statement:

> Focus is on relationships between human activities and the environment in such a way that the students achieve action competence within the profession of occupational therapy. (University College Siddanmark 2010)

The Bruntdland report (1987) defined sustainibility as: ”development that meets the needs of the present without compromising the ability of future generations to meet their own needs” .

This definition is widely accepted and utilised, the challenge is in finding a way to constructively incorporated into occupational therapy curricula.

6.2 Assessment

Assessment is a critical component of an occupational therapy programme. The needs of a dynamic work environment demand graduates with a high level of professionalism, thinking skills and skills and motivation for life-long learning, however traditional assessment methods do not necessarily assess the learners ability to meet these demands (Funk 2004, Savin-Baden 2004). Although little emphasis seems to have been placed on assessment or evaluation of learners involved in experiential learning processes, there is a trend towards more qualitative assessment processes with the move toward overtly utilising constructivist and experiential learning philosophies (Hendry et al 1999, Funk 2004, Hendricks 1994, Savin-Baden 2004). A variety of assessment techniques are utilised, including skills demonstration, the use of vivas or teacher-learner interviews, the use of seminars and presentations. The use of learning portfolios is becoming more popular and showing benefits for the learners at all levels of the learning process, including assessment (Funk 2004 & 2007). Problems in assessment include a dissonance between assessment processes and constructivist thinking, with impacts including unrewarded learning, assessment disabling student learning mechanisms (with students shifting focus from the learning to assessment requirements), destructive impact on group-work and group dynamics, particularly if group-work was assessed (Savin-Baden, 2004). The work of Eisner (in Hendricks 1994) demonstrates a creative approach towards ensuring that assessment is compatible with the philosophy of experiential learning. He articulates eight criteria for assessment:

1. reflect real world needs, by increasing students' problem-solving abilities and ability to construe meaning;
2. reveal how students solve problems, not just the final answer, since reasoning determines students' ability to transfer learning;

3. reflect values of the intellectual community from which the tasks are derived, thus providing a context for learning and enhancing retention, meaning, and aesthetic appreciation;
4. not be limited to solo performances, since much of life requires an ability to work in cooperation with others;
5. allow more than one way to do things or more than one answer to a question, since real-life situations rarely have only one correct alternative;
6. promote transference by presenting tasks that require students to intelligently adapt modifiable learning tools;
7. require students to display an understanding of the whole, not just the parts; and
8. allow students to choose a form of response with which they are comfortable.

Although this list clearly meets the demands of constructivist and experiential learning theory, it does not overtly include the concepts of collaboration, or the power of peer and self assessment in the learning process.

7. Conclusion

There is a need for new graduate occupational therapists to be competent in sourcing and using information, solving problems, working collaboratively and in teams, and able to cope with the demands of rapid change in health service provision. They must emerge as graduates with the skills and motivation for ongoing self-directed learning. Constructivism as a philosophy or theory is an appropriate foundation on which to base teaching learning approaches.

There are many instructional approaches or methods that are compatible with constructivism. There is evidence that problem based learning, and the emerging variants of enquiry or inquiry based learning can be successful in helping learners meet the demands of occupational therapy education. Experiential learning is an instructional approach that is flexible and can be utilised effectively in helping learners develop knowledge, skills and attitudes for success in the programme and in their futures as practicing occupational therapists. For any of these approaches to be implemented effectively there needs to be careful planning, education of staff and learners regarding the chosen approach, decisions made regarding issues such as assessment, and allocation of the necessary resources.

The goal of assisting learners develop action competence is commendable and appropriate for occupational therapy as a profession. The challenge for creative programme designers is to incorporate action competence into the programme in a way that is sensitive to individual areas of interest, passion and motivation, cognisant of individual levels of “social maturation” and compatible with the culture of occupational therapy.

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