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# A critical comparison of transformation and deep approach theories of learning

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This paper reports a critical comparative analysis of two popular and significant theories of adult learning: the transformation and the deep approach theories of learning. These theories are operative in different educational sectors, are significant, respectively, in each, and they may be seen as both touching on similar concerns with learning that is profound in its nature and impact on the learner—hence the case for a critical comparison. The critical analysis focused on similarities and differences between the two theories on a set of general criteria. It found that, while there are unacknowledged similarities, the differences are complementary, each theory suggesting a different way of considering the same territory, without excluding the other theory. The analysis strongly suggests the imperative for research findings from each theory to be used to inform practice and research through the other, although the literature reveals a lack of such cross-fertilization.

**Keywords:** adult learning; deep approach to learning; Biggs; higher education; Mezirow; transformative learning; transformation theory

### Introduction

This paper reports a critical comparative analysis of two theories of learning, the transformation and deep approach theories, which operate in different spheres of contemporary learning: transformation theory principally in adult education, the deep approach theory in higher education (Biggs & Tang, 2011; De La Harpe & Radloff, 2000; Isopahkala-Bouret, 2008; Karpiak, 2000; Kitchenham, 2008; Lizzio, Stokes, & Wilson, 2005; Mezirow & Associates, 2000; Taylor, Cranton, & Associates 2012). Each theory commands significant respect in its sphere, and both touch on similar concerns with learning that is profound in its nature and impact on the learner. The extent of the professional and academic following of both theories and the similarity of their respective substantive focus suggest the timely and crucial importance of undertaking such an analysis.

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The critical comparison focused on similarities and differences between the theories on a set of criteria seen as being applicable to comprehensive theories of learning. This approach was taken in order that a common, and independent, basis of comparison might be developed rather than using one theory to critique the other. The version of each theory used in the critique was taken as being the core articulation—following the work of Jack Mezirow on transformation theory and that of John Biggs on deep approach theory—while acknowledging the existence of a range of variations in both theories.

Following this introduction, a brief overview of each theory is presented.[1] The approach taken to the comparative analysis is then outlined, including the derivation and articulation of the criteria. The paper concludes with a discussion of the implications of the findings of the comparison.

### The two theories

#### The transformation theory of learning

The development of transformation theory was, according to Mezirow, based on extensive grounded research that he and Marsick had undertaken (Mezirow, 1978; Mezirow & Marsick, 1978). Transformation theory describes the operation of a number of elements that relate to a transformative learning process. This process is said to be an outcome of individuals facing a *disorienting dilemma*[2], which is a type of problem that causes a level of confusion in individuals sufficient to bring them to an awareness of there being significant and legitimate challenges to the manner in which they view and understand how their world works, with the possible result of driving them to seek to understand and resolve their disorientation. This process is said to be facilitated by learners using *critical reflection* and *rational discourse* with other adults to consider the nature of the disorientation. Such a process could lead the learners to *shift* a *meaning schema* or a *meaning perspective*: components of their personal *frame of reference* (Mezirow, 1991). The shift may be fast and *epochal*, or it may be slow and *incremental*. It may be in the *instrumental domain of learning*, learning how things work, or in the *communicative domain of learning*, learning about relationships between individuals, their presentation, mutual understanding, and beliefs about and practices of human communication (Mezirow, 1991). After a transformation in a frame of reference, individuals see themselves and their world in an improved and more effective manner, because their assumptions and outlook are modified to better fit their reality or context. Variations and modifications of these theoretical structures and processes are common in the literature, although most variations continue to use the core content of transformation in their articulations (Howie & Bagnall, 2013).

Ten steps in the transformative learning process are recognized (Mezirow, 1978, 1991, 2012; Mezirow & Marsick, 1978): (1) experiencing a disorienting dilemma; (2) self-examining, with feelings of fear, anger, guilt or shame; (3) critically assessing assumptions; (4) recognizing that one's discontent and the process of transformation are shared; (5) exploring options for new roles, relationships and actions; (6) planning a course of action; (7) acquiring knowledge and skills for implementing one's plan; (8) provisionally trying new roles; (9)

