

An enactivist approach to teaching and learning critical reasoning in ODL

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Abstract

The current social constructivist approach to teaching critical reasoning in an open distance learning (ODL) environment may well be reductionist in the sense that it aims at training learners' intellects to minimise errors and distortions of thought. Within the context of adult education and theories of learning, research indicates that social constructivism fails educational practices. These studies suggest that this is the result of focusing too narrowly on cognitive knowledge. Consequently, a social constructivist approach falls short of reflecting critically on the epistemological and ontological assumptions that underpin its pedagogical framework. However, I argue that, while the impact of sociocultural realities and political power structures on epistemological paradigms and educational practices cannot be ignored, social constructivism falls short of taking into account the embodied everyday experiences that form the vital context within which sense-making takes place. In the light of the above considerations, this article reflects critically on the current pedagogical style underlying the teaching of critical reasoning at Unisa. By investigating enactivism as an alternative approach, I propose a re-conceptualisation of the current critical reasoning teaching paradigm so as to reconsider the question of how we learn things and to understand the process whereby meanings are created, not only rationally but also across multidimensional contexts and complex situations in which learners operate and of which they form an integral part.

Keywords: critical reasoning, open distance learning, objectivism, social constructivism, enactivism, embodied lived experiences

INTRODUCTION

For decades the dominant pedagogical approach to teaching the critical reasoning module at the University of South Africa (Unisa), an open and distance learning (ODL) tertiary institution, has been premised on the notion that learning is a conscious, intellectual activity of the processing mind. This approach sees the role of the educator as facilitator or manager of the educational process aimed at training learners' intellects to minimise errors and distortions of thought.

Over the years, the critical reasoning module has seen a number of changes according to changing pedagogical approaches. In 1999 the module was designed in accordance with an objectivist approach premised on the belief that reality is independent of human experience and is mirrored in the human mind. In 2001 and 2005 the module was revised, according to the same objectivist learning theory.

In 2009 the critical reasoning module was again revised. However, this time it saw a radical revision where educators reflected critically on the curriculum design and teaching approach. The team involved with the revision aimed at overcoming the shortcomings of an objectivist pedagogical paradigm. The module was revised with the assistance of a team involving the Directorate for Learning and Curriculum Design (DLCD) at Unisa. The curriculum design team took great care to ensure that the critical reasoning module would respond to the changing environment of the learner and would be learner-centred and context-sensitive. An objectivist approach was replaced with a social constructivist paradigm, founded on the notion that reality is discursively and socially constructed, rather than predetermined.

The pedagogical interventions aimed at transforming the conventional method of correspondence instruction by focusing on intellectual engagement from learners and emphasising that knowledge is fluid and cognition is a process of interpretation of the learner's subjective experience (Van den Berg 2011, 72--75). To explain how the educators involved in the revision of the critical reasoning module have overcome the shortcomings of an objectivist learning theory, a brief explanation of the difference between the two learning theories will be useful.

Objectivism believes that reality is external to the knower, and knowledge is predetermined and independent from human experience (Fenwick 2000). Teaching is seen as transmitting established knowledge, beliefs and skills to learners. Learning is seen as the process of acquiring knowledge and skills. The learner is thus seen as a passive agent who replicates the content and structure of an abstract reality. The problem with this view is that the lecturer is seen as an authoritative mentor who controls the curriculum and changes learners' behaviour, while learners are seen as passive agents who mechanistically process symbols and receive knowledge.

Social constructivism, on the other hand, rejects the notions of absolute reality and predetermined knowledge. It underscores the ideas that truth is relative and context-bound and that learners construct knowledge through a process of interpretation and active negotiation (Jonassen 2006). A social constructivist learning theory supports a learner-centred pedagogy and learning requires active intellectual engagement from learners. Learners are also encouraged to reflect critically on their unexamined beliefs, values and ideological constructions.

These ideas are in agreement with the purpose and aim of the critical reasoning module: that is, encouraging learners actively to participate in the development of their potential and capacities toward critical and creative reasoning about cultural stereotypes and sociopolitical ideologies. On the basis of this, it could be claimed that a social constructivist learning theory is a vast improvement on the objectivist theory. Nevertheless, it is self-evidently the task of critical reasoning practitioners and educators in ODL to engage continuously in critical reflection on the epistemological and ontological assumptions that inform our teaching and learning theories. This article is the result of this kind of self-reflexive thinking. While I believe that a social constructivist approach to teaching and learning critical reasoning is an advance on the traditional objectivist paradigm, I maintain that it is in need of improvement.

