

## CHAPTER 3

### UNDERSTANDING SELF-EFFICACY

#### 3.1 Introduction

##### *Scope of the chapter*

This chapter aims to explore the concept of self-efficacy in order to apply it to H&S programmes for local mineworkers, especially those who are classified as unskilled and semi-skilled. It also begins to address the first research question of this study: *How can the concept of self-efficacy be applied to workplace H&S programmes for unskilled and semi-skilled workers in South Africa?* This is done by investigating and analysing the concept. Much research and analysis have taken place as notions of self-efficacy have evolved over the past 50 years, and it would be possible to do an entire thesis on the subject. This chapter charts the main developments, the most essential and enduring features and applications of self-efficacy, in order to understand and use the concept in an informed way. The task is undertaken in the form of a review of the established literature. Three main criteria were used to select sources:

- the prominence of the author within the wide body of literature on self-efficacy;
- whether the issue under discussion related to the topic of this study, e.g. the use of self-efficacy in the context of a rapidly developing country;
- the quality of engagement and deliberation within a particular source.

### *Introducing the concept*

I found the term ‘self-efficacy’ used in many different types of sources, with apparent semantic consistency but varying degrees of depth and thoughtfulness. The applications of the self-efficacy concept are numerous and varied and the term self-efficacy is widely used without interrogation of the original concept. A common understanding of the essential meaning of self-efficacy as ‘the belief in one’s effectiveness in performing specific tasks’ (EduTech Wiki, downloaded 17 March 2008). Such self-efficacy beliefs are inevitably founded upon a number of complex and interacting elements, to be discussed in this chapter. A single, predominant definition was not evident in the literature. The following explanations indicate some of the complexity and calibration of the concept and form a reasonable starting point:

Perceived self-efficacy is defined as people’s beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives. Self-efficacy beliefs determine how people feel, think, motivate themselves and behave (Bandura, 1994:n.p.).

A person with positive self-efficacy expects to succeed and will persevere in an activity until the task is completed. A person with low perception of self-efficacy anticipates failure and is less likely to attempt or persist in challenging activities (Kear, 2000:4).

Albert Bandura, a social psychologist, is undoubtedly the most eminent author on the subject and has been published consistently for nearly 50 years. However, many other writers have taken up and applied his ideas. The great number of references available suggests that self-efficacy developed from a fresh idea in the 1960s to an established and influential concept, now supported by a substantial body of literature.

## 3.2 Development of the concept

### *Origins of self-efficacy*

A concept analysis of self-efficacy found that, although Bandura dominates writing about self-efficacy, it was first mentioned in psychological theories of motivation in the 1950s (Kear, 2000:1). Robert White (1959) introduced the notion that certain actions and outcomes are not motivated by animal instincts or drives, but by a ‘feeling of efficacy’ or satisfaction resulting from a successful interaction with the environment. The concept did not appear to find favour again until nearly 20 years later, when it became the construct that formed the basis for Bandura’s social learning theory of behaviour change (Bandura, 1977a; Kear, 2000:2). Bandura later altered the label of his theory from ‘social learning’ to ‘social cognitive theory’, in order to distance it from the prevalent social learning theories of the day and to emphasize the critical role of cognition in people's capability to construct reality, self-regulate, encode information and direct behaviour (Pajares, 2002:1). The concept emerged from an intense engagement with theories of learning and behaviour change, as well as through empirical testing (See later).<sup>15</sup> This descriptive summation aims to establish the academic origins and credentials of self-efficacy.

In the initial stages of his work, Bandura was primarily interested in behaviour change as it related to psychotherapy or psychosocial change for therapeutic purposes. Over time, the scope of his work broadened. Bandura identifies frustration and dissatisfaction with the dominant theories of learning and behaviour change of the times as early influences. In different sources, he expresses misgivings with the Psychodynamic and Behaviourist approaches of the 1950s and 1960s (Bandura, 2004; Bandura, 2005). Concerns with the Psychodynamic approach to personal change were related to what he termed its ‘psychic determinism’ and ‘benign neglect of environmental influences’ (Bandura, 2004:614). ‘Behaviour was said to be regulated by an inner psychic life of animated impulses and complexes operating below the level of consciousness and disguised by defensive mental operations’ (ibid).

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<sup>15</sup> As stated in Chapter 1, self-efficacy is referred to in different ways in different sources. This thesis refers to self-efficacy as a concept.

Psychodynamic approaches had adopted a ‘quasi-disease model of deviant behaviour’, in which unconventional behaviour was labelled as symptomatic of psychic pathology (ibid). However, behaviourism also had limitations:

Behaviorism was very much in vogue at the time I began my career. The process of learning occupied the central position in this form of theorizing. The prevailing analyses of learning focused almost entirely on learning through the effects of one's actions. The explanatory mechanisms were cast in terms of establishing connections between stimuli and responses at the peripheral level through reward and punish consequences. The behavioristic theorizing was discordant with the evident social reality that much of what we learn is through the power of social modeling (Bandura, 2005:10).

It is not within the scope of this chapter to critique these two approaches nor to consider the validity of Bandura’s criticisms, but to identify them as contextual tensions that led to the conceptualization of self-efficacy. Overall, Bandura suggests that existing approaches to behaviour and behaviour change were largely explanatory, lacking in predictive and therapeutic power, and that the time was ripe for a new conceptualization (Bandura, 2004: 614). ‘Discontent with the adequacy of existing theoretical explanations provides the impetus to search for conceptual schemes that can offer better explanations and solutions to phenomena of import’ (Bandura, 2005: 10).

### ***Social modelling and vicarious learning***

The ability and tendency of individuals to learn and modify their behaviour as a result of vicarious experience and social modelling, rather than direct experience, was a primary research and development (R&D) focus in Bandura’s early work. The sources consulted appear to use the terms ‘vicarious learning’, ‘social learning’ and ‘modelling’ interchangeably to refer to learning that takes place vicariously, through observation or through social engagement, without direct reward or punishment. The power of social modelling to influence behaviour, especially the effects of media and peer groups, is rarely disputed today. Yet only 45 years ago, Bandura and his colleagues had to present substantial arguments and evidence to gain acceptance for a position that sounds like accepted wisdom today:

I found it difficult to imagine a culture in which its language, mores, familial customs and practices, occupational competencies, and educational, religious, and political practices were gradually shaped in each new member by rewarding and punishing consequences of their trial-and-error performances (Bandura, 2005:10).

The work of Miller and Dollard (1941) is also identified as a significant early influence on Bandura's work (Bandura, 2004; Bandura, 2005; Pajares, 2002). In spite of the obvious pervasiveness of social modelling in everyday life, there was no research to speak of on modelling processes, except the publication of *Social Learning and Imitation* by Miller and Dollard in 1941 (Bandura, 2005:11). Although they recognized modelling phenomena, these were 'construed as a special case of discrimination learning, a variation of socially endorsed mimicry' (ibid). Bandura and his team launched a programme of research, which continued throughout the 1960s and 1970s, to investigate social and observational learning as it 'typically occurs in the absence of reinforced performance' (ibid). Over the next 10 years their research demonstrated that:

- Observational learning requires neither response enactment nor direct reinforcement.
- Observational learning could lead to generalized imitation, but the process is governed by social beliefs and outcome expectations, rather than by infused reinforcement.
- Human cognition and human action cannot be viewed separately, as theorists had done in the past. Cognitive representations can serve as guides for the production of skilled performances and as standards for making corrective adjustments in the development of behavioural proficiency (Bandura, 2005: 11-12).