building competence and self-confidence in new roles and relationships; and (10) reintegrating new perspectives and capacities into one's life on the basis of conditions dictated by the new perspectives. These 10 steps are generally not considered as part of a single stepwise process, with one step occurring prior to another, or even where one necessarily leads to another. Rather, as Mezirow first suggested, they are a metaphorical description of praxis, an interplay or dialectic between action and understanding, which acts to produce an altered state of being and learning (Mezirow, 1978). Many commentators, incorrectly, continue to interpret the steps as a prescription for action, rather than a description of procedural elements (Mezirow, 2000, 2009; Taylor, 1997). Mezirow and Associates (1990, 2000) and Taylor et al. (2012) point to the ongoing nature of experiments with applications of the theory. In general, the theory has been applied as a means for understanding processes that have involved profound and life changing shifts in the understandings of adult learners in a wide variety of learning situations. Attempts have also been made to 'foster' transformative learning through the conscious application of processes that focus on a number of the ten steps, such as self-examining, critically assessing assumptions, or using rational interventions to work through any disorienting experiences (Kasworm & Bowles, 2012). The recognition of transformation theory as valuable is limited to adult education. Cranton and Taylor (2012) suggest that this limitation may be due to the lack of rigour and definition in uses of the theory, and of ways to effectively differentiate it from regular education (Newman, 2012). The theory's main uses have been seen as a means for integrating a wide variety of conceptualizations of human understanding and learning into a predominantly adult learning framework, and as a research vehicle for understanding adult functioning in a broad range of learning environments (Taylor et al., 2012).

### The deep approach theory of learning

The terms 'deep' and 'surface' in relation to consideration of students' approaches to learning, popularized by Biggs, Ramsden, Entwistle and others (Walker, 2005), were originally coined by Marton and Saljo, who described observing, in a research project, surface and deep levels of processing being demonstrated by tertiary education students (Marton & Saljo, 1976a, 1976b). In their initial papers on that research project, they described students, who, when given a paper to read, learned a series of disjointed facts, having used a surface level of processing, whereas those students who were able to make meaningful interpretations relating to the text, were seen as having used a deep level. Saljo (1979) suggested that most studies on learning had taken for granted the idea that learning is about 'learning stuff'. He wrote there that he developed the idea of deep and surface conceptions of how students approached learning as a useful concept, expressing the hope that it would stimulate discussion and research on 'learning about learning' in higher education. Since Marton and Saljo's original work, the deep approach theory of learning, and its equivalents, has been developed by four main academic groups: a Lancaster group, led by Entwistle, who instigated the terminology of deep and surface approaches to learning; an Australian Group led by Biggs; a Swedish group led by Marton; and a Richmond group led by Pask (Beattie, Collins, & McInnes, 1997). The term 'deep approach theory' is used here as it acknowledges that, while deep approaches to learning

have commonly been paired with surface approaches, and often promoted as empirically and objectively valid descriptions of human behaviour, they have nevertheless been operating *as* a theory, suggesting the appropriateness of the deep approach theory terminology. This paper focuses only on the theory of deep approaches to learning, leaving aside theories of surface approaches to learning, and the oft-cited 'strategic' or 'achieving' approaches to learning, because deep approach theory is the theory that is cognate with transformation theory, both theories dealing with learning that is profound in its impact on the learner.

A deep approach to learning is said to be one where students engage genuinely with the subject matter in order to generate meaningful interpretations, and understanding of it as something of value to them and their lives (Biggs & Tang, 2011). Using a deep approach involves students in using a higher level of cognitive activity, motivated by their own intrinsic desire to do well and with a preparedness to 'focus on underlying meanings, on main ideas, themes, principles or successful applications' (Biggs & Tang, 2011, p. 24). Typically, it is associated with students feeling a positive regard for the program material and, by-and-large, enjoying the process of engaging with it. Students require a requisite level of intention to engage in such a manner and this may arise, variously, from: a student's own innate curiosity, a resolve to do well, having relevant background knowledge, an ability to work at a high cognitive level, or from a preference for working conceptually, rather than with disconnected detail.

Teaching factors that predispose a student towards a deep approach to learning include: bringing out the big picture and the systems involved; inviting active responses from students; building onto what students already know; tackling student misunderstandings immediately; assessing for understanding underlying structure; and creating an encouraging atmosphere (Biggs & Tang, 2011, p. 25). The interplay of the student and teaching factors increases the likelihood of a student using either a deep or a surface approach to learning.

### The conduct of the critical comparison

The purpose of the critical comparative analysis of these two theories was to explore the ways and extent to which they are significantly alike, substantively, rather than to rate them formally in any sense. Accordingly, the critique focused on points of important similarity and difference between the two theories. The criteria on which similarity and difference were assessed, were taken as being the straightforwardly general matters that any comprehensive theory of learning must address, and on which, traditionally, theories of learning have focused attention. These matters see any comprehensive theory of learning as necessarily: (1) originating in a particular practical or theoretical context; (2) entailing a particular conception of what knowledge amounts to (its epistemology); (3) involving the learning of one or more types of content; (4) occurring in a particular range of contexts; (5) articulating the place and participation of the learner in the learning engagement; (6) indicating what role may effectively be played by any teacher who is involved in the learning process; (7) indicating the role of learner and teacher intentions in the learning process; (8) indicating the place of cognition, rationality and thinking in the learning process; and (9) leading to particular outcomes (Gagne, 1985, 2005; Rogers, Horrocks, & Ebrary, 2010).

