

# Personal epistemological beliefs and transformational leadership behaviours

## *Authors*

Emma L. Tickle  
Dr Joanne Brownlee  
Di Nailon

School of Early Childhood Education  
Queensland University of Technology  
Victoria Park Road  
Kelvin Grove Q 4059 AUSTRALIA

Contact: Dr Joanne Brownlee  
Email: [j.brownlee@qut.edu.au](mailto:j.brownlee@qut.edu.au)

In Press:  
The Journal of management Development Volume 24 (2005)

## *Abstract*

The recent emergence of epistemological beliefs as a basis for understanding what and how knowledge is used in the context of a teacher's professional practice has implications for the study of leadership behaviours. This paper contends that transformational leaders display many behaviours characteristic of constructivist teachers in terms of facilitating learning in subordinates by providing support and development opportunities. As a result, studying epistemological beliefs may provide insight into the behaviour of transformational leaders in organisational settings and contribute to leadership training and development.

## *Keywords*

transformational leadership, learning, values, beliefs, epistemological beliefs

# Personal epistemological beliefs and transformational leadership behaviours

## Introduction

Within the body of literature on leadership, considerable attention has been paid to the theory of transformational leadership, first outlined by Burns (1978). Pearce, Sims, Cox, Ball, Schnell, Smith and Trevino (2003) describe transformational leaders as those who engage in behaviours that

- Transmit a sense of mission,
- Delegate authority,
- Coach and teach, and
- Emphasise problem solving and the use of reasoning (Pearce *et al.*, 2003, p. 281).

A large body of work now exists showing the positive effects of transformational leadership, not only on subordinate behaviour, but also on organisational outcomes. Recently, research attention has shifted to investigating factors underlying transformational leadership behaviours and to ways that transformational leadership behaviours can be identified and developed (Barling, *et al.*, 2000; Kelloway & Barling, 2000; Sivanathan & Fekken, 2002; Sacharatos, Barling & Kelloway, 2000). One emerging area of interest is the study of the value and belief systems of transformational leaders (Krishnan, 2001), with research indicating that an individual's behaviour is "stimulated" by their core beliefs (Russell, 2000, p. 76). Such core beliefs may affect a leader's metacognitive and cognitive processes, and in turn influence the leader's thoughts and behaviours (Lord & Emrich, 2001). It is therefore argued that by understanding core beliefs characteristic of transformational leaders, such leaders can be identified and developed through training (Krishnan, 2001).

It is our contention that the study of epistemological beliefs, that is, an individual's core beliefs about knowing and learning, may provide further insights into the decision-making processes and behaviours of transformational leaders. We believe that in the same way epistemological beliefs have been shown to filter all other beliefs and therefore influence the professional practice of educators working in various learning environments, these beliefs may influence the cognitive processes of those in leadership roles, thus influencing the leader's professional practices. Further, we contend that leaders displaying transformational behaviours will not only hold different epistemological beliefs to those who display less transformational leadership behaviours, but that the epistemological beliefs will be relatively sophisticated. Finally, we believe that studying the epistemological beliefs of transformational leaders may provide insight into the effectiveness of coaching and training strategies described in the literature. Epistemological beliefs can be developed through both formal and informal learning activities and it is possible that through the process of coaching and training in leadership settings, the epistemological beliefs of these individuals are actually maturing. It is possible that changes in epistemological beliefs brought about by coaching, training or other experiences reflect changes in the cognitive processes of the individual. Strategies known to enhance epistemological development could therefore be included in leadership training in order to facilitate the adoption of underlying values associated with transformational leadership.

This paper begins with an overview of transformational leadership theory, including current perspectives on both the underlying values and beliefs that may explain behaviour and on training interventions used to develop these behaviours. The concept of epistemological beliefs is defined and followed by a review of research examining the relationship between the professional practice of educators and personal epistemological beliefs. Research demonstrating how epistemological beliefs influence thinking and learning, and how epistemological beliefs can be developed in individuals, is also reviewed. From here, theoretical links are drawn between the study of the professional practice of teachers and educators in educational settings and the behaviours of transformational leaders in organisational settings. The case is made for using epistemological beliefs in studies of transformational leaders such that the outcomes may inform research on leadership training.