Drawing on recent academic literature in the field of tertiary teaching methods, I am of the opinion that the current social constructivist approach to teaching and learning critical reasoning in Unisa's ODL environment goes a long way toward conveying the idea that knowledge is open-ended and enriched by diverse perspectives, and it respects learners as central participants in the creation of their own meanings. However I maintain, upon critical reflection, that the social constructivist approach to the instructional design and teaching of the critical reasoning module is reductionist in the sense that it reduces cognition to sociocultural constructions. Consequently, I maintain that social constructivism relies too heavily on a rationalistic conceptual framework, while overlooking the fact that learning is an embodied process that takes place within broader community networks.

This raises the question: Is mastery of the techniques of logical argumentation and cognitive understanding of preconceived ideas and stereotypes all that learners need to integrate differing viewpoints conceptually and critically, to cope with an open distance learning environment, to become independent critical and creative thinkers who make responsible decisions?

In response to this question, this article revisits social constructivism and draws out some critical shortcomings of this paradigm. Subsequently, it explores enactivism as an alternative paradigm to teaching and learning critical reasoning at Unisa. It is my contention that investigating alternative learning theories is needed to help educators broaden their thinking about teaching and learning. Such an investigation may help critical reflection on dominant paradigms and a search for more robust ways of teaching and learning within the complexity of ODL.

Within the scope of this article I have chosen to focus on three learning theories: objectivism, social constructivism and enactivism. Some educators may prefer to focus on other currents of thought, such as psychoanalytic theory,

situated learning theory and the critical cultural perspective. An exploration of these theories falls outside the scope of this research. I have chosen to focus on a limited number of teaching theories because they are the most relevant to my argument, but not to deny the value of other perspectives.

The aim of this article is therefore (1) to re-evaluate the current social constructivist approach to teaching critical reasoning and to point out some critical shortcomings of this paradigm and (2) to investigate enactivism as an alternative approach to teaching and learning critical reasoning in an ODL environment.

SOCIAL CONSTRUCTIVISM REVISITED

A systematic review of recent academic literature in the field of tertiary teaching methods reveals that social constructivism succeeded the traditional transmission approach and has been the dominant educational paradigm for the last two decades (Begg 2000; Davis and Sumara 2002; Fenwick 2000; Fox 2006; Heydenrych and Prinsloo 2010; Jonassen 2006; Mason 2008; Phillips 2000; Reiser 2002). These works suggest that social constructivism may fail educational requirements. For instance, Begg (2000, 2) claims that constructivism is concerned only with cognitive knowledge and focuses too narrowly on what constitutes knowledge for the dominant culture: that is, the white middle class. In addition, Fox (2006, 11) maintains that constructivism, whether radical or social constructivism, falls short of reflecting critically on the epistemological, ontological and moral assumptions that underpin its pedagogical paradigm. Furthermore, Heydenrych and Prinsloo (2010, 22) point out that 'higher education institutions have, for too long, distanced themselves from the communities in which they themselves are located, and from which their students originate'. Another problem with constructivism is that it often does not provide opportunities for empirical research or functional guidelines as regards instructional design and teaching practices (Davis and Sumara 2002, 420; McCarty and Schwandt 2000, 48).

I follow these critical responses to social constructivism by maintaining that the social constructivist approach to teaching and learning has yielded great advances in understanding the role and influence of cultural institutions and social processes in knowledge formation, but I maintain that it falls into the same dualistic trap as the transmission educational paradigm, founded on outcomes-based instructional design. Although social constructivism sees knowledge as fluid, it assumes that cognition resides inside the learner's mind separated from the world. It presumes a 'split' world, where learners are divided from the world of cultural institutions and their own lived experiences. To my mind, this kind of

pedagogical approach is reductionist because it reduces knowledge to an internal 'thing' that can be acquired.