The critical categories used in the critique, then, were as follows: (1) the origins of the theory; (2) the epistemology of the theory; (3) the learning content; (4) the learning context; (5) the place of the learner; (6) the teacher's role; (7) the place of intentionality; (8) the place of cognition and rationality; and (9) the learning outcomes.

The criterion of the origins of a theory identifies the cultural, practical or professional context(s) in which the theory arose and which may be seen as framing its nature and purpose. The epistemology of a learning theory criterion identifies how the theory, implicitly or explicitly, views the nature of knowledge and hence what learning amounts to. The learning content criterion identifies any emphases, constraints or restraints in the bodies of learning on which the theory focuses. The learning context criterion identifies the educational sector and the learners' situation on which attention is focused in the theory. The place of the learner criterion identifies how learners are seen as functioning *as* learners in the theory. The teacher's role criterion identifies the implied or articulated responsibilities, expectations and functions of teachers in working according to the theory. The place of intentionality criterion identifies the importance of learner, and where relevant, also teacher, intentionality, within the theory. The place of cognition and rationality criterion identifies for learner and teacher, the importance and nature of reasoning and deliberative thinking in learning articulated through the theory. And the learning outcomes criterion identifies the ends towards which learning through the theory gives emphasis or on which it does or does not focus.

Each criterion was applied singly as a lens for looking at each theory. The points identified on each criterion for the two theories were then compared to identify points of similarity or difference. Points of difference were then evaluated conceptually to ascertain the theoretical import of each difference.

## The critical comparison

The presentational structure of the following analyses using each criterion begins with any similarities, followed by any points of difference, and finishes by briefly looking at the implications of the similarities or differences for educational practice.

### (1) The origins of the theories

The larger cultural context in which these theories were developed was similar in its practical and theoretical drive to develop heuristics that could be utilized in the burgeoning post-compulsory teaching environments of the 1970s and 1980s, strongly influenced by an aspiration to expand the educational debate away from 'innate student capabilities' (Howie & Bagnall, 2012). Both theories were developed at a time when educational researchers and theorists were also seeking to develop better and more unified theories of student learning and learning per se (Biggs & Telfer, 1987; Haggis, 2003). That context indicates some of the spirit of each theory, and the spirit that was extant in the educational and adult learning fields at the time, and which, for instance, explains much of the popularity of the deep approach theory (Howie & Bagnall, 2012).

Within that larger context, the more particular context of each theory's development was different. Deep approach theory was developed in a range of formal higher education environments with tertiary students. Transformation theory, on the other hand, emerged as a response to an adult education sea change in the 1970s, particularly women's large-scale re-entry to studying at community colleges and universities in the USA. Mezirow wrote of having his curiosity piqued by the consciousness-raising experiences that these women students and others were having through their return to study (Mezirow, 1978, 1991, 2009; Mezirow & Marsick, 1978). He developed his ideas of perspective transformation and transformative learning as part of what he called a grounded research effort, working collaboratively with Marsick and others, within a centre dedicated to adult education. Biggs and Tang (2011, p. 21) themselves argued that the European and Australian researchers focused on bottom-up context-related research with students situated in university settings, where teaching was the primary concern, while the North Americans researchers tended to use a top-down, theory driven approach which included speculations about the 'within-the skin' functioning of students, such as motivation, intelligence and learning styles. While that characterization may be superficially plausible, both theories draw heavily on a variety of conative capacities of students (discussed later in this paper), such as intention, which belies the characterization.

Higher education was at that time, broadly speaking, populated by predominantly younger upper and middle-class, predominantly male, school leavers (Jacobs, 1996). Adult education, from which transformation theory was developed, attracted predominantly female participants more broadly across social classes and ages (Bae, Choy, Geddes, Sable, & Snyder, 2000; Blundell, 1992). Higher education students came from an educational background that pushed them towards a rigorous formal education as an essential precursor for vocational advancement. The adult learners entering adult education were largely older, had more extensive life experience, and were engaging not so much for vocational as for life-wide advancement. The adult education sector was taking Knowles's ideas of andragogy seriously in attempting to assist learners by building on their experience, inviting reflection and assuming intrinsic motivation to an extent not then prevalent in higher education (Knowles & Holton, 2005). These and related differences are reflected in the focus of each theory, with deep approach theory being oriented towards pedagogical activities and transformation theory being oriented towards facilitating self-development.

However, since that time, the gender differences have commonly disappeared or been reversed in higher education, while the age and maturity of students entering higher education has also diversified (Astin, 1997; Bae et al., 2000; Donaldson & Townsend, 2007; Goldin, 2006; Jacobs, 1996; King, 1998; Trow, 2006; West & Curtis, 2006). The types of programs being run in higher education institutions have come to resemble more closely those offered through adult learning organizations (Halx, 2010; Hunt, 2007). The cultural contexts in which the two theories were developed are thus now more similar in important respects—especially those of learners' development, background learning issues, and educational expectations—such that each theory may now be argued to be of pertinence in both contexts. As Halx (2010, p. 519) has noted, while making an argument for the use of adult education practice in higher education settings:

> The demographics of higher education today demand a reexamination of outdated pedagogical practices. Considering college and university students to be the adults that most of them are, or soon will be, would more effectively educate all of today's undergraduate students.