By the 1960s, Bandura and his research team were quite confident in publishing both research findings and theories of social learning. Bandura and Walters (1963) published a book, *Social Learning and Personality Development*, which asserted that both learning and its reinforcement could take place vicariously or through observation (Pajares, 2002:1).

However, as Bandura states,

...the value of a psychological theory is judged not only by its explanatory and predictive power, but also ultimately by its operative power to promote changes in human functioning...There were a number of entrenched misconceptions about the nature and scope of modeling that put a damper on the research and social applications of this powerful mode of learning (Bandura, 2005:13).

It is ironic that, as Bandura's ideas about social modelling and vicarious learning became more widely accepted, misconceptions about these ideas became more entrenched, affecting their functional uptake and utility. The main misconceptions to be challenged related to *mimicry*, *creativity*, *selection* and the apparent *limited cognitive* applications of vicarious learning. Bandura conducted and published research that specifically challenged these four misconceptions. Firstly, he demonstrated that learning in the form of modelling was not limited to *mimicry* or simple imitation (Bandura, 1986; Bandura, 2005):

Social modelling involved abstracting the information conveyed by a specific exemplar about the structure and the underlying principles governing the behavior, rather than simple response mimicry of specific exemplars. Once individuals learn the guiding principle, they can use it to generate new versions of the behavior that go beyond what they have seen or heard (Bandura, 2005:13).

Learning through modelling was also held to be antithetical to *creativity*. However, research conducted by Bandura, Ross and Ross (1963) revealed that exposure to different models encouraged selectivity and could possibly aid creativity of individuals. Selectivity was found to be highly individual and subject to differentials. When exposed to different models, individuals not only show discernment between models but adopt advantageous elements, improve upon them, synthesize them into new forms, and tailor them to their particular circumstances (Bandura, 2005:13-14).

When exposed to models who differ in their styles of thinking and behavior, observers rarely pattern their behavior exclusively after a single source. Nor do they adopt all the attributes even of preferred models. Rather, observers combine various features of different models into new amalgams that differ from the individual modeled sources. Thus, two observers can construct new forms of behavior entirely through modeling that differ from each other by selectively blending different features from the variant models (Bandura, 2005:14).

Vicarious learning and modelling were also not limited in their applications to simple learned actions. ‘Critics argued that modeling cannot build *cognitive* skills because thought processes are covert and are not adequately reflected in modelled actions, which are the end-products of the cognitive operations’ (Bandura 2005:14). This criticism was largely dealt with in experiments involving verbal modelling. Meichenbaum (1984) showed that cognitive skills can be promoted by verbal modelling in which models verbalize aloud their reasoning strategies as they engage in problem-solving activities. The model verbalizes and shares thought processes, such as evaluating the problem, seeking relevant information, generating alternative solutions, weighing likely outcomes associated with each alternative, selecting the best way of implementing the chosen solution, evolving strategies for handling difficulties and recovering from errors, and developing self-motivation (Bandura, 2005:14). The strategies referred to above sound rather like study skills mentoring today, but perhaps this is simply an indication of how far modelling has been integrated into modern instruction techniques.

### ***Symbolic and para-social learning***

Bandura’s achievements in demonstrating the power and cognitive reach of observational learning took place at a time which saw massive developments in telecommunications and the electronic media. Bandura soon became aware of the potential scope of this new source of social learning. He extended his notion of social learning and modelling to accommodate these new modes with the idea of ‘symbolic modelling’:

A growing influential source of social learning is the varied and pervasive symbolic modeling through the electronic media. A major advantage of symbolic modeling is that it can transmit information of virtually limitless variety to vast populations simultaneously in widely dispersed locales... Socio-cognitive influences instruct people in new ideas and practices and motivate them to adopt them (Bandura, 2005:14-15).

Put more simply, popular media, drama in particular, afford audiences the opportunity to model and adopt new behaviour through emotional engagement, identification with characters, mental rehearsal and vicarious reinforcement. This phenomenon, known as ‘para-social interaction’, has audiences adopting and relating to characters as real people with whom they identify or whom they aspire to imitate (Bandura, 1977b). In my own reading and AET experience, social learning, whether through electronic or more traditional modes, appears to be an aspect of self-efficacy that has had extremely widespread applications in education for transformation programmes. Miguel Sabido (1981) in Mexico was one of the first people to integrate Bandura’s concept of social learning into a long-running television drama in order to address social issues, literacy and family planning (Bandura, 2005:15). Since then, radio and television soap operas, such as for example Soul City in South Africa, have been used all over the developing world. Multi-media learning could be regarded as an approach to learning. However with reference to mine H&S, it may be more effectively construed as a valuable modality in the context of widespread under-education of workers in the sector.

### ***Reciprocal determinism***

The 1960s were a time of dramatic social upheaval and soul-searching. It is not surprising, therefore, that approaches, explanations and therapies relating to human behaviour were also subject to remarkable transformative changes. Modes of treatment were altered in their content, locus and agents of change (Bandura, 2004:616):

Troublesome behavior was viewed as divergent rather than diseased behavior. Functional analysis of human behavior replaced diagnostic labeling that categorized people into psychopathologic types with stigmatizing consequences... Guided mastery experiences were used to equip people with the competencies, enabling beliefs, and social resources needed to improve the quality of their lives. Efforts were directed not only at enhancing personal capabilities, but also at changing social practices that contribute to behavior problems. With regard to the locus of change, treatments were typically carried out in the natural settings in which the problems arise so as to enhance the development, generalization, and maintenance of new modes of behavior (ibid).

The boundaries between different schools of thought started eroding, and, as Bandura had always asserted, human functioning was finally viewed as the product of the ‘dynamic interplay between personal, behavioral, and environmental influences’ (Pajares, 2002:2; Bandura 2004:616). This interaction between different domains of human experience is the foundation of Bandura's conception of *reciprocal determinism*. Reciprocal determinism is interaction between:

- (a) personal factors in the form of cognition, affect, and biological events,
- (b) behaviour, and
- (c) environmental influences.

He also describes this interaction as *triadic reciprocity*. Acquired behaviour is thus motivated and regulated by the complex interplay of contextual, incentive and self-regulatory influences (Bandura, 2004:614). Bandura proposed a construct relating to ‘behaviour change’ which acknowledged the reciprocal nature of the determinants of human functioning. This sounds reasonable today, but at the time it differed from existing change theories that had been concerned with only biological, internal psychological or environmental factors (Pajares, 2002:2). Reciprocal determinism offered a wide-open opportunistic base for therapeutic interventions:

Social cognitive theory makes it possible for therapeutic and counseling efforts to be directed at personal, environmental, or behavioral factors. Strategies for increasing well-being can be aimed at improving emotional, cognitive, or motivational processes, increasing behavioral competencies, or altering the social conditions under which people live and work (Pajares, 2002:2).