## **Transformational leadership**

The theory of transformational leadership, first outlined by Burns (1978) has attracted considerable attention from leadership researchers in recent times. Evidence of the positive effects of transformational leadership on both subordinate and organisational outcomes are well documented in the literature and include improvement in subordinate satisfaction (Hatter & Bass, 1988; Koh, Steers & Terborg, 1995), increased subordinate commitment to the organisation (Barling, Webber & Kelloway, 1996; Koh, *et al.*, 1995) and enhanced satisfaction with the job (Hatter & Bass, 1988). In sectors such as school leadership, and particularly school reform, transformational leadership behaviours have been shown to increase teacher motivation (Barnett & McCormick, 2003), increase teachers' commitment to organisational change (Yu, Leithwood & Jantzi, 2002) and positively affect organisational conditions (Lam, Wei, Pan & Chan, 2002; Lam & Pang, 2003; Leithwood & Jantzi, 1999). According to Bass (1985), transformational leaders are those leaders who elicit "superior performance", or performance "beyond normal expectations", from those they lead (as cited in Krishnan, 2001, p 126). Bass (1985) proposed four factors characteristic of transformational leaders. *Idealised influence* reflects the leader's ability to engender the trust and respect of their followers. Through idealised influence, transformational leaders become role models for their subordinates, and provide both vision and a sense of mission to the group (Humphreys & Einstein, 2003). Through *inspirational motivation*, the transformational leader inspires subordinates to "try harder" for the benefit of the organisation (Kelloway & Barling, 2000, p. 358). Transformational leaders communicate a clear, optimistic and attainable picture of the organisation's future, encouraging subordinates to develop "beyond the norm" so that the organisation can also grow and develop (Sarros & Santora, 2001b, p. 386). Transformational leaders use *intellectual stimulation* to challenge their subordinates to think about work-related problems in new ways (Kelloway & Barling, 2000; Pounder, 2002). Such leaders encourage both creativity and innovation in the workplace, and subordinates are free to try new approaches, confident that their ideas will not be publicly criticised if they differ from those of the leader (Coad & Berry, 1998). Trust and respect are given by the leader, creating an environment where there is "some tolerance for mistakes occurring as learning proceeds" (Coad & Berry, 1998, p. 166). Transformational leaders coach and support their subordinates, and ensure that the appropriate resources, materials and skill development opportunities are provided (Sarros & Santora, 2001b). Finally, transformational leaders respond to the individual needs of subordinates, treating each subordinate as an important contributor to the workplace (Coad & Berry, 1998; Sarros & Santora, 2001b). This *individualised consideration* means that transformational leaders provide challenges and learning opportunities and, through coaching, encourage the development of "appropriate workplace behaviour" (Sarros &

Santora, 2001, p. 385). Transformational leadership theory places considerable emphasis on the developmental processes of subordinates (Bass, 1997). Avolio (1999) summarises this by suggesting the transformational leader acts as a “coach, mentor, teacher, facilitator, confidant and counsellor” (as cited in Kelloway & Barling, 2000, p. 359).

By contrast, transactional leadership is described as a performance-based system where followers are rewarded or disciplined on the basis of work performance (Bass & Avolio, 1990). As Gardner and Stough (2002) note, the key characteristic of transactional leadership is that of an exchange taking place between the leader and the subordinate. In this “leader-member” exchange relationship, the leader fulfils the needs of the followers in exchange for the subordinate’s performance meeting basic expectations (Gardner & Stough, 2002, p. 68). Leaders act by initiating structure, clarifying roles and distributing rewards to their subordinates. Subordinates find motivation in the reward offered for their efforts (Pearce, Sims, Cox, Ball, Schnell, Smith & Trevino, 2003). Researchers further define transactional leadership in terms of two distinct behaviour-based types: management by exception (MBE) and contingent reward. In MBE, leaders implicitly trust that their subordinates will finish the job to a satisfactory standard. MBE leaders take action only when there is evidence of things “not going according to plan” (Coad & Berry, 1998, p. 165). These leaders generally avoid initiating change, preferring to instead maintain the status quo (Sarros & Santora, 2001b). Leadership utilising contingent reward motivates subordinates by offering “tangible, material rewards” for their efforts (Sarros & Santora, 2001b, p. 388). Such rewards may include praise, pay increases, bonuses and promotion (Coad & Berry, 1998). It is the role of leaders to facilitate the achievement of work objectives agreed upon by followers (Sarros & Santora, 2001a). Leadership by contingent reward can be either active, where the leader actively seeks out performance information, or passive, where the leader acts only where a variance in performance is brought to their attention.

### ***Emerging areas of research interest in transformational leadership***

Three key areas of interest in the study of transformational leadership are the underlying beliefs that may predispose individuals to particular leadership styles, the influence of metacognition and cognition on leadership behaviours, and avenues through which transformational leadership behaviours can be identified and developed (Barling, *et al.* 2000; Kelloway & Barling, 2000; Sivanathan & Fekken, 2002; Zacharatos, *et al.* 2000). These are discussed in the following sections.

### **Beliefs**

Researchers investigating the links between values and beliefs and leadership behaviour suggest that the behavioural characteristics that differentiate one leadership paradigm from another may be explained through assessing differences in the leader’s value and belief systems (Burns, 1978; Krishnan, 2001; Sarros & Santora, 2001a). The study of values and beliefs as a means of understanding leadership behaviour is therefore advocated by many leadership researchers in the literature (see for example Burns, 1978; Covey, 1990; Dolan & Garcia, 2002). Theorists investigating leadership in the context of learning organisations also advocate research that “specifically addresses” the beliefs of managers relative to their behaviour (Ellinger & Bostrom, 2002, p. 151). Recent work by Sarros and Santora (2001a) and Krishnan (2001) has sought to investigate the values and belief systems held by transformational leaders, with both studies concluding that transformational leaders do indeed report value systems that are distinguishable from other types of leaders. In particular, transformational leadership behaviour is linked with

values that encourage personal and professional development, such as achievement, self-direction and stimulation (Sarros & Santora, 2001a).