### (2) The epistemology of the theories

Both transformation and deep approach theories are grounded in the assumption that knowledge is a social construct and that learning is a socially constructivist engagement: one in which learners generate or construct their own learned knowledge, through their own efforts, involving interaction with their ideas and experiences in the world, and through interaction with the learning environment and with other people and their views (Phillips, 2000). Both theories assume that this epistemology should be applied explicitly in the structure of the teacher's practice, through the use of pedagogy and content that encourage socially constructivist processes in the students. Both theories assume that meaning is privately construed, with transformation theory recognizing that some of that private construal is effectively up-loaded into students by the culture in which they are raised, largely unbeknown to them, and with deep approach theory assuming that an imposition of cultural values that may assist learning is just one factor, among others, that students bring with them to their study (Biggs & Tang, 2011; Mezirow, 1991, 2012). In effect, both theories acknowledge learners as, metaphorically, the situated rulers of their own learning kingdoms, each kingdom experiencing its own learning issues imported from beyond its borders and inherited from its own historiography. The consequence of this similarity is that both theories may be incorporated into the same practice without epistemological incongruity.

### (3) The learning content

Both theories were seen as being pertinent to a broad range of learning content, but with deep approach theory targeting a somewhat narrower range of content areas than transformation theory, purely in virtue of the educational scope of the sectors in which they were developed.

Published critique of transformation theory has included arguments that its focus is biased towards deliberative knowledge and learning, rather than more practical learning (Clark & Wilson, 1991; Dirkx, 1998). Such arguments, though, would be no less true of deep approach theory, which, by its nature, is deliberative learning (Howie & Bagnall, 2012).

At another level, there are similarities in the substantive focus of the two theories. Transformation theory, for example, encourages students to develop their abilities to learn, rather than to learn a curriculum. However, as Cranton and Taylor (2012, p. 15) point out, 'little is known about its impact on traditional measures of education (grades, test scores, performance).' This feature is congruous with deep approach theory being focused on improving a students' ability to be effective learners, by using a deep approach to their learning.

Instances where both theories are applied, separately, to common curricular areas, are numerous. For example, Meek (2011), Monahan (1993), and

Campbell ([1997](#)) all promote improved legal education: Meek using transformation theory and especially the element of critical reflection, Monahan recommending a deep approach as a framework for achieving good undergraduate outcomes, and Campbell using deep approach theory to improve learner outcomes in legal dispute resolution.

### (4) The learning context

Deep approach theory focuses on teachers' syllabus delivery in university settings (Biggs & Tang, [2011](#); Entwistle, [2009](#)). Transformation theory focuses on consciousness-raising[3] in adult learning more broadly (Howie & Bagnall, [2013](#); Mezirow, [1991](#); Mezirow & Marsick, [1978](#)). Thus, the theories are influential in different but overlapping areas of learning by adults. However, the largely separate practical and academic cultures of those two sectors may be seen as having created separate strands of theorization, as is evidenced in how the theories are used and referenced. Refereed journal articles, conference presentations and books that work with and explicate versions of either deep approach theory or transformation theory have no crossovers (mentions or references) into the other theory. In Mezirow and Taylor's edited work of 2009, there is just one reference to Entwistle, a significant author on deep approach theory (Mezirow & Taylor, [2009](#)). However, in the chapter concerned, only the term 'deep learning' is used, which is an improper usage (Dirkx & Smith, [2009](#); Howie & Bagnall, [2012](#)).

Both theories suggest that the conditions under which people learn, part of the context, are important and affect the learners and their learning in important ways. Deep approach theory is applied in the learning conditions of tertiary institutions, where the mode and style of teaching and the goals and outcomes of the training or study are relatively clear. Biggs, for instance, has focused predominantly on training teachers in curriculum development and pedagogy, treating this as a key factor in promoting a deep approach to learning in students (Biggs, [1987](#), [1991](#), [1999](#); Biggs & Tang, [2011](#); Biggs & Telfer, [1987](#)). The audience in these works is clearly other university academics, and teachers of university teachers in particular. He is explicitly trying to influence the pedagogy of these groups. From the perspective of transformation theory, the conditions for learning include not only the systems of the institutions of learning, how they operate, the students' life situations, the teachers and their situations and abilities, and how any curriculum might unfold in this complex system, but also include other complex social systems, such as families and peer groups, and the larger general culture within which a student operates (Mezirow, [1991](#), [1998](#), [2000](#)). Using deep approach theory, the larger context of a student's life (social, family, health) is just one among many factors competing for a student's attention, which teachers must learn to accept, deal with and work around, if required (Biggs & Tang, [2011](#)). Transformative learning, conversely, takes these situational systemic factors as part of the landscape that may contribute to or be affected by the learning.