While I agree with social constructivism that we cannot ignore socio-cultural realities and political power structures that influence and dominate epistemological paradigms and educational practices, this approach has tended to focus too narrowly on knowledge formation as a sociocultural construction. Cognition and the learning experience are thus interpreted mechanistically, with the mental realm separated from experiential reality. While social constructivism has undoubtedly contributed positively to educational practices in the sense that it emphasises a learner-centred environment, it falls short of taking into account the data and lived experiences of a first-person ontology. The problem with a social constructivist pedagogical framework is that it remains trapped in its own postulated social constructionist paradigm -- it assumes that reality, knowledge and the learning experience are derived from a pre-given discursive social order. Moreover, it assumes that active intellectual engagement from learners leads to independent thinking.

I argue that critical reasoning is more than an intellectual activity of the processing mind. Rather, I maintain that the learning experience is an embodied process, intertwined with complex everyday experiences, which incorporate intuitions, emotions, bodily sensations, the physical environment and broader community networks of which ODL environments, such as Unisa, form part. On this basis I challenge the social constructivist view that knowledge is embedded inside learners' minds and its assumption that intellectual engagement from the learner leads to independent thinking. It is debatable whether high-quality module content, on its own, can assist learners to apply critical reasoning to their own lived experiences.

Accordingly, this article seeks to disrupt some of the epistemological and ontological assumptions of social constructivism through the lenses of the philosophy of enactivism. Although enactivism is not a new theory, as will become clear in the following discussions, it has only recently been applied to the pedagogical terrain by educational writers, such as Davis and Sumara (1997, 2002), Fox (2006) and Jonassen (2006). It seems likely that critiques of the enactivist perspective will appear in future education literature.

To this end, this article does not intend to give a prescriptive basis for instructional intervention and design of the critical reasoning module. Rather, it is exploratory in nature and aims at investigating an enactivist perspective as an alternative approach to the teaching and learning of critical reasoning at Unisa. In the section to follow, I will explore the enactivist notion of embodied consciousness and its challenge to a social constructivist learning theory.

EMBODIED CONSCIOUSNESS AND THE SIGNIFICANCE OF THE LIVED BODY

In this section I discuss Merleau-Ponty's views of cognition and the lived body, upon which enactivist theorists base some of their main ideas of structural couplings (Maturana and Varela 1987) and co-emergence (Varela, Thompson and Rosch 1991). In my opinion, enactivist theorists do not always give sufficient acknowledgement to Merleau-Ponty and his contribution to the field of cognition, knowledge formation and human experience. For this reason, here I briefly explain Merleau-Ponty's views and draw out some implications of his notion of ontological embodiment with regard to cognition and the learning experience.

Merleau-Ponty, a French existential phenomenologist and contemporary of Sartre, De Beauvoir and Heidegger, criticises Cartesian rationalism, which postulates the superiority of the mind over the body. With his philosophy of embodiment, Merleau-Ponty establishes the significance of the lived body as a means of cognitive and affective access to knowledge and the *Lebenswelt* (the life-world):

The perceiving mind is an incarnated mind. I have tried, ... to re-establish the roots of the mind in its body and in its world, going against doctrines which treat perception as a simple result of the action of external things on our body as well as against those which insist on the autonomy of consciousness. These philosophies commonly forget -- in favor of a pure exteriority or of a pure interiority ... the insertion of the mind in corporeality, the ambiguous relation which we entertain with our body and, correlatively, with perceived things. (Merleau-Ponty 1964, 3--4)

Merleau-Ponty (1962, 235) starts from the basic premise that there is already a consciousness of the lived body, the world and other people before cognitive reflection or scientific theorising begins. He maintains that knowledge of the world is impossible if an autonomous consciousness (Descartes' pure *cogito*) is postulated, because it would only recognise itself as being identical to what it thinks. Consciousness is not pure logical or rational consciousness residing in the epistemological subject, as social constructivists believe. Rather, consciousness is human consciousness that is brought about by the experiences and enactment of the lived body and is intentionally directed to the world and other people. The human body (my body, your body) is not the sum total of fragmented bodily sensations, but is, rather, lived flesh through which a person experiences and gives meaning to the world.

Cognition, in Merleau-Ponty's philosophy, is cast as always, necessarily, embodied and corporeally constituted, incorporated with the totality of lived, incarnate experiences. To ignore this is to accept a dualistic ontology, where cognition is seen as a relation of acquiring knowledge through pure logic and

abstract, intellectual concepts, and where mind and body, knower and knowing, cognition and the *Lebenswelt* are detached. As Radman (2002, 38) points out:

[T]he true source of [knowing] and creativity lies in [the] extra-logical, and in what exceeds the strictly rational or propositional. From Merleau-Ponty's phenomenological point of view, this potential is incorporated in embodied being, or perhaps in embodied thought, but even more so in the body itself, which in turn is appreciated more and more as the *minded* body ... [T]he body that is virtual rather than actual appears as a potential means which can help shift cognitive horizons from the actual towards the possible world.