### ***The Agentic view***

Having gained ground in terms of social learning and acceptance of the view that human behaviour is influenced by various reciprocal determinants, Bandura turned his attention to human volition. He was committed to an *agentic* view of human behaviour, i.e. that behaviour is subject to intentional, cognitive or agentic influences, rather than unconscious internal impulses or external reward and punishment stimuli. Again, he encountered resistance. ‘This was not a hospitable time to present an agentic theory of human behavior. Psychodynamicists depicted behavior as driven unconsciously by impulses and complexes. Behaviorists depicted behavior as shaped and shepherded by environmental forces’ (Bandura, 2005:20). The Behaviourist view seemed to be especially in conflict with Bandura’s own vision of human nature.

In this conception, motivation was regulated by a crude functionalism grounded in rewarding and punishing consequences. This approach presented a truncated image of human nature given the self-regulatory capabilities of people to affect their thought processes, motivation, affective states, and actions through self-directed influence (ibid: 16).

Even new technological developments and images were unhelpful:

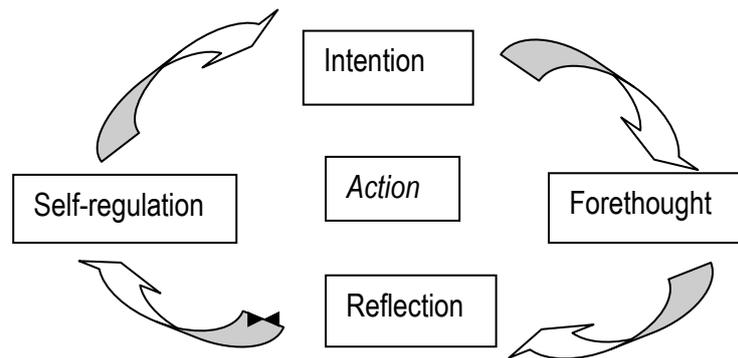
The cognitive revolution was ushered in on a computer metaphor. This conception stripped humans of agentic capabilities, a functional consciousness, and a self-identity. The mind as a symbol manipulator in the likeness of a linear computer became the conceptual model for the times. It was not individuals, but their sub-personal parts that were orchestrating activities nonconsciously. Control theories of motivation and self-regulation focused heavily on error correction driven by negative feedback loops in a machine metaphor of human functioning (ibid: 20).

In terms of Bandura's conception, to be a *sentient agent* is intentionally to influence one's functioning, life circumstances and environmental conditions and make things happen by one's actions (Bandura, 2004:618 and 2001:2). In this view, people are contributors to their life circumstances, not just products of them. People are viewed as self-organizing, proactive, self-reflecting and self-regulating, rather than as reactive organisms shaped and shepherded by environmental forces or driven by concealed inner impulses (Pajares, 2002:2). In a series of studies, Bandura demonstrated that people are aspiring and proactive organisms, not just reactive ones. Their capacity to exercise forethought enables them to wield anticipatory control, rather than being simply reactive to the effects of their efforts. They are motivated and guided by foresight of goals, hindsight of shortfalls, as well as by anticipatory notions about their own success.

### ***Self-regulation***

Bandura asserted that human motivation involves numerous variables and that many of these in turn involve cognition, rather than responses to physical or environmental stimuli. Human agency or motivation includes *intention, forethought, reflection* and *self-regulation* (Bandura, 2004:618). These core features constitute a cycle of adjustments that people make as they learn and develop, achieve and adjust personal goals.

**Table 11: Self-regulation in self-efficacy**



(Source: Adapted from Bandura, 2004:618)

Bandura demonstrated that people motivate and guide themselves proactively by setting themselves challenging goals and performance standards that create negative discrepancies to be mastered (intention). They then mobilize their effort and personal resources, on the basis of their estimation of what it will take to fulfil those standards (forethought). Reactive feedback control comes into play in the subsequent adjustments of effort in order to achieve the desired outcomes (reflection). After people attain the goals they have been pursuing, those of high perceived efficacy set a higher standard for themselves (self-regulation) (Bandura, 2005:21). Over time, the terminology changed slightly to:

Intentionality  $\Rightarrow$  Forethought  $\Rightarrow$  Self-reactiveness  $\Rightarrow$  Self-reflectiveness

Bandura concurs that human transactions involve ‘situational inducements’, but holds that they are also governed by what he terms self-evaluative outcomes, which may override the influence of external outcomes (Bandura, 2001:8). These self-evaluative outcomes extend into cognitive, psycho-social and moral domains.

People do things that give them satisfaction and a sense of self-worth, and refrain from actions that will bring self-censure... They are self-examiners of their own functioning. They reflect on their efficacy, the soundness of their thoughts and actions, the meaning of their pursuits, and make adjustments if necessary (Bandura, 2004:618).

While this sounds much like accepted wisdom today, ‘vigorous battles were fought’ over these cognitive determinants of motivation and their scientific legitimacy. Bandura’s work on self-regulating components of motivation did not fit within the traditional scientific paradigm of study. They were difficult to relate to specific observable events and could not explain the functional relations between such events. Bandura’s response was to employ a multi-disciplinary task team to enhance the status of his offerings (Bandura, 2004:618-619). Self-reactiveness and self-reflectiveness proved to be the most complex aspects of motivation, and Bandura made a clear distinction between them.

*Self-reactiveness:*

Self-reactiveness involves the ability to make choices regarding action plans, give shape to appropriate courses of action and to motivate and regulate their execution. ... Monitoring one's pattern of behavior and the cognitive and environmental conditions under which it occurs is the first step toward doing something to affect it. Actions give rise to self-reactive influence through performance comparison with personal goals and standards (Bandura, 2001:8).

(Self-reflectiveness as a deeper, more value-driven process is discussed later.)

Self-reactiveness is further governed by personal goals, standards, moral agency and assessment of performance. ‘Actions give rise to self-reactive influence through performance comparison with personal goals and standards. Goals, rooted in a value system and a sense of personal identity, invest activities with meaning and purpose’ (Bandura, 2001:8). The observations regarding goals relate primarily to personal agency, but have wider applications. Vast amounts of time and resources are spent setting both individual and collective goals in modern strategic thinking, for example, the 2013 mine H&S milestones referred to in Chapter 2. With reference to goals and the motivation to act, Bandura concludes that: ‘Goals do not automatically activate the self influences that govern motivation and action. Evaluative self-engagement through goal setting is affected by the characteristics of goals, namely, their specificity, level of challenge and temporal proximity’ (ibid). Bandura’s analysis of goals in facilitating change may be applicable to aspects of the current H&S system in mining.

As seen in Chapter 2, the setting of goals and targets is a major concern, and compliance with guidelines and standards is an elemental aspect of the system.

General goals are too indefinite and non-committing to serve as guides and incentives. ...The self-regulative effectiveness of goals depends greatly on how far into the future they are projected. Proximal subgoals mobilize self-influences and direct what one does in the here and now. Distal goals alone set the general course of pursuits but are too far removed in time to provide effective incentives and guides for present action, given inviting competing activities at hand. Progress toward valued futures is best achieved by hierarchically structured goal systems combining distal aspirations with proximal self-guidance (ibid).