Within their respective learning contexts, both theories have had their use extended to a wide variety of practices. As a theory of learning, however, deep approach theory has influenced higher education disciplines almost exclusively, including the teaching of medicine, dentistry, nursing, accountancy, information

processing, languages and teaching. Transformation theory has been applied to a more diverse array of adult learning contexts, including the work of farmers in Kenya and health workers in USA, in environmental action, and in health interventions (see Cranton, Taylor, & Tyler, 2009; Mezirow & Taylor, 2009). Transformation theory has been applied to some extent in higher education settings but generally in the professional development of teachers and research higher degree supervision (Moore, 2005; Schols, 2012; Stevens-Long, 2012; Taylor, 2000a, 2007). Each theory has captured the attention of educators, but in different, and rarely overlapping streams of education.

### (5) The place of the learner

The two theories implicitly conceptualize the learner in a largely similar but not identical manner. Both theories describe the student as doing the work in bringing about their learning and both place the student in the centre of the learning process in the sense that, whatever else may occur, the learner, more so than the teachers, contexts, history or other systemic factors, is responsible for any learning that may take place. The learner is seen as an autonomous, largely self-directed individual. This is a significant similarity.

Neither theory is explicit about the internal psychic make-up of a learner's being and, in this respect, the theories are similar. For instance, Biggs sets out the student and teacher factors that promote a student's likelihood of adopting a deep approach to learning, but he does not broach what the inner person of the learner is or how this inner person might be affected. Likewise, Mezirow sets out the 10 steps through which a learner, generally, may progress, and how these create or support, transformative learning, but he does not define what a person is as a learner. He certainly explicates his general notions about what a person is, what a person's mental world is like, and how changes to those entities can take place, but it is clear from his writing that he does not attempt to articulate, in the same general manner, the inner experience of the learner *as* a learner. He is, metaphorically, articulating the learning scaffolding common to all humanity and those parts of it that are relevant and important to transformative learning (Clark & Wilson, 1991; Mezirow, 1992). When employing psychological theories, Mezirow appears to be doing so for the purpose of explaining the transformative aspect of the theory—not the learner. Both theories are presented as providing a kit of good heuristics for the teachers and adult educators for whom they are written. They do not provide a list of guidelines for the students or learners.

Deep approach theory is used to develop pedagogies that promote deep educational outcomes for students. Writing on the theory focuses on ways in which teachers and institutions can get the best from students in that regard. Transformation theory develops what could be called the role of the learner, which can fit into many different individual adult learning situations, including formal tertiary education, community education, informal education and professional development (Imel, 1998). This idea of the role of the learner is broader than the focus on the student in deep approach theory, which tends to have a narrower focus on curricular issues.

Applying deep approach theory, while taking the student's perspective, tends to focus on the pedagogical consequences of the teacher application (Biggs &

Tang, 2011; Entwistle, 2009). Transformation theory focuses more on the complex state of being a student than on student activities. It appears as though Mezirow is proposing a 'transformative state' in which transformative learning occurs, and which is similar to a physical state or a state of mind or being. It is a description designed to capture the whole of a person wherein the 'state' they are in a condition in which individuals find themselves when they are going through a transformative learning experience. It may include feelings of confusion, exhilaration, fear, doubt, curiosity, ambiguity, uncertainty and other such feelings (Mezirow, 1991). This is a very different view to that which, in deep approach theory, looks primarily at student activities, rather than a student state of mind. This difference between the theories is notable but is not one that creates an antagonistic relationship between them. Thus, if applying both theories, a student could experience both deep and transformative learning.

### (6) The teacher's role

In the two theories, while the object of the teacher's role differs—learning goals and pathways in the case of transformation theory, learning engagements towards given goals in the case of deep approach theory—the embedded characteristics of the teacher's role are largely similar. Both theories characterize the teacher as having the potential for being instrumentally influential in assisting adult learning. Writing on transformation theory most often describes a teacher's role using adjectives such as 'trusting', 'empathic', 'caring', 'facilitative' and 'encouraging' in a role of a facilitator, and often using the term 'fostering' with regards to learning (Imel, 1998; Mezirow, 1991, 2000; Taylor, 2000b, 2009). Deep approach theory focuses on how the teacher, through a variety of activities and procedures, may encourage the student to engage in a deep approach to learning process that produces good outcomes and tends to be applied through positing specific applications or curriculum rules, such as those of Biggs and Tang (2011) and of Entwistle (2009, p. 93), who suggest a pedagogy for developing 'ways of thinking and practising' in learners. The facilitative approach of transformation theory is similar to that aspect of the deep approach theory which suggests the creating of an encouraging atmosphere (Biggs & Tang, 2011, p. 25).