It is this coupling of embodiment -- the embodied mind, which could be labelled the minded body (Radman 2002, 37) -- that makes the cognising agent's active engagement in the world possible. In this understanding, the cognising agent is seen as a peculiar being who is not only an embodied structure to his or her experiences, but also as a self-reflexive being capable of 'leaping out of oneself toward the world' (Low 2000, 17). Consequently, the cognising agent is never just a pure subject or passive observer, capable of constituting pure meanings and grasping pure essences. Neither is it pure object, to which consciousness is somehow connected and onto which culture projects and inscribes its sociopolitical formula. Rather, through the lenses of the philosophy of embodiment, cognition is seen as ambiguous and indeterminate, inseparable from human experience and the intersubjective world we share with other people. Ambiguity here refers to the actuality that neither human existence nor knowledge of ourselves, other people and the world are fixed, but are open for interpretation and action. As there are several ways for human existence to express itself, so there are several ways for consciousness to be consciousness (Merleau-Ponty 1962, 124).

Furthermore, the concept of 'indeterminate' in Merleau-Ponty's philosophy should not be interpreted to mean arbitrary or accidental; rather, it conveys the idea that consciousness is always intentional -- that is, consciousness always involves consciousness of something with the aim to act upon it and to transform it. As it is impossible to reduce cognition either to the mirroring of objective reality or to abstract symbols as the transmission paradigm maintains, so it is impossible to reduce cognition to mental processes or sociocultural constructions (as social constructivism asserts), because 'ambiguity is of the essence of human existence, and everything we live and think has always several meanings' (Merleau-Ponty 1962, 196).

Merleau-Ponty's notion of embodied consciousness implies, in educational theory and practice, that learners are not seen as isolated, autonomous constructors of knowledge. Rather, learners are seen as self-reflexive beings, who are complex fabrics of relations, inextricably intertwined with

all else. Accordingly, learning and knowledge happen at the interstices of multidimensional contexts and complex situations in which learners operate and of which they form an integral part.

Merleau-Ponty's views of cognition and embodied consciousness are the starting point for developing an enactivist theory of cognition. In this theory, learning is seen as a complex structure of relations and occurs in the possibility for shared action, rather than in isolated minds or brains.

COGNITION AS CO-EMERGENCE AND THE LEARNING EXPERIENCE

In this section, the philosophy of enactivism and its implications for the learning experience are explained. Enactivism, as a philosophical approach, is rooted in two major views: Merleau-Ponty's phenomenological view of ontological embodiment (1962, 1968) and Bateson's biological perspective of co-emergence (the interrelationships of organisms with one another and their environments) (1979). This idea has been developed by Maturana and Varela (1987).

On the basis of Merleau-Ponty's phenomenological view of ontological embodiment, enactivist theorists, such as Davis, Maturana, Rosch, Sumara, Thompson and Varela, claim that the body as flesh is not only a lived structure to experiences, but also that things have no meaning independent of the embodied consciousness of the agent who is also the setting and subject of cognition (Sumara and Davis 1997, 416). Varela, Thompson and Rosch (1991, 27) maintain -- pertinently for the educational context -- that 'reflection is not just on experience, but reflection is a form of experience itself and that [this] reflective form of experience can be performed with mindfulness/awareness'.

In this view, cognition depends on the kind of experiences that come from being a lived body that is part of a biological, psychological, cultural and planetary system. The cognising agent is seen as a self-reflexive being who, as an incarnate presence in the world, acts upon and at the same time transforms the boundaries between the specifics of the corporeality of the body as it is lived and experienced and the environment. In the words of Merleau-Ponty, there is a dialectical synthesis ('*action-à-deux*' or 'coupling') between the incarnated body and the world: 'When I look into myself, I am referred to the world. And when I look into the world, I am referred to myself' (Merleau-Ponty 1962, x--xi). Consequently neither knowledge, objects, nature, other people, the world nor communication networks can be understood as polar opposites to the cognising agent.