Bandura found that *moral agency*, like other aspects of self-reactiveness, operates in different motivational forms, both inhibitive and proactive. The power to refrain from 'bad' or inhuman behaviour is the inhibitive form, while the proactive form motivates people to act humanely (Bandura, 2001:9). After people adopt a standard of morality, their personal standards serve as the regulatory self-influences: Positive experiences are induced when people do things that give them self-satisfaction and a sense of self-worth. Logically, they also refrain from behaving in ways that violate their moral standards, because these will bring negative experiences such as self-disapproval (Bandura, 2005:21-22). However, moral agency does not function as a fixed regulator of behaviour, but is only enlisted in certain activities. Bandura found that there are many 'psychosocial manoeuvres' by which moral self-reactions can be selectively disengaged from inhumane conduct (Bandura, 2001:9). Certain mechanisms reduce the sense of personal agency through *diffusion and displacement* of responsibility away from the self. Moral self-sanctions are also weakened or disengaged at the *outcome locus* of the process when one ignores, minimizes, or disputes the injurious effects of one's conduct, or dehumanizes the victims, attributing bestial qualities to them and blaming them for bringing the suffering on themselves (ibid). Moral disengagement that centres on the *cognitive reconstruction* of the conduct itself makes harmful conduct personally and socially acceptable; it does so by portraying it as serving socially worthy or moral purposes, masking it in sanitizing euphemistic language or comparing it with worse inhumanities.

Analyses of moral agency show that selective moral disengagement operates at a social systems level and not just individually (Bandura, 2005:22). This is very much in accordance with modern experiences of peer pressure, group mentality and even mob actions.

*Self-reflectiveness:*

Self-reflectiveness was conceived as distinct from self-reactiveness, because it involves the *metacognitive* capability to reflect upon oneself and the adequacy of one's thoughts and actions, rather than merely direct them (Bandura, 2001:10). For Bandura, self-reflection is the capability that is most 'distinctly human'. Hence it is a prominent feature of self-efficacy. Through self-reflection, people make sense of their experiences, explore their own cognitions and self-beliefs, engage in self-evaluation and alter their thinking and behavior accordingly (Bandura, 1986; Pajares, 2002:4).

Over time and in different sources, the two functions, self-reactiveness and self-reflectiveness, are referred to singly as self-regulation, self-evaluation, or self-regulatory capability (Bandura, 2005; Pajares, 2002). It was with the formulation of metacognitive, self-regulatory capabilities within motivation that Bandura's concept of self-efficacy began to take shape. Self-regulatory capability leads people to evaluate their values, the meaning of their life pursuits and their motivation, address conflicts in motivational inducements, and choose to act in favour of one over another. Bandura also realized that within this metacognitive activity, people judge the correctness of their predictive and operative thinking against the outcomes of their actions, i.e. their efficacy expectations and beliefs (Bandura, 2001:8-10).

### **3.3 Consolidating self-efficacy**

*Perception of efficacy*

Previous theorists had conceived motivation in terms of two main dimensions, a response (behaviour) and an estimate that a given behaviour will lead to a certain outcome (outcome expectation). Bandura postulated a more complex view, in which actions are not only governed by outcome expectations but also by efficacy expectations. Individuals may believe that a course of action will produce certain

outcomes (outcome expectations), but if they entertain serious doubts about whether they can perform the necessary activities, such information will not motivate action. In this conceptual system, expectations of personal mastery (efficacy expectations) affect both initiation and persistence of behaviour. ‘The strength of people's convictions in their own effectiveness is likely to affect whether they will even try to cope with given situations’ (Bandura, 1977a:193).

Efficacy beliefs are the foundation of human agency. Unless people believe they can produce desired results and forestall detrimental ones by their actions, they have little incentive to act or to persevere in the face of difficulties. Whatever other factors may operate as guides and motivators, they are rooted in the core belief that one has the power to produce effects by one's actions (Bandura, 2001:10).

Bandura's theorisation concerning the impact of belief in human functioning began to advance, i.e. that people's level of motivation, affective states, and actions are based more on what they believe than on what is objectively true (Pajares, 2002:5). ‘Perceptions and beliefs regarding efficacy ‘determine what individuals do with the knowledge and skills they have’; and helps to explain why people's performance and success are ‘sometimes disjoined from their actual capabilities and why their behavior may differ widely even when they have similar knowledge and skills’ (ibid).

A major question in any theory of cognitive regulation of motivation, affect, and action concerns the issue of causality. A variety of experimental strategies were used to verify that beliefs of personal efficacy function as determinants of actions rather secondary reflections of them (Bandura, 2005:25-26).

During the 1970s, the validation of the effect of belief or perception on efficacy led Bandura to start using the term *perceived self-efficacy*, which is defined as ‘A belief in one's capabilities to organize and execute the course of action required to attain a goal’ (Kear, 2000:2). Research revealed that ‘Discrepancies between efficacy expectations and performance are most likely to arise under conditions in which situational and task factors are ambiguous’ (Bandura, 1977a:203). This is further explained in the extract below:

Theorizing and experimentation on learned helplessness might well consider the conceptual distinction between efficacy and outcome expectations. People can give up trying because they lack a sense of efficacy in achieving a required behaviour, or they may be assured of their capabilities but give up because they expect their behaviour to have no effect on an unresponsive environment or to be consistently punished. These two separable expectancy sources of futility have quite different antecedents and remedial implications (Bandura, 1977a:204-205).

South African mineworkers could experience comparable ambiguities, especially when H&S competes with the pursuit of production bonuses. Addressing such situations, described as ones of ‘futility’ by Bandura, may require the development of competencies and expectations of personal effectiveness (efficacy expectation), or changing the prevailing environmental contingencies in order for actions to have an impact on the environment (outcome expectation), depending on the weaknesses within the context (Bandura, 1977a:205). The most important point is that training interventions require deep understandings of underlying problems in the contexts in which they are carried out. By the late 1970s, the self-efficacy concept had gained increasing attention and acceptance. In her concept analysis of self-efficacy, Kear observes that from the 1970s to 1990s, many writers discussed definitions and attributes of self-efficacy, but Bandura has remained confidently committed to the concept, which has logical and semantic appeal: ‘People who regard themselves as highly efficacious act, think, and feel differently from those who perceive themselves as inefficacious. They produce their own future, rather than simply foretell it’ (Bandura, 1986:395). With both the growing acceptance of the concept and a vision of its potential, Bandura and his team intensified their theorizing. The consequent development, social cognitive theory, has always been underpinned by self-efficacy beliefs (or perceived self-efficacy), but encompasses extended notions of social and symbolic learning, cognitive aspects of motivation, self-regulation more specific contextual adaptations.

However, self-efficacy is still used in its own right in many sources and has not been subsumed by the wider social cognitive theory. Bandura mounted a multifaceted programme of research to develop his theory and gain a deeper understanding of the nature and function of self-efficacy, including the origins of efficacy beliefs, their structure and function, their diverse effects, the processes through which they produce these effects, and the modes of influence by which such beliefs can be created and strengthened for personal and social change. Applications of social cognitive theory were researched in education, health promotion, disease prevention, clinical dysfunctions such as anxiety disorders, depression, eating disorders, and substance abuse, as well as in personal and team athletic attainments, organizational functioning, and social and political systems (Bandura 2005:25). This is where Bandura's work becomes especially useful for education and training practitioners, because he claims that people's beliefs about their efficacy can be modified and developed.

