

Chapter 3

ESTABLISHING A VIABLE CONCEPTUALISATION OF KNOWING, LEARNING, AGENCY AND CHANGE

3.1 INTRODUCTION

Our actions are based on a complex set of implicit assumptions and explicit beliefs. With regard to curriculum development and implementation, it is especially important that theorising take place in a particularly conscious, coherent and purposeful manner. Questions of what we might learn and how, or of what we might teach and how, beg deeper questions about our understanding of reality and the nature of human knowing, and what status, purpose and value might be ascribed to our knowledge.

In his discussion of various perspectives and epistemologies that might underlie approaches to learning and research, Crotty (1998, p. 15) suggests that most research theorists set qualitative and quantitative research against each other as polar opposites. He argues with others (e.g. Cherryholmes and Popkewitz in Deakin University 1996) that such opposition is an entirely false dichotomy. In place of this set of mutually exclusive notions, however, Crotty (1998, pp. 15, 52) posits several others, including an epistemological argument against ‘any attempt to be at once objectivist and constructionist (or subjectivist). ...Constructionism is not subjectivism’.

Crotty (1998, p. 43) defines subjectivism as the epistemological view that ‘meanings are created out of whole cloth and simply imposed upon reality’, that they are ‘a capricious creation of consciousness’ (1998, p. 151). The subjectivist epistemology has roots in ancient Greek philosophy. According to Cziko (1995, pp. 215-216), for example, Socrates held a subjectivist or ‘providential view of knowledge’ wherein ‘inquiry is the recollection of knowledge we already have’, which is ‘provided by an immortal soul’ and might be recollected with the aid of questioning. Crotty suggests that, ‘There are strong threads within structuralist,

post-structuralist and post-modernist thought espousing a subjectivist epistemology' (1998, p. 43) and that 'a rampant subjectivism seems to be abroad' (1998, p. 48).

Objectivism, by contrast, is for Crotty (1998, p. 5) the epistemological view that things 'have truth and meaning residing in them as objects' and that such objective truth and meaning can be discovered through appropriate methods of inquiry. Crotty (1998, p. 42) notes that such a view of knowledge as objective and authoritative also had roots in ancient Greek philosophy, was sustained through the Middle Ages in Scholastic realism, rose to its greatest prominence in the philosophy of the Enlightenment, and has been the epistemological ground of Western science. He argues (1998, pp. 4-6, 27, 29) that such a view underlies positivism and, less emphatically, post-positivism.

Such notions, *as definitions*, clearly are logically mutually exclusive. They are mutually exclusive, *by definition*. However, these apparently mutually exclusive notions warrant closer examination. *Much of the difficulty with arguments concerning questions of learning and knowing seems to arise from the level of intellectual abstraction used in an effort to achieve conceptual purity and theoretical distinctiveness, and from the resultant creation of falsely watertight compartments or 'boxes', and incompatible, either/or options. Less often are efforts made to move beyond such logic-chopping to see what compatibilities and connections might exist between various concepts and theoretical perspectives.*

3.2 POSITIVISM

The term 'positivism' was popularised by Comte, but for him scientific inquiry was not a matter of seeking to discover a purely objective meaning in things or phenomena through controlled experimentation necessarily, or independently of social conditions, or of historically and culturally mediated ways of thinking (Crotty 1998, pp. 22-23). For Comte, the effort to discover facts and laws and to establish them scientifically through observation, experiment and comparison was

not incompatible with constructionism, the notion that meanings are constructed, as distinct from discovered, by human beings, as they interact with and interpret the world.

In the 1920s the philosophy of logical positivism emerged, largely through the influence of the so-called Vienna Circle. Here the concern was emphatically with factual knowledge, subjected to the methods and exactitude of mathematics, and verified by the immediate experience of our senses, or by way of the instruments of science that extend the operation of our senses (Crotty 1998, pp. 23-25). The goal was to subordinate philosophical idealism to science by making philosophy conform to strict logical criteria in the form of deductive logic as supplied in Whitehead and Russell's (1962) *Principia Mathematica*, and to strict empirical criteria for meaning inferred from an interpretation of Wittgenstein's (1975) *Tractatus Logico-Philosophicus*. Toulmin (1969a, pp. 60-61; 1969b, pp. 39-40) explains how Wittgenstein's imprecise claims about 'atomic facts' were mistaken by members of the Vienna Circle as implying that there is a language of facts in science which is independent of theoretical assumptions, thus enabling logical positivists to assume a validity in their firmly objectivist approach to knowledge generation.