Following Merleau-Ponty, Sumara and Davis have extended the notion of dialectical synthesis to the level of a complex ecology ('structural couplings') or organismic relationality ('co-emergence'). They attempt to understand learning in terms of the co-emergence and mutual specification of learner and environment. Cognition is seen as a complex co-evolving process, where systems interact and affect each other and their environment. Moreover, Sumara and Davis maintain that cognition is inseparable from the embodiment of a system. They explain: '[T]he individual is understood to be part of -- that is, a subsystem to -- a series of increasingly complex systems (such as a classroom, a school, a neighbourhood, a culture, humanity, the biosphere). We might say that the notion of "embodied knowledge" extends to bodies that are much larger than our own' (1997, 416).

According to the notion of embodied knowledge, Sumara and Davis (1997, 412) argue that learning is 'occasioned' rather than 'caused' and that knowing and learning are situated in and co-emerge with 'complex webs of experience'. It is thus impossible to 'establish a causal relationship between a teaching action and a learning outcome' (Sumara and Davis 1997, 412), because cognition and environment are simultaneously enacted through the learning experience.

The enactivist non-linear approach to learning challenges the conventional dualistic approach that assumes a direct, causal and linear relationship between teaching and learning, where knowledge is reduced to acquiring information. Rather, learning is seen as a complex web of interactions where the learner and the learning environment are dialectically engaged. Teaching and learning are understood to occur in the complex relational spaces between the teacher, the learner, the teaching and learning environment, and the broader community. We can never establish a causal relationship between a teaching input and a learning outcome because, in the process of teaching and learning, where two or more people are engaged in conversation, new possibilities for action and knowledge creation arise.

The idea of co-emergence prompts us to understand that every life phenomenon is inextricably intertwined with everything else. Following this understanding, learners are not seen as situated within particular contexts, but as part of their context. The contexts of teaching and learning are never fixed and determined, either by solitary cognising learners or by truth-determining tertiary educational authorities. Rather, all the contributing factors in any teaching/learning situation exhibit intricate, ecological and complex related relations: 'both the cognising agent and everything that it is connected to are in constant flux, each adapting to the other in the same way that the environment evolves simultaneously with the species that inhabit it' (Sumara and Davis 1997, 414). In this view, knowledge is seen as a dialogical process of inter-action: as the learner learns, the context

changes because one of its components, which forms part of a larger complex web of experiences, changes. Likewise, as the context changes, so does the identity of the learner, who is intrinsically part of the context (Sumara and Davis 1997, 414).

Questioning perspectives of teaching and learning, where cognition is seen as either a representation of the objective world (objectivism) or as subjective constructions of learners (constructivism), the enactivist perspective on cognition changes our view of knowledge. Knowledge is understood as a domain of possibilities, as contingent, contextual and always evolving; it is never fixed, predetermined or absolute. Learning is seen as participation in the world and always occurs within a context. The contexts of learning encompass all domains of existence, including sensual ways of knowing and learning. Consequently cognition, according to enactivism, involves not only rational thinking but all forms of learning, namely emotional, sensual, existential, spiritual and experiential learning.

Against the backdrop of re-evaluating the current social constructivist approach to teaching and learning critical reasoning, both Merleau-Ponty's philosophical insights of knowledge and human experience and the enactivist paradigm of knowledge as a dialogical process of inter-action are relevant. The enactivist paradigm, founded on Merleau-Ponty's idea of embodied consciousness, has specific implications for teaching and learning critical reasoning in ODL. This is the topic of the next section.

IMPLICATIONS OF ENACTIVISM FOR TEACHING AND LEARNING CRITICAL REASONING IN ODL

Human beings are complex, environments are rich and contexts of learning are diverse. Therefore the theoretical assumptions that learning can be prescribed, learning outcomes determined and that knowledge is something that can be acquired, whether constructed by the learner (constructivism) or external to the learner (objectivism), need to be reconsidered. The idea that critical reasoning may involve more than an intellectual engagement from learners and a cognitive understanding of other people's and their own preconceived ideas and stereotypes arises from many years of teaching critical reasoning and developing critical reasoning course material. Many educators in the field of critical reasoning, such as Bryan and Clegg (2006), Paul and Elder (1994), MacKeracher (1996), Mezirow (1996) and Wolcott and Lynch (2002), follow a cognitive skills approach, maintaining that there are general cognitive skills that learners can acquire, which would equip them with the necessary traits to become independent critical thinkers. For instance, Mezirow (1996, 163) asserts

that a learner's critical reflection on underlying assumptions and fundamental premises opens up meaning perspectives that are 'more inclusive, differentiating, permeable, critically reflective, and integrative of experience'. This view sees the learner as an autonomous agent who, through critical reflection, constructs knowledge and meaning derived from her interaction with other phenomena in the world.