Both theories conceptualize the teacher as having a significant role in promoting, fostering or encouraging a person's learning. There is little that would preclude the use of one theory to achieve the ends of the other theory: using a deep approach facilitation style to promote transformative experiences or using transformation theory facilitation style to promote a deep approach.

### (7) The place of intentionality

In the two theories, the role of intention in both teacher and learner is implicitly central and important. Both theories have elements from the conative[4] domain as important factors in their conception of learning. Conation contains elements of will and volition and these elements are the forces and drives that assist a student in engaging in a course of study, continuing through frustrations and disappointments to complete their study, or, indeed, leaving the learning process to take a different path (Atman, 1987; Huitt, 1999). Mezirow has been

explicit in stating that conation is a central aspect of transformative learning, both in that it is changed during the transformative experience, and in its being required to persist throughout the process (Mezirow, 1991). He has suggested that 'conation involves both desire and volition, the intensity of which one wants to do something' and '… is a central influence on perception, remembering, problem solving, and learning' (Mezirow, 1991, p. 14). Thus, a person requires emotional strength and an act of will to continue to engage, and to actually bring about a transformative learning experience.

Biggs and Tang (2011) has also been explicit in stating that student 'intention' is a central factor in their adopting either a deep, or some other, approach to learning. Intention is part of the conative domain (Militello, Gentner, Swindler, & Beisner, 2006). For a student who adopts a deep approach to learning, the intention, according to Biggs is, 'to engage with the task meaningfully and appropriately. Such an intention may arise from an intrinsic curiosity or from a determination to do well' (Biggs & Tang, 2011, p. 16). Again, it is clear from Biggs's expression that intention is important, as he uses other conative expressions such as 'curiosity' and 'determination' to try to clarify his meaning. A further example is Biggs's discussion of a student using a deep approach to learning, when he stated that 'the deep approach arises from a *felt need to engage* the task appropriately and meaningfully', and also 'when students feel this *need-to-know …*' (Biggs & Tang, 2011, p. 16 Italics added here).

Both theories can be seen to rely on the conative aspects of each learner's intention, drive or motivation in order for them to put in the time and effort to take up a learning process, and hence to learn. This commitment to learn, a conative conceptual construct, comes from the student or the learner in both theories. It could indicate that the conative drive to perform according to one theory would crossover to the performance required for the other theory. Thus, a learner keen to apply a deep approach to learning could also be similarly keen to expand their functioning as a learner through a transformative type of learning experience.

### (8) The place of cognition and rationality

Both theories consider cognitive capacities to be a pre-requisite for the learning that they advocate. Deep approach theory posits that, in order to use a deep approach to learning, learners need innate or learned cognitive capacities to be successful. Transformation theory suggests that, in order for transformative learning to take place, the learner needs a capacity for individual critical reflection on assumptions and rational discourse with others.

However, while each theory suggests that there is a similarity in the requirements for learners to have a raw rational cognitive capacity, the focus of that capacity is different. Deep approach theory, according to Biggs and Tang (2011) focuses on learners using that capacity to understand, practise and utilize the university curriculum, this may include a critical focus on the assumptions underlying the course itself in order to better understand the application of the learning. On the other hand, transformation theory focuses the rational cognitive capacity to engage in critical reflection on broader underlying assumptions and constructions, including the reasons why the learner is studying and its

place in his or her life: factors that may or may not overlap with the curriculum (Mezirow, 1991).

The capacity for critical reflection is clearly a cognitive one. Cognitive capacity in deep approach theory is also required in understanding and facilitating course syllabus requirements, and there is no expectation, certainly not one that is assessed or written about, that a learner will expand their reflections to their larger life or deeper life assumptions (Biggs, 1999). However, it is interesting to note that Biggs, in his 2007 book, encourages teachers to engage in 'transformative reflection', which is designed to expand the teacher's capacities to learn. An interesting question to pose is whether or not Biggs is attempting to define processes for teachers that would effectively produce transformative learning—that is, fostering transformative learning for teachers.

In transformation theory, critical reflection on assumptions, especially in the communicative domain, is a required capacity and a central concept of the theory (Cranton, 2002; Mezirow, 1991, 2012; Mezirow & Marsick, 1978; Mezirow & Taylor, 2009; Taylor, 1997, 2000a). Critical reflection is not limited to curriculum, but also includes the whole experience of the learning context, including that of being a student, of negotiating study time amongst other priorities in one's life, and of other life engagements that have led to a person developing their unique frame of reference. Critical reflection on one's beliefs, assumptions and other factors that make up one's frame of reference is the scope of the critical reflection and rational discourse required by Mezirow (Mezirow, 1991). Critical reflection, according to Mezirow, can occur before, during, or after any transformative experiences. Mezirow has frequently written that critical reflection can lead to a transformation and that it is required to integrate the new transforming experiences into a person's life.