Thus, Houts (1989, p. 52) summarises the logical positivist project in this way: 'The operation of logic on "facts" leads to truth; science contains "factual statements" and conforms to logic; therefore, science leads to truth'. Logical positivists sought to justify science's supposed capacity to lead to incontrovertible, objective truth through a logical reconstruction, demonstrating retrospectively that scientific theories had undergone conceptual changes consistent with deductive logic (Houts 1989, p. 52).

The naïve empiricist epistemology of the positivist program assumed that the relationship between human perception and the world was an uncomplicated one of undistorted observation and representation of the 'facts' of reality, an assumption

we shall return to shortly. Nevertheless, the particulars of the thoughts and practices of individual scientists were *consciously* ignored in the logical reconstruction of science. As Feigl (1969, p. 17) noted, 'It must be kept in mind that all this is a *logical* reconstruction. It was never intended to be an account of the origin and development of scientific theories'. By pursuing and reinterpreting science *as an abstraction*, the project of logical reconstruction could be undertaken without being troubled by any evidence or considerations that might be provided by psychological or sociological studies of the actual activities of scientists, past or present.

Reichenbach (1961), for example, drew a distinction between the 'context of discovery' and the 'context of justification' in order to distinguish between philosophy of science and the thought processes associated with the practices of individual scientists.

We might say that [a rational reconstruction] corresponds to the form in which thinking processes are communicated to other persons instead of the form in which they are subjectively performed. ...I shall introduce the terms *context of discovery* and *context of justification* to mark this distinction.

(Reichenbach 1961, pp. 6-7)

Reichenbach is clearly aware of the issue of the thought processes of scientists in the context of discovery. However, he considered them irrelevant so far as the philosophy of science is concerned, because 'epistemology is only occupied in constructing the context of justification' (Reichenbach 1961, p. 7).

Logical positivists had their reasons for rejecting psychological perspectives on science studies. Houts (1989, p. 56) notes, for example, that they 'most often identified psychology either with Freudian psychoanalysis or with Bergsonian intuitionism, both of which defied their logical analysis and were therefore pejoratively associated with irrationality and subjectivism'. Even in relation to the context of discovery, then, there was a general assumption that questions about thought processes were shrouded in mystery, and as Schaffer (1986) notes, attempts

to introduce psychological explanations for processes of scientific discovery were typically dismissed as ‘psychologism’.

However, with regard to logical positivism, Houts notes two significant points of irony, one on either side of the apparent dichotomy of objectivism/subjectivism. One is that a major obstacle to significant contributions of psychology to science studies was that most ‘psychologists themselves constructed their own discipline according to prescriptions consistent with positivist philosophy... [and] failed to see the relevance of psychology to the metascientific questions as formulated under positivistic hegemony’ (Houts 1989, p. 57). The other point of irony is that the logical positivism that set out to subordinate speculative idealism to science ‘only reinstated a kind of idealism in the logical reconstruction of science without scientists’ (Houts 1989, pp. 54-55).

3.3 POST-POSITIVISM

The work of scientists themselves has increasingly challenged logical positivism’s claims to objectivity, precision and certainty to the extent that ‘logical positivism... is uniformly rejected by contemporary epistemologists and philosophers of science’ (Campbell 1989, p. 22). This has led to the emergence of a post-positivist philosophy of science, whose claims are both far more modest and much less unified.

Popper (1959, 1963), for example, rejected the notion that valid human knowledge should be limited to statements capable of empirical verification. He acknowledged that,

The old scientific ideal of *episteme* – of absolutely certain, demonstrable knowledge – has proved to be an idol. The demand for scientific objectivity makes it inevitable that every scientific statement must remain tentative forever. It may indeed be corroborated, but every corroboration is relative to other statements which, again, are tentative. (Popper 1959, p. 280)

Nevertheless, particularly in response to Kuhn's (1962) work on scientific revolutions, Popper (1974) dismissed as irrational any claim that sociological or psychological concepts account for the development or change of scientific theories, and he ridiculed appeals to psychology, sociology and history as a 'regress to these often spurious sciences', which he saw as containing 'a lunatic fringe' (Popper 1970, p. 58). For Popper (1974, p. 1153), 'if [science] ceases to be rational, it ceases to be science'.