## **Metacognition and cognition**

In a separate body of literature, leadership researchers have sought to understand and measure the metacognitive and cognitive processes that guide a leader's thoughts and behaviours (Lord & Emrich, 2000; Wofford & Goodwin, 1994). A study by Wofford, Goodwin and Whittington (1998) explored the metacognitive processes of transformational and transactional leaders through analysing behavioural reports from subordinates. The researchers found that thought processes associated with transformational leadership behaviours were indicators of transformational cognitions, while thought processes associated with transactional leadership behaviours were indicators of transactional cognitions. These cognitions then, in turn, predicted transformational and transactional leadership behaviours as measured by Bass' (1985) Multifactor Leadership Questionnaire (Wofford, *et al.*, 1998). Thus, the study of metacognitive and cognitive processes and their influences on leadership behaviour is an important area of leadership research (Lord & Emrich, 2001).

## **Development of transformational leadership**

A final key area of research relates to ways in which transformational leadership behaviours can be developed in leaders. Bass (1990) suggested two methods for training transformational leaders. The first method utilises individual counselling sessions with leaders, while the second utilises group-based training interventions. In both cases, leaders complete questionnaires designed to measure transformational leadership behaviours prior to the training intervention. The Multifactor Leadership Questionnaire (MLQ) developed by Bass and Avolio (1991) is a tool for measuring the four factors of transformational leadership, as well as the two factors of transactional leadership and the single factor of *laissez faire* leadership (or non-leadership) described earlier. The views of subordinates toward the leader's behaviour are also gathered, generally anonymously, using 360 degree feedback. In individual training interventions, leaders work with a counsellor to look at the results of 360 degree feedback from subordinates and make comparisons with the results from the leader's self-assessment. The leader is encouraged to look at behaviours that may improve subordinates' assessments and to develop specific goals and action plans. The group-based training interventions include group sessions and workshops. Leaders undertake group activities such as watching videos, discussing the behaviour of effective and ineffective leaders, and linking observed behaviours to transformational leadership theory (Barling, *et al.*, 1996; Bass, 1990). Research by Kelloway and Barling (2000) confirms that a combination of training and coaching does in fact lead to improved transformational leadership behaviours. Using 360 degree feedback, Kelloway and Barling (2000) showed that subordinates noticed changes in the behaviour of leaders who had completed training interventions designed to develop transformational leadership behaviours. Further, the researchers found that the attitudes and behaviours of the subordinates themselves change in response to leaders' perceived enhanced transformational leadership skills. While evidence from these studies suggests that transformational leadership training works (since it leads to the development and implementation of transformation leadership behaviours), Kelloway and Barling (2000) suggest that more research is required to understand how and why these training and coaching interventions work. A distinct body of research related to personal epistemological beliefs may provide insights into how beliefs, metacognition and cognition and training relate to transformational leadership tendencies.

## Personal Epistemology

In the area of educational research, the study of epistemological beliefs has emerged as a new field of inquiry with the potential to provide a core set of beliefs that can be used to investigate teaching behaviours and practices (Brownlee, 2000). Research on personal epistemology as a belief system is outlined below, followed by a discussion of the influence of these beliefs on metacognition and cognition and the impact of training on epistemological development.

### *Personal epistemological beliefs*

Epistemological beliefs are defined as beliefs about knowing and learning that reflect views on what knowledge is, how it is gained, and the limits and criteria for determining knowledge (Perry, 1981). Epistemological beliefs consist of an individual's beliefs about the certainty of knowledge, the organisation of knowledge, and the controls an individual has over knowledge (Schommer-Aikins & Hutter, 2002). Early work on epistemological beliefs by Perry (1981) focused on undergraduate students as they progressed through studies at Harvard University. Perry found that, over time, students' attitudes toward knowledge and learning changed. The students developed progressively more complex and integrated ways of viewing the world, with the dualistic view that knowledge is simple and certain and could be transmitted by authorities evolving into the relativist view that knowledge is complex, tentative and uncertain. Perry's (1981) conceptualisation of epistemological development as a continuum was supported by researchers including Kitchener and King (1981) and Ryan (1984). However, whereas Perry's research suggested epistemological beliefs were unilateral, work by Posner, Strike, Hewson and Gerzog (1982) and more recent work by Schommer (1990, 1994) and others suggests that epistemological beliefs may be multi-dimensional, and that the dimensions mature at varying rates. Schommer (1994) proposed five more or less independent epistemological dimensions:

- Simple Knowledge (knowledge is simple rather than complex),
- Certain Knowledge (knowledge is certain rather than tentative),
- Omniscient Authority (knowledge is handed down by authority rather than from reason),
- Quick Learning (learning is quick or not at all) and
- Innate ability (the ability to learn is innate rather than acquired).