### ***Context and task specificity***

Certain core features of self-efficacy have endured in the writing of Bandura and others over time and space. As stated earlier, the term self-efficacy is used loosely and widely in education, training and development literature, usually with a comment about the low self-efficacy of workers, learners, students, patients, citizens, etc. In terms of the established literature, such generalized comments constitute an inaccurate use of the concept, since self-efficacy is usually task- and context-bound. A person may have low self-efficacy in one aspect of his or her life, but high self-efficacy in others. Migrant mineworkers may appear to have low H&S efficacy underground, due to a lack of specific training, control or competing interests, yet the same workers manage highly complex logistical and communication arrangements with their distant families. Self-efficacy is a self-assessment of the competence to perform a specific task within a certain context, or a judgement of the ability to perform a desired activity (Pajares, 1997:20; Bandura, 1986; Kear, 2000:3). It is inevitable that people will bring to a situation or performance powerful pre-existing notions of their capabilities, but no amount of confidence or self-appreciation can produce success when the requisite skills and knowledge are absent (Pajares, 2002:5). Self-efficacy beliefs may be critical determinants of how well knowledge and skill are acquired in the first place. 'Self-efficacy beliefs form a potent affective, evaluative and episodic filter, through which new phenomena are interpreted' (ibid).

When individuals are familiar with task demands, they may call on the task-specific self-efficacy beliefs that closely correspond to the required performance. When task demands are unfamiliar, people must generalize from prior attainments that are perceived as similar to the required task and gauge their perceived competence with self-beliefs they judge more closely correspond to the novel requirements. To account for this, researchers have drawn a distinction between self-efficacy for performance and self-efficacy for learning (Pajares, 1997:26).

### *Sources of self-efficacy*

After more than 20 years of research in different contexts, many sources of and influences on self-efficacy have been identified, some of which may be context-specific and some of ‘comprehensive generality’. As Bandura states:

The goal in theory building is to identify a small number of explanatory principles that can account for a wide range of phenomena. In the interest of comprehensive generality, social cognitive theory focuses on integrative principles that operate across differing spheres of functioning (Bandura, 2005:25).

Six main sources of self-efficacy are generally discussed in the literature (Bandura, 1994, n.p.; Bandura, 1997:5517; Bandura, 1998:54-55; Bandura, 2004, 620-624):

- self-concept
- mastery
- vicarious, social or para-social learning
- social or verbal persuasion,
- somatic or emotional states, reducing stress reactions
- locus of control

More recently Bandura has suggested that self-efficacy is more complex and less subject to generic definition:

Efficacy beliefs differ in generality, strength, and level. People may judge themselves efficacious across a wide range of activity domains or only in certain domains of functioning. Generality can vary across types of activities, the modalities in which capabilities are expressed (e.g., behavioral, cognitive, affective), situational variations, and the types of individuals toward whom the behavior is directed (Bandura, 2006:313).

He has also written about scales of measurement specifically designed for specific types of efficacy within defined contexts (Bandura, 2006). Yet the accepted sources of self-efficacy are widely used and provide an entry point for working with the concept. *Self-concept* is the source that is the least subject to short-term persuasion in the form of learning. It has an influence on, but is distinct from, self-efficacy. Self-concept is a more expansive, global notion of one's personal essence, including thoughts, feelings and values (Kear, 2000:2). According to Bandura, self-concept is more introspective and descriptive than self-efficacy, which tends to be context-specific and more analytic. In terms of this thesis, attempts to engage with the self-concept of mineworkers could breach the accepted boundaries between guidance and counselling in AET, and may be best left to professionals trained in psychotherapy. *Mastery* experiences are most frequently identified as the principal vehicle of change. 'Through guided mastery we cultivated competences, coping skills, and self-beliefs that enabled people to exercise control over their perceived threats' (Bandura, 2005:22-23). Mastery is further described as experience in overcoming obstacles, and teaching that success usually requires sustained effort. Bandura explains the relationship between mastery, genuine success and perseverance.

Successes build a robust belief in one's efficacy. Failures undermine it. If people have only easy successes they are readily discouraged by failure. Development of a resilient sense of efficacy requires experience in overcoming obstacles through perseverant effort. Resilience is also cultivated by learning how to manage failure so it is informative rather than demoralizing (Bandura, 2004:22).

Mastery (successful performance) can lead to a high level of perceived self-efficacy, while experiences of failure lower self-efficacy and impede one's behaviour (Kear, 2000:3). This has obvious implications for education and training, in terms of the need for learners to develop hard skills (i.e. practical skills that have utility in work or life, that earn money or promotion, or are admired by peers) and to have opportunities to demonstrate and experience these as 'mastery' in order to develop their own sense of self-efficacy. As mastery or competence increases, this experience is processed cognitively: 'As a person judges that he is able to competently perform a behaviour, the behaviour is reproduced with increasing confidence' (Kear, 2000:3). The very fact that mastery is identified as the most effective way of creating a strong sense of efficacy differentiates self-efficacy from self-esteem or self-confidence, and points to the relevance of quality AET that facilitates experiences of mastery and competence.

Pajares, a prominent writer on self-efficacy, makes the point:

There are cautions that should be taken as regards the nature and focus of interventions to increase self-efficacy. As is presently the case with self-esteem, there is the danger that self-efficacy may soon also come in a kit. Bandura's (1986a) emphasis that mastery experience is the most influential source of self-efficacy information has important implications for the self-enhancement model... Self-enhancement proponents emphasize educational efforts that focus on improving students' self-beliefs in order to improve achievement. Social cognitive (self-efficacy) theorists focus on the important task of raising competence and confidence through authentic mastery experiences (Pajares, 1997:44).

Another way of creating and strengthening belief in self-efficacy is to experience success vicariously or through *social modelling*. The topic of social modelling was dealt with in detail earlier in this chapter. However, in terms of enhancing self-efficacy, 'Seeing people similar to oneself succeed by sustained effort raises observers' beliefs that they too possess the capabilities to master comparable activities to succeed' (Bandura, 1994:n.p.). Competent models also build efficacy by conveying knowledge and skills for managing environmental demands (Bandura, 2004:622).

Social or para-social learning can be used to contextualize mastery or learning. *Social or verbal persuasion* also strengthens people's beliefs that they have what it takes to succeed. Bandura suggests that the inhibiting self doubts of individuals and their focus on personal deficiencies can be addressed by verbal persuasion. This is more complex than simple positive reinforcement; rather, it is a way of nurturing the fertile ground needed for positive change to begin. 'To the extent that persuasive boosts in perceived self-efficacy lead people to try hard enough to succeed, they promote development of skills and a sense of personal efficacy'; yet the reverse is also possible: 'It is more difficult to instil a high belief of personal efficacy by social persuasion alone than to undermine it' (Bandura, 1994:n.p.). Positive reinforcement of new skills and learning is required, as well as the confidence to enact these. If people are persuaded that they have what it takes to succeed, they exert more effort than if they harbour self-doubts and dwell on personal deficiencies when problems arise. But effective social persuaders do more than convey faith in people's capabilities. They arrange things for others in ways that bring success and avoid placing them prematurely in situations where they are likely to fail (Bandura, 2004: 622).