Popper (1959, 1963) challenged the role that the scientific method traditionally ascribed to the deductive logic criterion of rationality, and to the process of induction, whereby a general law is established by accumulating particular instances from observation. He did not see science as a matter of making a discovery through observation, then setting out to prove it right. Observing many instances which support a principle does not guarantee that we might not see it contradicted in the future. Rather, Popper argued for an alternative rationality criterion, the principle of falsification, since only one observation at variance with a principle will prove it false (Popper 1963). He saw the growth of scientific knowledge taking place through a process of conjecture and refutations, that is, through taking a theory, hunch, guess or intuition, and making strenuous efforts to prove it wrong.

In contrast to Popper, Kuhn (1962, 1970a, 1970b, 1977) explicitly argued that logical discontinuities he perceived in the history of science have their basis in sociological and psychological processes. He described a significant interplay between scientific work and historically situated conceptual frameworks, and identified links between the interests and psychology of individual scientists and the scientific community, and the ways in which research is viewed and conducted.

Already it should be clear that the explanation [for theory development and replacement] must, in the final analysis be psychological or sociological. It must, that is, be a description of a value system, an ideology, together with

an analysis of the institutions through which that system is transmitted and enforced. (Kuhn 1970a, p. 21)

Kuhn questions the objectivity of scientific discovery and emphasises that scientists do their work within a particular paradigm, a particular set of assumptions or beliefs about the world or some segment of the world.

In contrast to Popper's advocacy, through his principle of falsification, of scientists making efforts to prove their hunches and theories wrong, Kuhn found that, in practice, 'normal science', science consistent with the paradigm of the day, 'often suppresses fundamental novelties because they are necessarily subversive of its basic commitments' (1970a, p. 5). Many studies support Kuhn's view. For example, studies have shown that scientists tend to discount findings contrary to a dominant theory (Arkes & Harkness 1983; Crocker 1981; Jenkins & Ward 1965; Lord, Ross & Lepper 1979; Nisbett & Ross 1980; Quine 1971; Ross & Lepper 1980; Schustack & Sternberg 1981; Shaklee & Mims 1981), research reports and literature reviews consistent with dominant views are more likely to be accepted for publication (Abramowitz, Gormes & Abramowitz 1975; Barber 1961; Glasersfeld 1995; Goodstein & Brazis 1970; Mahoney 1977; Snizek, Fuhrman & Wood 1981), scientists prefer confirmatory strategies (Klayman & Ha 1987), and, when research methods permit scientists to attribute contrary findings to measurement error, they have typically done so (Gorman 1986; Kern 1982; Quine 1971; Tuckman 1974).

In noting that two or more groups of scientists can find themselves supporting logically incompatible theoretical explanations for the same set of data, Kuhn (1962) acknowledged that scientists do not operate in the ways assumed by the naïve empiricist epistemology embraced by logical positivism. Hanson (1962) was one of the first to use psychological concepts to question the positivist assumption that theory-neutral observation was possible. Relying on an analysis of language based on a different interpretation of Wittgenstein, Hanson (1962) pointed out that all observations and reports of raw data and 'facts' are theory-laden. Hanson (1962, p. 17) illustrated this point by reference to the gestalt image which can appear to be

either a bird or an antelope. He also cites an example from the history of science, when observation failed to resolve a theoretical dispute between Kepler and Tycho as to whether the sun orbits the earth, or vice versa:

Tycho sees the sun beginning its journey from horizon to horizon... circling our fixed earth. ...Kepler's visual field, however, has a different conceptual organisation. Yet a drawing of what he sees at dawn could be a drawing of exactly what Tycho saw, and could be recognized as such by Tycho. But Kepler will see the horizon dipping, or turning away, from our fixed local star. The shift from sunrise to horizon-turn is analogous to the shift-of-aspect phenomena [the gestalt switch] already considered; it is occasioned by differences between what Tycho and Kepler think they know. (Hanson 1962, pp. 23-24)