Thus, a person holding naïve epistemology along all five dimensions generally believes that:

- Knowledge is simple, clear and specific,
- Knowledge resides in authorities and is therefore unchanging,
- Concepts are learned quickly or not at all; and
- Learning ability is innate.

In contrast, a person holding sophisticated epistemology along all five dimensions generally believes that:

- Knowledge is complex and uncertain,
- Knowledge can be learned gradually through reasoning processes and
- Knowledge can be constructed by the learner.

(Schommer, 1990, as cited in Howard, McGee, Schwartz & Purcell, 2000, p 455)

Initial research attention on epistemological beliefs has focused on the professional practice of teachers and educators in formal education settings, including early childhood, secondary and tertiary learning environments. Researchers including Arrendondo and Rucinski (1996), Brownlee (2000, 2001) and Berthelsen, Brownlee and Boulton-Lewis

(2002) believe that epistemological beliefs can provide a basis for understanding what and how knowledge is used in the context of a teacher's professional practice. Recent investigations into the relationship between a teacher's personal epistemological beliefs and their teaching behaviours suggest that epistemological beliefs influence the choices and decisions a teacher makes in the classroom, including teaching methods, class management and learning focus (Chan & Elliot, 2000). A study by Arrendondo and Rucinski (1996) found that teachers with relativistic epistemological beliefs use more constructivist teaching strategies than those with naïve epistemological beliefs. Arrendondo and Rucinski (1996) also found that teachers with relativistic epistemological beliefs are more innovative, democratic and empathetic, while teachers holding naïve epistemological beliefs tend to adopt a more transmissive approach to teaching. The teachers considered knowledge to be absolute and tended to assume that children learn from the direction of knowledgeable others. Brownlee (2000, 2001) found that student teachers holding relativistic (mature) epistemological beliefs were more reflective about their own thinking and were more likely to employ teaching practices that helped children construct their own meanings. Teachers with relativistic epistemological beliefs were also found to be more aware of how they and others construct meaning. These teachers view teaching as a process of facilitation and therefore seek to develop active teaching and learning partnerships with those they teach (Brownlee, 2001).

### ***Metacognition and cognition***

Research into the influence of epistemological beliefs on thinking and learning suggests that an individual's beliefs about the nature of knowledge and learning are linked to comprehension, metacomprehension and metacognitive capacity, interpretation and persistence in working on difficult academic tasks (Brownlee, 2000; Schommer, 1990, 1994; Schommer-Aikins & Hutter, 2002; Tasi, 1998). Posner *et al.* (1982) postulated that epistemological beliefs about knowing and learning in fact filter all other knowledge. Perry (1981) and Belenky, Clinchy, Goldberger and Tarule (1986) have proposed that individuals with more sophisticated epistemological beliefs (e.g. relativistic) are more likely to engage in personal reflection and analysis about their understandings and use of knowledge. Individuals who believe in the complexity of knowledge are more likely to acknowledge the complexity of knowledge, to take multiple perspectives, to be more flexible and think in a time consuming, reflective manner. In a study on individuals' thinking about everyday complex issues, Schommer-Aikins and Hutter (2002) found that individuals who hold sophisticated epistemological beliefs appear to "thoughtfully guide their thinking" with their beliefs (p. 14). Such metacognitive awareness differentiates mature epistemological beliefs from naïve epistemological beliefs. Schommer-Aikins and Hutter (2002) contend that understanding the "implicit presence and influence" of epistemological beliefs will provide a "knowledge base" to enhance communication and public education about complex, ill-structured contemporary issues (p. 18).

### ***Developing personal epistemological beliefs***

The notion that epistemological beliefs could change and develop is supported by Posner *et al.* (1982). In their study of middle-school, secondary and tertiary students, Posner *et al.* (1982) found that epistemological beliefs change and mature with age and participation in formal education. Although subsequent research exploring changes in, and development of, epistemological beliefs is presently limited, evidence suggesting that epistemological beliefs can be matured through professional development programs has also emerged (e.g. Brownlee, 2000; Howard, *et al.*, 2000). Kitchener and King (1981) noted strong links between higher education and the development of reflective judgement, which in turn leads to changes in epistemology. A study of the transformation of personal