Both theories are rational in the sense that they advocate and support the learner in using a reasoned approach to intellectual operations, proposing that human progress is achieved principally through the use of rationality, science and formal education (Ponterotto, 2005). Deep approach theory is argued to assist teachers in developing better curricula that enable students to learn the central elements of the syllabus being taught in the tertiary institution (Biggs & Tang, 2011). Applications of the theory involve teachers encouraging students to use a deep approach to learning through using higher cognitive capacities, critical and rational argumentation, and the questioning of underlying assumptions upon which the framework they are studying relies.

Both of the theories support improvement in learners' cognitive abilities and capacity to be rational, and they characterize their own view of learning as requiring these abilities. Consequently, it is possible that the application of the two theories together may have an additive effect on the development of learners functioning in learning environments.

### (9) The learning outcomes on which the theories focus

Transformation theory suggests that transformative learning brings about an improved or better view of the world, and that people are 'perfectible' (Mezirow, 2000, p. 8). Mezirow has proposed in his writing that using critical reflection and rational discourse will unearth a 'truer' picture of reality for students and learners, producing a better life.

This similarity is contrasted with the way learning is defined in each model. Deep approach theory relies on highly defined criteria of learning that are contextually related to the teaching institution's syllabus. Conversely transformation theory has largely unconstrained criteria of what can bring about learning and to what the learning relates, with no requirement for the learning to be coupled to the teaching institution's syllabus (Howie & Bagnall, 2013). In this area, the two theories are complementary. However, a structural and economic problem could arise if learners, in investigating their own values and drives, determined that their course of study was no longer an adequate goodness-of-fit[5] between their values and drives and those assumed in their University courses and programs, leading to their dropping out (D'aprix, Dunlap, Abel, & Edwards, 2004; Germain & Bloom, 1999).

The distribution of learning outcomes across types of knowledge[6] is different yet complementary in the two theories. Deep approach theory focuses principally on descriptive knowledge and in assisting students to develop a body of such knowledge, and its attendant procedural knowledge (Biggs & Tang, 2011). The latter capacity to use the learning is usually assessed along with the descriptive knowledge. Dispositional knowledge is required to different degrees for different subjects. Biggs (Biggs & Tang, 2011) has suggested that dispositional knowledge, an attitude to, and an appreciation of the value of their study, is required in students to undertake a deep approach to learning, and that part of the job of the teacher is to assist its development in students, thus enabling them to better utilize a deep approach to learning (Perkins & Salomon, 2012). Thus, deep approach theory is utilized to develop ways to maximize the capacity of a student to make the required efforts to integrate the taught curriculum, which is also the normative knowledge of the discipline being taught (Biggs & Tang, 2011).

The espoused purpose of applying transformation theory is also to assist learners in developing the dispositional knowledge to learn new descriptive knowledge through developing a more flexible frame of reference. It is also to scrutinize the descriptive, procedural, dispositional and normative knowledge both of the learning organization, and what the learner brings with them, through critical reflective processes. While dispositional knowledge is aimed for in transformation theory, it is not promoted as an outcome to be taught, nor is it defined as an outcome like those typically found in an institution using deep approach theory. Rather it is seen as an often hoped-for side-effect of a disorienting dilemma. The disorienting dilemma, in this regard, can be thought of as a result of a student finding their normative knowledge (including the normative forms of their descriptive, procedural and dispositional knowledge) to be insufficient, or incorrect, or untenable, in the face of the body of the normative presentation being taught (including the normative curriculum forms of the organization's descriptive, procedural and dispositional knowledge). At the same time, the newly learned descriptive or procedural knowledge can positively affect the transformative learning process. And while transformation theory has a focus on dispositional learning, and subsequently expanded procedural and descriptive knowledge outcomes, these can conceivably be brought about by the application of deep approach theory as well.

The complementary nature of the descriptive, procedural and dispositional learning outcomes from both theories implies the possibility of potential cross applications in both adult and higher education settings. For instance, a facilitative teacher style could assist a learner in considering different dispositional responses with either transformative or deep approach theory. The presentation and pedagogical processes for developing descriptive knowledge could produce critical reflection leading to either a deep approach to learning or transformative learning. Alternatively, the conception of the learner and how a curriculum is built could reflect elements of deep approach theory, such as building in significant critical reflection on descriptive, procedural or dispositional knowledge elements, which may lead to transformative learning.

## Discussion

These two theories emerge as fundamentally complementary. This is a challenging outcome in the light of the substantial isolation of each theory from the other in both its theorization and its application in educational practice. It may nevertheless be explicable as an expression of the isolating power of the respective sectoral discourses in which the two theories have been developed and in which they are accepted as being pertinent.

Neither theory has generated telling research or critique to establish its validity (Howie & Bagnall, 2012, 2013). Hence, neither theory has a body of learning outcome data that might attract the attention of a follower of the other paradigm. At face value, though, each theory has considerable discursive authority in its respective sectoral discourse—higher education in the case of deep approach theory, adult learning and education in the case of transformation theory. The complementarity of the two theories and the similarities between the two contexts are such as to suggest that each might benefit from practical knowledge generated by the other.