Polanyi (1962) also drew upon gestalt concepts of perception to explain how the 'tacit knowledge' or implicit assumptions and conceptual structures individual scientists learn during training affect their scientific work. More than Kuhn, Polanyi (1962, 1968) emphasised the psychological processes involved in scientific work, arguing that tacit assumptions and intuitive processes play as big a part as logical processes in the generation of knowledge. As the mathematician Polya (1954, p. vi) put it,

...mathematics in the making resembles any other human knowledge in the making. ...The result of the mathematician's creative work is demonstrative reasoning, a proof; but the proof is discovered by plausible reasoning, by guessing. ...In plausible reasoning the principal thing is to distinguish a guess from a guess, a more reasonable guess from a less reasonable guess. ...If the learning of mathematics reflects to any degree the invention of mathematics, it must have a place for guessing, for plausible inference.

In his study of intuition, Bastick (1982) also notes a significant interplay between intuitive types of experience and processes of reasoning. Intuitive knowledge is associated with a feeling of certainty, but this does not guarantee its validity against

external criteria. Nevertheless, while intuition is an individual and internal process or experience, *it is not arbitrary or essentially relative*:

The famous intuitions and millions of other intuitions are responsible for every creation, device, and man-made system of civilization to date. Some might say that it is our reason that has brought civilization this far, but reason is only the servant of our intuition. ...The intuition is correct in that it harmonizes all the subjective information presently available. (Bastick 1982, pp. 2, 344)

In questioning the objectivity of scientific discovery, Kuhn (1962) emphasises the mediation of perception and theory-building by concepts and theories scientists are exposed to and accept in the course of their scientific training. Houts (1989, p. 66) provides a simple example, where a lay person and an advanced physics student are observing a Geiger counter in an experiment to identify background radiation:

The lay observer will perceive an instrument that makes clicking noises and perhaps notice that for each click a numerical register increases by one digit. In contrast, the trained physics student will perceive the frequency of clicks and the register reading as indicating the density of gamma and beta radiation at the earth's surface. Without the appropriate training in how to perceive – that is, without the necessary cognitive structures – readings from the instrument will mean different things to different observers.

Kuhn (1962) notes that periodically major anomalies arise in science which show the existing paradigm to be inadequate, giving rise to a period of crisis and eventually to an acceptance that a whole new way of viewing reality, a new paradigm, is required. However, Kuhn (1977, p. 227) argues that even the best of normal research 'is a highly convergent activity based firmly upon a settled consensus acquired from scientific education and reinforced by subsequent life in the profession'.

Kuhn (1962, 1970a, 1970b, 1977) concedes only a limited role to psychological accounts of theory development and change. In doing so, he focused on social

psychology, even then emphasising that he preferred the term ‘sociology’ to refer to what he meant (Kuhn 1970b, p. 240). For Kuhn (1962), knowledge is generated by consensus of the scientific community, and theory change occurs through change in the views and values of the scientific community in different historical periods. He is sufficiently wary of the psychological processes of the individual to embrace the hegemonic influence of ‘normal science’, just as the hegemony of positivism for a long time prevented even psychologists themselves from recognising the relevance of psychology to epistemological questions.

3.4 CONSTRUCTIVISM

The distinction between psychological and sociological processes associated with the generation of knowledge or meaning persists in the variety of views expressed by constructivists. The terms ‘constructivist’ and ‘constructionist’ are widely used interchangeably. However, each term is often used to refer to a variety of quite distinctive views and great care must be taken to be clear about what is being intended by particular authors who use them.

Realism asserts that realities exist outside the mind, and objectivism that such realities have fixed and certain meanings residing within them which human consciousness can discover directly or objectively. Constructivism asserts that we cannot discover meanings objectively, but rather that we construct them as we interact with the world. One view of constructivism is that the world is without meaning until an experiencing human being construes it, or part of it, in a particular way, based on experience. Another view says that we *create* meanings independently of experience, that is, subjectively, and impose them on reality. A third view is that reality *has* meaning independent of human consciousness, and that human beings interpret it, that is, *construct approximations* of it, based on experience.