epistemological beliefs of Malaysian women concluded that the formal learning experience of higher education was a significant factor, since it encouraged both self-examination and critical reflection (Reybold, 2001). Reybold (2001) further showed that experiences such as overseas cultural experiences expose individuals to complex issues, which lead to reflection and the shaping of epistemological beliefs (Reybold, 2001). Brownlee (2001) found that changes in the epistemological beliefs of student teachers could be brought about by immersing students in a constructivist learning environment and by encouraging students to explicitly reflect on their personal epistemological beliefs. Howard *et al.* (2000) also noted the significance of a constructivist learning environment to developing epistemological beliefs. In a study of teachers participating in a residential training course on using computer-based education tools, Howard, *et al.* (2000) concluded that a constructivist approach to teaching may promote actual changes in epistemological beliefs in line with constructivist philosophies. Teachers in the study participated in a constructivist, “active learning”-based, teaching environment, where they were engaged in problem solving, high levels of discussion, peer-to-peer tutoring, and learning by doing, thereby “learning about constructivism by doing constructivism” (Howard *et al.*, p. 460). Strategies demonstrated to be important for changing beliefs were included in the curriculum, and included: creating opportunities for reflection (writing, reflective activities and informal discussions concerning implicit teaching beliefs), challenging existing beliefs (through formal feedback from the instructor and informal comments of peers) and supporting the accommodation of new beliefs (by allowing time for teachers to create lesson plans incorporating constructivist approaches). Further, by creating a “community of learners” within the course, a setting encouraging trust and validation was created. This “safe” environment, considered imperative for successful constructivist learning, is also considered essential for the enhancement of intellectual growth, including the development of epistemological beliefs (Berthelsen, *et al.*, 2002; Howard, *et al.*, 2000).

Brownlee’s (2001) finding that the epistemological beliefs of student teachers could be affected by explicit reflection on their personal epistemological is supported by work in other areas of learning. Belenky *et al.* (1996) argued that higher levels of thinking and reflection about actions could be brought about through a combination of two modes of knowing: relational (encouraging individuals to access their own experiences) and impersonal (encouraging individuals to engage in ways of accessing the perspectives of experts). This process, termed “connected teaching”, showed the importance of linking potentially long-held personal theories with new theoretical knowledge. Baxter Magolda (1996) argued that linking these two areas in professional development courses is likely to engender more sophisticated epistemological beliefs. Baxter Magolda (1996) proposed the promotion of epistemological beliefs through the use of “relational pedagogy”, a formal framework through which individuals are encouraged to analyse their personal beliefs and experiences and identify evidence and theory that supports and validates such beliefs. Relational pedagogy incorporates (a) respect for the individual as a knower; (b) provision of learning opportunities that relate to the individuals’ personal experiences; (c) facilitation of a constructivist perspective of knowing and learning, and (d) provision of opportunities to access peer perspectives in order to promote reconstruction of personal epistemological beliefs.



## **Personal epistemology and transformational leadership: implications for practice**

The study of personal epistemology has potential to provide a core set of beliefs and metacognitions that could be used to investigate leadership beliefs and metacognitive processes. Further, an examination of the literature surrounding training in personal epistemology and transformational leadership suggests that similarities exist between training interventions used and constructivist teaching environments known to enhance epistemological development. It is conceivable that through leadership training, leadership behaviours are developed as a result of changing personal epistemologies.

### ***Beliefs and practice***

The study of epistemological beliefs in the work of teachers has shown positive relationships between epistemological beliefs and the teaching methods used in the classroom (Brownlee, 2001). Studies have shown clear distinctions between those teachers and educators who display behavioural characteristics associated with constructivist teaching, and those displaying transmissive teaching behaviours (Brownlee, 2000; Berthelsen *et al.*, 2002). Sophisticated epistemological beliefs are linked to both constructivist approaches to teaching and to more innovative, democratic and empathetic teaching behaviours. Naïve epistemological beliefs are linked to transmissive approaches to teaching, where knowledge is considered absolute and learned from an expert. The differences in approaches to teaching, that is, transmissive versus constructivist, appear to parallel the behavioural distinctions found between transactional versus transformational leadership behaviours. Two characteristics of transformational leadership, namely *intellectual stimulation* and *individualised consideration*, demonstrate an underlying belief in subordinate learning and development. As described earlier, the transformational leader engages in the coaching and facilitation of subordinates and creates a supportive work environment in which subordinates are encouraged to explore alternative solutions to problems. These behaviours suggest a belief that knowledge can be constructed by the learner and gained through reasoning. Such beliefs and behaviours are analogous to constructivist teaching described earlier. Conversely, transactional leaders are unlikely to be innovative or encourage the development of innovative solutions to organisational problems (Sarros & Santora, 2001b). Behaviours characteristic of transactional leaders include clarifying the roles of subordinates and initiating work structure. Such leadership behaviours may preclude the construction of knowledge by subordinates, since subordinates are not encouraged to question authority and to develop their own knowledge or meaning. The implication is that the transactional leader's behaviour demonstrates a belief that knowledge is simple, clear and specific and resides in authority, and that the leader holds relatively naïve epistemological beliefs. It can be argued that transformational leaders engage in behaviours characteristic of individuals with more mature epistemological beliefs, whereas transactional leaders demonstrate behaviours characteristic of individuals with naïve epistemological beliefs. Thus, in the same way a teacher with mature epistemological beliefs will behave differently to a teacher with less mature epistemological beliefs, the behaviour of leaders will vary depending on the maturity of their epistemological beliefs. It is therefore conceivable that epistemological beliefs, as a set of core, measurable beliefs within an individual's belief system, could explain differences in leadership behaviours.