People are inevitably highly affected by emotions and feelings, and Bandura reminds us that people will also rely on their *somatic and emotional states* in judging their capabilities. Reactions such as stress, fatigue, pain, tension, despondency and mood will be influential. Bandura states that 'positive mood enhances perceived self-efficacy, despondent mood diminishes it.' The fourth way to modify self-efficacy is, therefore, to 'reduce people's stress reactions' and 'misinterpretations of their physical states' (Bandura, 1994:n.p.). Bandura develops this point. He states that people with a high sense of efficacy are likely to view their affective arousal as 'an energising facilitator of performance,' while people who are less self-efficacious are likely to view it as a 'debilitator' (ibid). However, the ways in which individuals manage their internal adrenal or arousal levels, interpreting them as stress or excitement, are more likely to be within the confines of psycho-therapy, anger and stress management than H&S training. The boundaries between these different interventions often arise in adult education and training situations, where distinctions have to be drawn between reasonable, empathic engagement with the 'somatic and emotional states' of trainees and those that require referral to differently trained clinicians.

Early on, Bandura recognized *control* as a central issue in human agency and consequently of self-efficacy as well. ‘Among the mechanisms of personal agency, none is more central or pervasive than people's beliefs in their capability to exercise some measure of control over their own functioning and over environmental events’ (Bandura, 1997; Bandura, 2001:10). The way an individual interprets the locus of *control* in his or her life also affects self-efficacy. The locus of control can be viewed as primarily external, operating by chance or through external control, or internal, as a direct result of personal effort. A relatively high internal locus of control tends to coincide with greater self-efficacy. However, self-efficacy does not consist of a locus of control alone (Bandura, 2005: 26). The locus of control is made up of two main processes, emotive and cognitive. An individual with an active internal locus of control would experience ‘a feeling of control,’ as well as the ‘cognitive process of interpreting a causal relationship between personal action and goal attainment’ (Kear, 2000:3). Pajares’ description of control in self-efficacy (below) has real resonance for workers in South Africa, many of whom faced control barriers in the past:

As regards locus of control, the notion of perceived control is also related to self-efficacy. According to locus of control theory, people expect success to the degree that they feel in control of their behavior, often referred to as internal locus of control, and research supports this contention. People who believe they can control what they learn and perform are more apt to initiate and sustain behaviors directed toward those ends than are those with a low sense of control over their capabilities. In Bandura's social cognitive theory, a sense of control over the significant outcomes of one's life is a key motivator of behavior in addition to self-efficacy. In fact, it is demoralizing for people to believe that they have the capabilities to succeed, but that environmental barriers such as discrimination preclude them from doing so (Pajares, 2007:7).

Control issues probably have significance in many workplace contexts, especially those which operate within well-defined hierarchies, such as mining. Unskilled and semi-skilled workers often function in situations where they experience little control, i.e. where the ‘locus of control’ lies with a superior in the hierarchy. A relatively greater number of underground workers with higher H&S self-efficacy might have more control in influencing H&S practices of work teams. (See next section.)

### 3.4 Collective efficacy

#### *Triadic model*

Collective efficacy is a logical extension of self-efficacy. However, this study is essentially about approaches to training individuals, rather than the social or corporate climate in which individuals work or are trained. Collective efficacy is not as extensively reviewed as self-efficacy, since it is not the primary focus of this study, but the logical connections will be discussed. Most of the sources consulted used the term 'collective efficacy', but Bandura actually conceived a 'Triadic Model of Human Agency' in which human agency operates on three tiers: individually, by proxy, and collectively (Bandura, 2005:26). Collective agency or efficacy is described as follows:

People do not live their lives autonomously. Many of the things they seek are achievable only through socially interdependent effort. I extended the conception of human agency to collective agency rooted in people's shared belief in their joint capabilities to bring about changes in their lives by collective effort (Bandura, 2005:26-27).

Agency by proxy is more subtle and complex:

In many spheres of functioning, people do not have direct control over the social conditions and institutional practices that affect their everyday lives. Under these circumstances, they seek their well-being, security, and valued outcomes through the exercise of proxy agency. In this socially mediated mode of agency, people try by one means or another to get those who have access to resources or expertise or wield influence and power to act at their behest to secure the outcomes they desire (Bandura, 2005:26).

Trade unions shop stewards and H&S representatives are forms of agency by proxy for mineworkers, and it may be useful for mineworkers to analyse and discuss the different forms of collective power that they wield, rather than inevitably defaulting to a proxy agency.

### *Dynamics of group efficacy*

Different forms of collective efficacy can operate at the same time and are therefore also referred to as *group efficacy*. Interactive dynamics within a group create an emergent property that is more than the sum of its individual attributes: it is an emergent group-level attribute (Bandura, 1997:477-478). There are serious analytic challenges in gauging group efficacy. It is not simply an average or total of individual positions. 'It required clarification that group efficacy represents the different levels of collectivity, the pitting of autonomy against interdependence, individualism against collectivism and individual agency against social structure conceived as an entity' (Bandura, 2005:26). In general, group efficacy is affected by:

- Mix of knowledge and competencies in the group;
- Leadership of the group;
- Quality of interaction within the group;
- Aggregation of members' appraisals of their personal capabilities for the functions they can perform for the whole group;
- Aggregation of members' appraisals of the group's capabilities as a whole;
- Efficacy beliefs in relation to the larger social system (Bandura, 1997:478).

Inevitably, collective efficacy is partly derived from the individual self-efficacy of group members, i.e. group members' appraisals of their individual capabilities for a particular function. However, interactive influences affect each member's appraisal of the group's capability. 'Group members are rarely of one mind in their appraisals and perceived group efficacy is best characterised by a representative value for its members and the degree of variability or consensus around that central belief' (ibid). Collective efficacy can be rooted in the self-efficacy of each individual, because:

- A group of self-doubters is not moulded into a collectively efficacious force;
- A weak link that has to perform interdependently can spell failure;
- A group of highly efficacious individuals may perform poorly if they do not work well together (Bandura, 1997:479-480).

Increasingly, the boundaries of traditional social institutions are changing, and people operate within multiple social systems and within new groupings. Widespread technological changes and globalization of economic forces are creating transnational interdependencies (Bandura, 1997:477). Much research has been conducted on whether the self-efficacy concept is applicable in different contexts, especially in terms of comparisons of Eastern and Western cultures. (See next section on criticisms of self-efficacy.) However, such generalizations do not seem to be possible, as ‘analyses across activity domains and classes of social relationships revealed that people behave communally in some aspects of their lives and individualistically in many other aspects. Within the variety of cultural or collective options, people express their cultural orientations conditionally rather than invariantly depending on incentive conditions’ (Bandura, 2005:27). Considering the complexity, what is the interplay between collective efficacy and positive change?

### ***Group efficacy and change***

Bandura suggests that the vast majority of those who benefit from social reforms are not active participants in bringing about such changes.

If social change depended on everyone participating, it would rarely be attempted because few would believe that a huge populace can be mobilized... In fact, social reforms are typically the product of an efficacious and highly committed minority of people who invest themselves in shaping a better future (Bandura, 1997:489).

It appears that the *critical mass* required for social change is very high efficacy in a relatively lower number of people, rather than lower efficacy in a higher number of people. Bandura makes the credible observation that ‘Many people shy away from collective action, not because they can gain the benefits without the costs of participation, but because they seriously doubt the group’s efficacy to secure any benefits at all’ (Bandura, 1997:489). The process is driven by people with very high efficacy beliefs who mutually support one another and insulate themselves against discouragement. These change agents derive self-respect from challenging social practices that violate their ethical standards. Perhaps the moral agency previously referred to is activated.