While I agree with the importance of fostering critical reasoning skills among learners, the teaching of informal fallacies and argumentation techniques is only a starting point in a process of helping learners to become independent critical thinkers. As a practitioner of critical reasoning, I ask pertinently whether the current cognitive skills approach still centres on the formal instruction of learners, where the outcomes of learning are controlled and where learners are expected to repeat the educator's knowledge and to seek solutions to the educator's problems -- rather than on integrated learning, where knowledge construction is encouraged across a broad range of existential, social and cultural possibilities.

In response to this problem, I maintain that the social constructivist approach to the current critical reasoning module falls short in acknowledging the complexity of meaning-making and the dynamics of experience in the learning experience. Moreover, I opine that social constructivism does not take into account the idea that meaning production is never isolated from the intersubjective niche of the teaching and learning environment. By contrast with a social constructivist approach, enactivism recognises the ODL environment as an intersubjective niche of teaching and learning of which learners and meaning creation are integral parts. As I have pointed out in this article, social constructivism overlooks the fact that all activities, including learning, are embodied processes involving the data and lived experiences of learners. Learning, and learning critical reasoning, is an important phenomenon of this kind.

Fenwick (2000, 247) observes that a constructivist view of learning 'depersonalizes the learner as an autonomous rational knowledge-making self, disembodied, rising above the dynamics and contingency of experience'. Drawing on Michelson's (1996) feminist view of learning, Fenwick (2000, 248) points out that the reflective or constructivist perspective 'denigrates bodily and intuitive experience, advocating retreat into the loftier domains of rational thought from which "raw" experience can be disciplined and controlled'. More can be said about a feminist view of learning, but such an undertaking falls outside the scope of this article. Nonetheless, a pedagogical view of teaching and learning that considers the process of knowledge construction as predominantly a rational process of critical reflection falls into the trap of Cartesian dualism, where learners are divided from the learning environment and from their own life-worlds and intuitive experiences.

Drawing on the Merleau-Pontian view of embodied consciousness and the notion of dialectical synergy between the self-reflexive cognising agent and the intersubjective world, I maintain that critical reasoning is more than an intellectual activity of the processing mind. Rather, critical reasoning is seen as a continuous and open enterprise of learning, inseparable from the complex fabric of everyday experiences, and where the self-reflexive learner plays a central role in meaning creation but is, at the same time, affected by the learning environment. As self-reflexive agents, learners do not passively inhabit a world, but interpret it, act upon it and transform it, while they are at the same time intrinsically part of an intersubjective world which affects them.

I consider knowledge as embodied and learning as participation in the world and as a process that occurs in all domains of existence (Davis, Sumara and Luce-Kapler 2000, 64). Consequently, I see critical reasoning as an open, embodied process of which the learning outcomes cannot, finally, be determined or controlled. I am not claiming, though, that formative and summative assessment is redundant or ineffective. As is the case in any other module that forms part of the Higher Education Qualification Framework, formative and summative assessment in the critical reasoning module is an integral part of the educational practice of assessing learners' performances. What I do claim is that the current pedagogical approach to teaching and learning critical reasoning in ODL, which is still a mix of the old transmission and social constructivist paradigms, needs to be reconceptualised in order to provide practical direction to learners so as to apply critical reasoning concepts and skills to their own lived experiences (life-worlds) and learning situations. This contention also concurs with Heydenrych and Prinsloo's (2010, 10--11) claim that the aspect of context (learners' life-worlds and broader community networks), in which distance education fulfils a specific role, is of vital importance to developing 'learning theory, curriculum and innovative student support in an era characterised by fluid networks, risk and super-complexity'.