Further justification for exploring the behaviour of leaders in the same way that teaching behaviours are examined appears in literature on learning organisations. Of particular interest is the behaviour of leaders as facilitators of learning in the organisation (Ellinger & Bostrom, 2002). The assertion that leaders facilitate learning within an organisation are

well supported in the literature on learning organisations (see Senge, 1992). Theorists including Senge (1992) note that leaders in learning organisations act as “designers, teachers and stewards” in order to facilitate learning (as cited in Pemberton & Stonehouse, 2000, p. 189). Ellinger and Bostrom (2002) suggest that teaching and facilitation is in fact a core component of leadership within the learning organisation, and that the behaviour of managers as facilitators of learning should be examined in the same way teacher behaviour is explored. Ellinger and Bostrom (2002) suggest that the workplace setting “can in fact be construed as a site for formal and informal learning and teaching activities”, making it similar to a classroom learning environment (p. 151). Cullen (1999) believes the work on learning organisations “could be further enriched by contemporary work on learning” (p. 48). The implication is that work on epistemological beliefs and learning is an area of investigation worthy of attention in organisational research. Thus, we can draw on the considerable body of research linking epistemological beliefs with the professional practice of teachers to inform the study of transformational leadership behaviours.

### ***Metacognition, personal epistemology and leadership***

Researchers exploring cognitive aspects of leadership contend that changes in leadership behaviour “require[s] changes in metacognitive processes” (Lord & Emrich, 2000, p. 554). This implies that if a leader’s metacognitive processes are being affected through, for example, coaching or training interventions, changes in leadership behaviours can be expected. As a measure of core beliefs about knowing and learning, theories surrounding epistemological beliefs may offer new insights on the metacognitive processes of transformational leaders and their relationship with transformational leadership behaviours. The study of epistemological beliefs offers a means of exploring and measuring metacognitive development in the context of transformational leadership training. Moreover, given that epistemological beliefs underlie behaviour, it is plausible that the observed metacognitive and behavioural change is the result of some change in the personal epistemology of the leader.

### ***Approaches to developing personal epistemology and transformational leadership***

A closer look at the approaches to training and coaching strategies used as part interventions outlined by Kelloway and Barling (2000) reveals similarities with strategies known to facilitate change in epistemological beliefs. In particular, the leadership learning environments described by Kelloway and Barling (2000) mirror the constructivist environments for teachers described by Howard *et al.* (2000) (through challenging existing beliefs and creating a “safe” environment in which to explore new ideas) and the relational pedagogy framework proposed by Baxter Magolda (1996) (in terms of showing respect for the individual as a knower, providing learning opportunities that relate to the individual’s personal experiences, and providing opportunities to access peer perspectives). Indeed, the learning environments shown to foster the development of epistemological beliefs described earlier, particularly the constructivist approaches outlined by Berthelsen, *et al.* (2002) and Howard, *et al.* (2000), bear similarities to the cultures appropriate for individual and group learning described in organisational learning literature. In organisations that are seen to encourage learning, the culture is such that individuals are motivated and encouraged to constantly question existing practice, and empowered to experiment with new approaches to business (Pemberton & Stonehouse, 2000). Within these learning organisations, frequent communication and the sharing of knowledge are emphasised, thereby fostering socialisation and the development of a “community” within the organisation (Stonehouse & Pemberton, 1999). Emphasis is also

placed on creating a trusting environment where mistakes are tolerated and risk-taking is encouraged (Cullen, 1999). Therefore, the study of epistemological beliefs may provide new insights into the changes in transformational leadership behaviour that result from training interventions and contribute to the success of leadership training.

## **Conclusions**

This paper provides substantial theoretical justification for using epistemological beliefs in the study of transformational leaders. Although it draws from the considerable body of literature on leadership and the growing work on epistemological beliefs, this work is at present entirely theoretical and has not been subject to empirical scrutiny. The development of appropriate research frameworks is therefore a matter of priority. Methodologies and tools for identifying transformational leaders and for measuring epistemological beliefs already exist in the literature. We suggest that a first step might be to use these to establish a set of epistemological beliefs characteristic of transformational leaders, perhaps in the same way that other value and belief sets have been developed. It is our hope that epistemological beliefs will offer the leadership researcher a new and significant field of inquiry for investigating the behaviours of leaders, and in the long term, support training interventions that target the development of mature beliefs underpinning transformational leadership.

## References

Arredondo, D.E. and Rucinski, T.T. (1996), "Epistemological beliefs of Chilean educators and school reform efforts". Paper presented at the Tercer Encuentro Nacional de Enfoques Cognitivos Actuales en Educacion. Santiago, Chile.

Barling, J., Slater, F. and Kelloway, E.K. (2000), "Transformational leadership and emotional intelligence: an exploratory study", *Leadership & Organisational Development Journal*, Vol. 21 No. 3, pp. 157-161.

Barling, J., Weber, T. and Kelloway, E.K. (1996), "Effects of transformational leadership on attitudinal and financial outcomes: a field experiment", *Journal of Applied Psychology*, Vol. 81, pp. 827-832.