A strong sense of camaraderie provides sustaining interpersonal rewards at a time when tangible benefits of social change may be a long time in coming (Bandura, 1997:489). Bandura cautions against shallow efforts to engage ‘group agency’, an approach that has been promoted and over-used as group learning methodology in education, training and development.

There is much talk of ‘empowerment’ as the vehicle for bettering personal lives. This is a badly misused construct that has become heavily infused with promotional hype, naïve grandiosity, and virtually every brand of political rhetoric. ‘Empowerment’ is not something bestowed through edict. It is gained through development of personal efficacy that enables people to take advantage of opportunities and to remove environmental constraints guarded by those whose interests are served by them. ...Equipping people with a firm belief that they can produce valued effects by their collective action and providing them with the means to do so are the key ingredients in an enablement process (Bandura, 1997:477).

The default group process used in AET and much local policy development, that of a consensus building discussion, is also criticized: ‘A single judgment forged by a group discussion, subject to sway by prestigious individuals, masks the variability in members’ beliefs about their group’s capabilities. A forced consensus can be highly misleading’, (Bandura, 1997:479). Bandura suggests that the consensus reflects a position that nobody is intensely committed to, one that is a compromise for all, but does not completely dismiss negotiation and genuine dialogue. He suggests that such processes can be as useful in setting goals, devising strategies and sustaining the level of effort required to succeed; or dysfunctional and capture the major share of attention, diverting time and energy away from the intended outcome (ibid).

### 3.5 Criticisms of self-efficacy

Self-efficacy has naturally been subject to critique and criticism over the years. Endorsements of the concept are embodied in its widespread and long-term uptake in many disciplines and applications. I have organized criticisms of self-efficacy into the following themes or categories:

*Causality*- Self-efficacy predicts but does not cause or change behaviour, so its utility is limited.

*Incompleteness*- Self-efficacy is only one of a number of variables that influence behaviour change, and while the concept is useful, it does not offer a complete explanation of behaviour change.

*Ethnocentricity*- Self-efficacy is largely a Western, American construct that is not universally useful.

*Triviality*- The concept, like others in social psychology, is really common sense and not of serious academic and theoretical value.

#### *Causality*

Hawkins (1995) raised ongoing concerns about the *causality* of self-efficacy and whether it is a predictor rather than a cause of behaviour (Hawkins, 1995:235). Hawkins reviewed many studies of applications of self-efficacy, including pain management, over-eating, bulimia, giving up smoking, diabetes self-care, coping with medical procedures, condom and contraceptive use, phobia alleviation (darkness, height, lifts/elevators), work-related performance, effective career choice, and achievement of student course goals in psychology (Hawkins, 1995:236-237). He conceded that a wide body of literature had demonstrated the association between self-efficacy and success with a range of clinical problems. However, he asserted that these studies really underlined the point that the theory had utility when used to *describe and predict* behaviour, a correlation rather than a causal link (Hawkins, 1995:237). Bandura's response was quick and spirited, and he and Hawkins have engaged in arguments and counter arguments over the years. One of Bandura's counter assertions involved presenting empirical studies of pain tolerance performance that had been manipulated with induced levels of self-efficacy. Research subjects were provided with bogus feedback regarding their pain tolerance and then subjected to pain tolerance tasks.

Perceived self-efficacy seemed to override past performance and was the best way of understanding performance level (Bandura, 1995:181). Bandura seems to have overreacted. This example does not seem to be much more than a desperate attempt to rationalize the power of suggestion, or to gain ground among quantitatively minded scientists.

Hawkins makes some reasonable and valid points, and says that his intention was to raise issues which could be used to modify rather than discard self-efficacy theory (Hawkins, 1995:235). He and other writers in the discipline (Olson & Zanna, 1993) concur that causation is an eternal problem in the discipline of learning and behaviour change: ‘Causation has long been problematic in the behavioural sciences, as illustrated by decades of argument about whether attitudes cause behaviour or whether behaviour cause attitudes’ (Hawkins, 1995:238). The causality criticism articulates a valuable caution about some of the claims made about self-efficacy, especially in terms of the construct being advocated as an approach to solving all problems. Hawkins concedes to what may be the key aspects of self-efficacy: that self-efficacy can predict complex human behaviours; that a person’s self-efficacy is an index in the choices he/she makes; and that the index is *modifiable* in the case of humans (Hawkins, 1995:238). This surely suggests that it has a place in facilitating behaviour change. Overall, he describes the construct as useful, influential and intuitively appealing (Hawkins, 1995: 235 and 239).

### ***Incompleteness***

The suggestion that self-efficacy is an *incomplete* concept, or even theory, of behaviour change does not really seem to threaten its validity. No single concept/construct can accommodate all aspects governing human action or all the variables that will contribute to behaviour change. An applied concept needs to be lucid and manageable, as Bandura himself stated, referring to ‘a small number of explanatory principles that can account for a wide range of phenomena’ (Bandura, 2005:25). Even Hawkins (1995), who doubted its causality, acknowledged that self-efficacy is a useful index. Other writers commenting on its limitations have made the same observation:

In our view, self-efficacy is a *necessary condition for motivation*. Yet the belief that one can successfully perform an action or control an outcome does not address why one acts, an issue at the very heart of human commitment and engagement. For this reason, self-efficacy theory is unable to distinguish alienated from autonomous actions or predict the consequences that follow from this distinction (Ryan & Deci, 2006:1570).

### ***Ethnocentricity***

Bandura is the son of Polish immigrants, but was educated and has always worked in North American universities. It was inevitable that at some point his work would be challenged in terms of *ethnocentric* bias (Triandus, 1995). Self-efficacy was originally conceived and studied almost exclusively in Western settings, but this has been addressed over time. Numerous studies have been conducted in different clinical and cultural contexts. These primary studies provide fertile grounds for secondary reviews of and deductions about self-efficacy.

In 2004, Klassen stated that: ‘Even though self-efficacy has been shown to be a strong predictor of performance with Western populations, less is known about how self-efficacy beliefs operate with non-Western individuals and cultural groups’ (Klassen, 2004:206). Consequently, he set out to review studies conducted over a period of 30 years which investigated self-efficacy in specific cultural (non-American) groups, or compared self-efficacy among different geographic or cultural groups. He carefully selected 20 valid, reliable studies which focused on a wide range of settings, including China, Hong Kong, India, Taiwan, Thailand, the former Yugoslavia, Hungary, the Czech republic, Russia, Israel, France, Italy, Costa Rica, Canada, and Australia, plus specific cultural groups, such as Asian, African and Hispanic Americans (ibid:209-217). The review does not mention many African settings, but in general appears comprehensive and rigorous. A recurring suggestion in the findings is that some societies or groups are relatively more collectivist, as opposed to individualist, in their efficacy than others.

For example, numerous cross-cultural studies have classified countries and cultural groups according to their degree of individualism and collectivism, with the results showing that European North Americans have the most individual orientation in the world (ibid:208). This finding is the result of comparing discrete self-efficacy scores, rather than the range of scores, within a culture.