CONCLUSION

The preceding discussion reveals critical shortcomings in the current social constructivist approach to critical reasoning at Unisa as an ODL tertiary institution. I have suggested that an enactivist paradigm would be valuable to reconceptualising teaching and learning critical reasoning in ODL by recognising that learning is a complex process that engages learners as whole persons who are intrinsically part of a larger complex web of interactions that affects them, while they at the same time act upon and transform complex systems. Enactivism maintains that the outcomes of learning cannot be determined and knowledge is

a domain of possibilities, inseparable from the life-worlds of learners (Davis, Sumara and Luce-Kapler 2000), which form the vital context for thinking, teaching and learning to take place.

While I argue that enactivism challenges the assumptions of objectivism and social constructivism and contributes to our understanding of how learning takes place, it should not be seen as the golden answer to all the obstacles in education. In fact Fenwick (2000, 260) points out that in the enactivist approach, ethical issues of right action and justice which are fundamental issues in education become problematic. A critical question in this regard: If all interactions between people (lecturers, learners and broader networks) co-emerge in ways that specify one another, ‘what sort of reference point can be used to guide intention toward some deliberate pedagogical goal?’ (Fenwick 2000, 260). Furthermore, within an enactivist perspective it is not clear how individual integrity is maintained in a ‘structural coupling of consciousness’ (Sumara and Davis 1997, 416). Fenwick (2000, 261) raises the concern that the enactivist learning theory implies that ‘the interests and identities of individual elements be surrendered to the greater community’. Enactivism, like any other pedagogical paradigm, is open for critique. However critical evaluations of learning theories, such as enactivism, serve as analytical tools to reflect critically on our own beliefs and values to adapt the most appropriate learning theory to critical reasoning at Unisa as an ODL context. To this end, I contend that there are valuable lessons to be learnt from enactivism.

If lecturers in critical reasoning at Unisa choose to adopt an enactivist learning theory, some of their theoretical assumptions underlying their teaching approaches, their curriculum designs and an awareness of the broader context within which the production and delivery of curricula take place would need to be reconsidered. For instance, they would need to recognise that learning is a complex process that engages the learner as a whole person, who is part of a larger complex web of interactions. This larger web of interactions encompasses Unisa’s open distance learning setting, the classroom milieu, interaction between lecturers and learners, and broader stakeholder communities. Unisa, as the fifth largest mega ODL tertiary institution in the world, already promotes the development of e-learning resources, open access to modules, the establishing of learning environments that are flexible and adaptive in real time to learner actions, of flexibility in teaching methods, in assessment criteria and in learning conditions, and of lifelong learning as supported by the Commonwealth of Learning (Sonnekus, Louw and Wilson 2006). In line with Unisa’s flexible, holistic and integrated ODL approach to teaching and learning, critical reasoning educators should reconsider the question of how we learn things and understand the process whereby meanings are created, not only rationally, but also across

multidimensional contexts and complex situations in which learners operate and of which they form an integral part.

A keystone of my argument is that critical reasoning practitioners should reflect critically on some of the ideas underlying the current social constructivist approach to teaching and learning critical reasoning at Unisa. One of these ideas entails the presupposition that learning is predominantly the result of critical reflection by the learner through cognitive processes. Distance education practitioners cannot assume that a teaching strategy, which requires active intellectual engagement from learners, will lead to independent thinking and enriched learning experiences. The lesson to be drawn from enactivism is that learning is not a linear process and knowledge formation does not involve rational thinking only. Rather, knowledge formation happens at the interstices of embodied everyday experiences, which incorporate emotions, the unconscious, the existential, the spiritual, the experiential, the physical environment and broader community networks in which Unisa as an ODL environment fulfils a specific role.

The intention of this article is not to provide a prescriptive core for pedagogical intervention and design of the critical reasoning module. Rather, it aims at offering an alternative evaluative angle through which to view the human activity of learning and sense-making, not as a replacement of any other learning perspectives (Jonassen 2006, 44), which can contribute to our understanding of learning and teaching, the relations between knower, society and knowledge, the roles of educators, and the epistemological and ontological assumptions that underpin our pedagogical paradigm and instructional design. This research will contribute to a critical assessment of the teaching paradigms educators employ as viable frameworks for understanding the learning and sense-making process, as well as the relationship between teaching practices and learning events. Future research in this regard would be useful to open up avenues to explore the interrelated aspects of cognition, sense-making, experiential learning, principles underlying teaching approaches, curriculum design, delivering methods and an ODL pedagogy so as to improve teaching and learning in an ODL environment driven by the principles of openness, flexibility, multidimensionality and integration.

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