What, then, are the differences here identified that might conceivably benefit the other theory. Looking firstly at what deep approach theory might have to offer transformation theory, it is clear that it offers the adult educator clear pedagogical structures that may be added to transformative processes (Biggs & Tang, 2011). It offers a stronger learning outcome in terms of descriptive and procedural knowledge, arising from the greater focus on these in deep approach theory. It offers extra opportunities for the structuring of disorienting dilemmas directly related to the area of learning, since a deep approach may be used to enhance the reflective and cognitive processes, increasing the likelihood of attaining a disorientation. And it can build on the learner intention already present by giving learners a series of opportunities to develop their thinking and hone their capacity for seeing patterns and recognizing incongruities. Using deep approach theory in adult education settings outside higher education may thus advantage teachers in facilitating learning, whether or not it increases the likelihood of transformations.

Looking, secondly, at what transformation theory might have to offer deep approach theory, it is evident that it offers critical examination processes which are an expansion of the learning domains beyond the strictly disciplinary. It

could be used to facilitate the kinds of self-reflection required for higher education students to emerge from their study as well rounded practitioners. It also offers a stronger learning outcome in terms of dispositional knowledge, since it works particularly well with dispositional learning. It could be used to build on the intention of the learners to develop through a transformative process by making use of the reflective 10-step process to have a focus on the curriculum. This may impact on student retention where the presence of a disorienting dilemma could be a precursor to leaving rather than an opportunity for development. For instance, higher education teachers could alert their students prior to their commencing study that they may experience something akin to a disorienting dilemma, which could lead to a transformative learning experience or a move away from study, helping them to plan to address that eventuality. Similarly, higher education teachers may work with the assumption that at least a number of their students may have a disorienting experience. In so doing, they could plan for it and utilize structures that would allow for the 10 steps of transformation theory to be applied.

### Conclusion

This critical comparison of the deep approach and transformation theories suggests that the two theories are substantially similar on each of the criteria: (1) the origins of the theory, (2) the epistemology of the theory, (3) the learning content, (4) the learning context, (5) the place of the learner, (6) the teacher's role, (7) the place of intentionality, (8) the place of cognition and rationality, and (9) the learning outcomes. The differences identified are complementary. Each theory offers a slightly different way of considering the same learning territory in a way that does not exclude the other. Thus, any application of deep approach theory would not deny the simultaneous application of transformation theory; neither would any application of transformation theory deny the simultaneous application of deep approach theory.

The similarities between the two learning contexts also suggest that both theories might fruitfully inform understanding and practice in both contexts. University teachers might valuably take both theories equally seriously, and encourage both a deep approach to learning and transformative learning within their syllabi (Halx, 2010). Transformative learning practitioners could likewise attempt to utilize the pedagogy resulting from deep approach theory to develop a deep transformative approach to learning. Each theory might also be enriched with knowledge from the other on the points of difference here identified, especially in the area of learning outcomes, where there are clear complementary but different knowledge outcomes.

In any event, the analysis suggests that both theories may thus be seen as being on the same map, describing both contiguous and overlapping conceptual and practical fields, which together provide a broader and richer learning theory than either does alone. This analysis may thus be seen as identifying the opportunity to take advantage of the complementarity of the theories, unrealized to date because the two theories have so far operated in their respective sectoral discourses largely independent of each other.

## Notes

1. The brief outlines provided for each theory are not comprehensive but allow for an overview of the theory. Criticism and counter-criticism of each theory have been excluded for reasons of economy.
2. Italics here identify terms commonly used in transformation theory writing.
3. Consciousness-raising, in the case of transformation theory, means learners becoming more *inclusive, discriminating, reflective, open, and emotionally open and able to change* (Mezirow, 2012).
4. The conative domain refers to the domain of intention, drives and motivations, and here we are interested in the drives that lead a person to undertake study or learning (Hilgard, 1980; Snow & Jackson III, 1997).
5. Goodness-of-fit is a concept that relates the needs, rights, capacities and aspirations of individuals as having either a favourable, minimally adequate or unfavourable fit (hence goodness-of-fit) with the qualities of their sociocultural and physical environment, in the case in question: their university (Germain & Bloom, 1999, p. 20).
6. Types of knowledge described herein are, following Fantl (2012): *descriptive*, declarative, propositional or conceptual knowledge, or 'knowing that', which identifies knowledge about reality; *procedural* or operational knowledge or 'know how', which identifies a person's knowledge about how to act or how to operate in different situations and contexts; *dispositional* knowledge, which identifies a person's drives, attitudes, values and interests in or towards other realities; and *normative* knowledge, which identifies idealized knowledge of what it is good to be and right to do.

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