Barnett, K. and McCormick, J. (2003), "Vision, relationships and teacher motivation: a case study", *Journal of Educational Administration*, Vol. 41 No. 1, pp. 55-73.

Bass, B.M. (1985), *Leadership and Performance Beyond Expectations*, Free Press, New York, NY.

Bass, B.M. (1990), "From transactional to transformational leadership: learning to share the vision", *Organisational Dynamics*, Vol. 18 No. 3, pp. 19-36.

Bass, B.M. (1999), "Two decades of research and development in transformational leadership", *European Journal of Work and Organizational Psychology*, Vol. 8 No. 1, pp 9-32.

Bass, B.M and Avolio, B.J. (1990), "The implications of transactional and transformational leadership for individual, team, and organizational development", *Research in Organizational Change and Development*, Vol. 4, pp. 231-272.

Bass, B.M and Avolio, B.J. (1991), *The Multifactor Leadership Questionnaire: Form 5x*, Center for Leadership Studies, State University of New York, Binghamton, NY.

Baxter Magolda, M.B. (1996), "Cognitive learning and personal development: A false dichotomy", *About Campus*, pp. 16-21.

Belenky, M.F., Clinchy, B.M., Goldberger, N.R. and Tarule, J.M. (1986), *Women's Ways of Knowing: The Development of Self Voice and Mind*, Basic Books, New York, NY.

Berthelsen, D., Brownlee, J., and Boutton-Lewis, G. (2002), "Caregivers' epistemological beliefs in toddler programs", *Early Child Development and Care*, Vol. 172, pp. 503-516.

Brownlee, J. (2000), *An investigation of core beliefs about knowing and peripheral beliefs about learning and teaching in pre-service teacher education students: Implementing a teaching program to develop epistemological beliefs*, Unpublished Doctoral Dissertation. Qld: Queensland University of Technology, Brisbane.

Brownlee, J. (2001), "Knowing and learning in teacher education: A theoretical framework of core and peripheral epistemological beliefs", *Asia Pacific Journal of Teacher Education and Development*, Vol. 4 No. 1, pp. 167-190.

- Burns, J.M. (1978), *Leadership*, Harper & Row, New York, NY.
- Chan, K.W. and Elliot, R.G. (2000), "Exploratory study of epistemological beliefs of Hong Kong teacher education students: resolving conceptual and empirical issues", *Asia-Pacific Journal of Teacher Education*, Vol. 28 No. 3, pp. 225-234.
- Coad, A.F. and Berry, A.J. (1998), "Transformational leadership and learning orientation", *Leadership & Organisational Development Journal*, Vol. 19 No. 3, pp. 164-172.
- Covey, S.R. (1990) *Principle-centered Leadership*, Fireside Books, Simon & Schuster, New York NY.
- Cullen, J. (1999), "Socially constructed learning: a commentary on the concept of the learning organisation", *The Learning Organization*, Vol. 6 No. 1, pp.45-52.
- Dolan, S.L. and Garcia, S. (2002), "Managing by values: Cultural redesign for strategic organisational change at the dawn of the twenty-first century", *Journal of Management Development*, Vol. 21 No. 2, pp. 101-117.
- Duell, O.K. and Schommer-Aikins, M. (2001), "Measures of people's beliefs about knowledge and learning", *Educational Psychology Review*, Vol. 13 No.4, pp. 419-449.
- Ellinger, A.D. and Bostrom, R.P. (2002), "An examination of managers' beliefs about their roles as facilitators of learning", *Management Learning*, Vol. 33 No. 2, pp. 147-179.
- Gardner, L. and Stough, C. (2002), "Examining the relationship between leadership and emotional intelligence in senior level managers", *Leadership & Organisational Development Journal*, Vol. 23 No. 2, pp. 68-78.
- Hatter, J.J. and Bass, B. M. (1988), "Superiors' evaluations and subordinates' perceptions of transformational and transactional leadership", *Journal of Applied Psychology*, 73, 695-702.
- Howard, B.C., McGee, S., Schwartz, N. and Purcell, S., (2000), "The experience of constructivism: Transforming teacher epistemology", *Journal of Research on Computing in Education*, Vol. 32 No. 4, pp. 455-466.
- Humphreys, J. H. and Einstein, W. O. (2003), "Nothing new under the sun: transformational leadership from a historical perspective", *Management Decision*, Vol. 41 No. 1, pp. 85-95.
- Kelloway, E.K. and Barling, J. (2000), "What we have learned about developing transformational leaders", *Leadership & Organisational Development Journal*, Vol. 21 No. 7, pp. 355-362.
- Kitchener, K.S. and King, P.M. (1981), "Reflective judgement: Concepts of justification and their relationships to age and education", *Journal of Applied Development in Psychology*, Vol. 2, pp. 89-116.
- Koh, W.L., Steers, R.M. and Terborg, J.R. (1995), "The effects of transformational leadership on teacher attitudes and student performance in Singapore", *Journal of Organisational Development*, Vol. 16, pp. 319-333.