It is clear from this summary of the research that efficacy beliefs operate differently in non-Western cultures than they do in Western cultures... self-efficacy beliefs were typically higher for participants from Western, individualist cultures than for the participants from Asian, presumably collectivist, settings (Klassen, 2004:225).

Naturally there are collectivists in individualistic cultures and individualists in collectivistic cultures, but at both societal and individual levels, strong perceived efficacy fosters high group effort and performance attainments (Bandura, 1999:35). The individual/collective debate rages on, but some interesting research has been conducted. Voronov and Singer (2002) suggest that I/C factors are too frequently 'assumed rather than measured,' and that poverty, rather than any other researched variable, is responsible for collectivist practices in many non-Western settings (Voronov & Singer, 2002:468).

Nations are used as proxies for psychosocial orientations, which are then ascribed to the nations and their members as though they all thought and behaved alike. Residents of Japan get categorized as collectivists, those in the United States as individualists. Cultures are dynamic and internally diverse systems not static monoliths. There is a substantial diversity among societies placed in the same category (Bandura, 2005:27).

Self-efficacy scores may be different for people from different cultures due to the effects of different cultural orientations, such as modesty and self-criticism (Klassen, 2004:219). When calibrated, cross-cultural differences are found in *levels* of efficacy beliefs, but there is also evidence that efficacy beliefs *do* play an important role in the motivation of non-Western cultural groups.

‘Self-efficacy was seen to be highly predictive of performance in both Western and non-Western settings’ (Klassen, 2004:225).

The evidence from this qualitative review suggests that, among collectivists, efficacy beliefs are typically lower but equally or even *more* predictive of performance and that the calibration of their efficacy beliefs and subsequent functioning may be more accurate than among individualists. Second, concepts of self, like self-efficacy, appear not to be fixed, but are amenable to change depending on the context (ibid).

Klassen found that there is considerable support for the finding that efficacy beliefs, although rated differently, remain important factors in the motivational functioning of people from individualist and collectivist cultural groups (Klassen, 2004:228). Bandura conducted similar reviews of studies that tested the structure and functional role of efficacy beliefs in diverse cultural milieus across a wide range of age levels, gender, and different spheres of functioning (Bandura, 2002 and 2005). The findings show that a strong sense of efficacy has generalized functional value, regardless of the cultural conditions (Bandura 2005:28). There seems to be substantial support for the conclusions of both Klassen (2004) and Bandura (2002 and 2005) that the self-efficacy construct does have generalized value across different cultural contexts, especially when discrete values or scores are not compared across different settings.

### ***Triviality***

In 1978, a Norwegian psychologist published an influential article which is still cited today: ‘Bandura’s theory of self-efficacy: A set of common sense theorems’ (Smedslund, 1978). The self-efficacy concept was used as an example of what Smedslund viewed as a tendency in psychology to turn essentially common sense observations about life and behaviour into baseless theory. He also declared that much empirical testing in psychology is ‘pointless’ because it tests things that are analytically related, so that a connection or correlation is inevitable. Smedslund has maintained this position about Bandura and self-efficacy and states that: ‘Studies that show that people who do not believe that they can do something do not try to do it are pseudoempirical’ (Smedslund, 1991:331).

His arguments struck a chord among many academics, not so much for the attack on self-efficacy as for the cautions about constructing specious empirical experiments around aspects of behaviour that are logically or analytically related. Smedslund called for a clear distinction in research between verification that is analytic (logically connected by ideas) and verification that is empirical (really needs to be investigated) and continues to advocate a new scientific discipline psychological research which he terms ‘psychologic’ (ibid: 325). One of Bandura responses is presented below:

Theory building is a long haul, not for the short winded. The formal version of the theory that appears in print is the distilled product of a lengthy interplay of empirically based inductive activity and conceptually based deductive activity. Verification of deduced effects is central to experimental inquiry (Bandura, 2004:628).

Critiques of analytic versus empirical approaches to psychological research and the absence of common sense in the discipline have continued to be discussed for many years. However, the debate has moved on and away from self-efficacy, even though it was one of Smedslund’s first illustrative examples. Language use was also criticized, in terms of the way in which common observations and descriptions of behaviour are turned into complicated terminology. Bandura responded to the criticism:

I have no quarrel with people who try to present technical terms in colloquial forms provided the meanings of the psychological constructs and processes are not thereby altered.... Unfortunately all too often the process of simplification strips constructs of significant defining properties or invests them with surplus meanings carried by the colloquialisms. Advances in a field are best achieved by well-defined constructs that fully reflect the phenomena of interest and are rooted in a theory that specifies their determinants, mediating processes, and multiple effects (Bandura, 1990:104).

Language use in self-efficacy debates has proven to be consistent, accessible to many users, subject to explanation and less opaque than in many other areas of psychology and education.

### **3.6 Final comment**

#### ***Endorsement***

Bandura's own assessment of the merits of a theory is that it must meet three criteria: 'It must have explanatory power, predictive power, and, in the final analysis, it must demonstrate operative power to improve the human condition. Well-founded theory provides solutions to human problems' (Bandura, 2004: 628). Overall, the literature reviewed strongly suggests that the self-efficacy concept has explanatory and predictive power. The application of the concept engages a range of modifiable determinants and a deep acknowledgement of group and contextual dynamics which render it at least some operative power. Self-efficacy reflects Bandura's humanistic, even optimistic, view of human actions. The degree of rationality assumed to be in place in behaviour change may be extreme and open to further inquiry. However, his work adds new depth to and integration of studies of motivation, learning and behaviour change. An essential problem with self-efficacy is associated not with the concept itself but with the term, which is used widely and loosely, often with a shallow appreciation of the complexity of the concept and its task- and context-specificity.

Much empirical evidence now supports Bandura's contention that self-efficacy beliefs touch virtually every aspect of people's lives - whether they think productively, self-debilitatingly, pessimistically or optimistically; how well they motivate themselves and persevere in the face of adversities; their vulnerability to stress and depression, and the life choices they make. Self-efficacy is also a critical determinant of self-regulation (Pajares, 2002:5).

#### ***Conclusion***

Self-efficacy has been found to be strongly associated with performance. The utility of the concept lies in its operative qualities and deeper understandings of how efficacy can be addressed via its accepted sources and a clear focus on its task and context specificity. As seen in Chapter 1, the term and concept are widely used in South Africa, with varying degrees of rigour. Sources of self-efficacy may be personal and reside within people, or result from their social and physical environments.

Such efficacy can be addressed by attempting to modify one or more of its sources. The six main sources of efficacy generally discussed are self-concept; mastery; vicarious or social learning; social or verbal persuasion; somatic, emotional or stress reactions; and locus of control. The concept has proven functionality and adaptability in many contexts. It is accessible but not superficial. Overall, the evidence suggests that the self-efficacy concept may be of value in informing approaches to mine H&S training, especially where a shift in emphasis from compliance to self-efficacy is indicated. The identified sources of efficacy provide a reasonable entry point for engagement, but nuanced engagement with both the concept and the context is essential. Ideas in the literature that relate to the self-efficacy concept and relevant sources of efficacy are integrated into the relevant chapters that follow. The six sources of self-efficacy are reconsidered in the framework in Chapter 7.