- Krishnan, V.R. (2001), "Value systems of transformational leaders", *Leadership & Organisational Development Journal*, Vol. 22 No. 3, pp. 126-131.
- Lam, Y.L.J. and Pang, S.K.L. (2003), "The relative effects of environmental, internal and contextual factors on organisational learning: the case of Hong Kong schools under reforms", *The Learning Organization*, Vol. 10 No. 2, pp. 83-97.
- Lam, Y.L.J., Wei, H.C.P., Pan, H.L.W, and Chan, C.M. (2002), "In search of basic sources that propel organizational learning under recent Taiwanese school reforms", *The international Journal of Educational Management*, Vol. 16 No. 5, pp. 216-228.
- Leithwood, K. and Jantzi, D. (1999), "The effects of transformational leadership on organizational conditions and student engagement with school", *Journal of Educational Administration*, **38** (2), 112-129
- Mussig, D.J. (2003), "A research and skills training framework for values-driven leadership", *Journal of European Industrial Training*, Vol. 27 No. 2, pp. 73-79.
- Pearce, C. L., Sims, H. P. Jnr., Cox, J. F., Ball, G., Schnell, E., Smith, K. and Trevino, L. (2003), "Transactors, transformers and beyond: A multi-method development of a theoretical typology of leadership", *Journal of Management Development*, Vol. 22 No. 4, pp. 273-307.
- Pemberton, J.D. and Stonehouse, G.H. (2000), "Organisational learning and knowledge assets – an essential partnership", *The Learning Organisation*, Vol. 7 No. 4, pp. 184-193.
- Perry, W.G.J. (1981), "Cognitive and ethical growth: The making of meaning", In: Chickering, A. W. (Ed), *The Modern American College*, Josey-Boss, San Francisco, CA, pp. 76-116.
- Posner, G., Strike, K., Hewson, P. and Gerzog, W. (1982), "Accommodation of a scientific conception: Towards a theory of conceptual change", *Science Education*, Vol. 66 No. 2, pp. 211-227.
- Pounder, J.S. (2003), "Employing transformational leadership to enhance the quality of management development instruction", *Journal of Management Development*, Vol. 22 No. 1, pp. 6-13.
- Reybold, L. E. (2001), "Encouraging the transformation of personal epistemology", *Qualitative Studies in Education*, Vol. 14 No. 3, pp. 413-428.
- Russell, R. F. (2001), "The role of values in servant leadership", *Leadership & Organisational Development Journal*, Vol. 22 No. 2, pp. 76-83.
- Ryan, M.P. (1984), "Monitoring text comprehension: Individual differences in epistemological standards", *Journal of Educational Psychology*, Vol. 76, pp. 248-258.
- Sarros, J. C. and Santora, J. C. (2001a), "Leaders and values: a cross cultural study", *Leadership & Organisational Development Journal*, Vol. 22 No. 5, pp. 243-248.

- Sarros, J. C. and Santora, J. C. (2001b), "The transformational-transactional leadership model in practice", *Leadership & Organisational Development Journal*, Vol. 22 No. 8, pp. 383-393.
- Schommer, M. A. (1990), "Effects of beliefs about the nature of knowledge on comprehension", *Journal of Educational Psychology*, Vol. 82 No. 3, pp. 498-504.
- Schommer, M. A. (1994), "Synthesising epistemological belief of research: tentative understandings and provocative confusions", *Educational Psychology Review*, Vol. 6, pp. 293-319.
- Schommer-Aikins, M. and Hutter, R. (2002), "Epistemological beliefs and thinking about everyday controversial issues", *The Journal of Psychology*, Vol. 136 No. 1, pp. 5-20.
- Senge, P. (1992), *The Fifth Discipline: The Art and Practice of the Learning Organisation*, Century Business, London.
- Sivanathan, C. and Fekken, G. C. (2002), "Emotional intelligence, moral reasoning and transformational leadership", *Leadership & Organisational Development Journal*, Vol. 23 No. 4, pp. 198-204.
- Stonehouse, G.H. and Pemberton, J.D. (1999), "Learning and knowledge management in the intelligent organisation", *Participation and Empowerment*, Vol. 7 No. 5, pp. 131-141.
- Tasi, C. (1998), "An analysis of Taiwanese eighth graders' science achievement, scientific epistemological beliefs and cognitive structure outcomes after learning basic atomic theory", *International Journal of Science Education*, Vol. 20 No. 4, pp. 413-425.
- Yu, H., Leithwood, K. and Jantzi, D. (2002), "The effects of transformational leadership on teachers' commitment to change in Hong Kong", *Journal of Educational Administration*, Vol. 40 No. 4, pp. 368-389.
- Wofford, J.C. & Goodwin, V.L. (1994), "A cognitive interpretation of transactional and transformational leadership theories", *Leadership Quarterly*, Vol. 5, pp161-186.
- Wofford, J.C., Goodwin, V.L. & Whittington, J.L. (1998), "A field study of a cognitive approach to understanding transactional and transformational leadership", *Leadership Quarterly*, Vol. 9, pp55-84.