Crotty argues that, in the constructionist view (as distinct from his definition of a constructivist view), reality has no meaning apart from the meaning human minds

give it. 'Before there were consciousnesses on earth capable of interpreting the world, the world held no meaning' (Crotty 1998, p. 43). Constructionism does not support what Crotty (1998, p. 64) defines as the idealist view, that 'what is real is somehow confined to what is in the mind', but it denies that there can be any *meaning* without a mind. Part of the problem here may again be semantic. If we define meaning as the knowledge experienced or constructed by a mind, then *by definition* we cannot have the former without the latter.

However, Crotty (1998, p. 44) is at pains to point out that, when we construct meaning, 'We have something to work with. ...The world and objects in the world... are partners in the generation of meaning and need to be taken seriously'. There is a clear implication here, if not of meaning inhering in the world or in objects, then at least of an orderliness and intelligibility characterising external reality. It is difficult to reconcile this orderly intelligibility with Crotty's two other claims that 'All reality, as meaningful reality, is socially constructed' (1998, p. 54), and 'social constructionism is relativist' (1998, p. 64). To the extent that knowledge construction takes seriously the orderliness and intelligibility inherent in the world, all constructions, however shared, are not created equal. Put another way, in bringing together object and subject as constructivism does, we need to qualify our previous understandings of the notions of absolute and relative. Each person constructs approximations of the meaning of 'reality', based on their experience of their material and social world and of their own system of cognitive constructs. We might say of the construction of knowledge, what we previously noted Bastick (1982, p. 344) said of intuition; 'The [construction] is correct in that it harmonizes all the subjective information presently available'. Thus, while constructions of meaning will vary from individual to individual, they are not arbitrary or essentially relative.

Crotty (1998, p. 44) explains constructionism as an epistemology that, in resolving the dichotomy between the subjective and the objective, mirrors the concept of intentionality, which had its origins in Scholastic philosophy, and which Husserl

made the central concept of phenomenology. Intentionality is the notion that the object and subject are always intimately related, that human beings (consciousnesses) cannot be adequately described apart from the objects of which we are conscious, or from the world in which we live, and that objects, or the world, cannot be described apart from the human subject. 'To embrace the notion of intentionality is to reject objectivism. Equally, it is to reject subjectivism.' (Crotty 1998, p. 45)

Crotty (1998, pp. 45-51) emphasises some key principles of constructionism: (1) we construct meanings by the interpretive strategies we use; (2) there is *no* true interpretation, only interpretations that are more or less useful, more or less liberating, fulfilling or rewarding; and (3) meanings are not conjured out of nothing and imposed on an object, but have an essential relation to the object.

3.4.1 Social Constructivism

Social constructivists do not merely make assertions about the construction of our social world. They argue that the meanings of both the social and natural worlds are *socially generated*, and that we are '*endowed* [with meanings when]... We are born, each of us, into an already interpreted world' (Crotty 1998, pp. 55, 57, emphasis added). The view here is that meanings are constructed by social and conventional means, that the interpretive strategies we use to construct meaning have their origin in institutions.

The linguistic turn in philosophy and social science changed the way many view reality, our knowledge of it, and the role of language in human life. Language had been viewed as the expression we give to our perceptions of the world, which were determined by the way things are. The linguistic turn resulted from wide acceptance of a different view, that our language determines what things we perceive and how we perceive them, and that such perceptions constitute our reality (Crotty 1998, p. 88). It is a view that assumes that human beings are essentially what language makes us.

In Gadamer's historical hermeneutics, for example, 'the essence of tradition is to exist in the medium of language, so that the preferred *object* of interpretation is a verbal one' (1995, p. 389). For Gadamer (1995, pp. 290, 276) '*Understanding is to be thought of less as a subjective act than as participating in an event of tradition, a process of transmission in which past and present are constantly mediated. ...The self-awareness of the individual is only a flickering in the closed circuits of historical life*'. Similarly, Geertz (1993) argues that human beings are only able to see meanings which are consistent with the given set of significant symbols which constitute our culture. Such significant symbols are 'a set of control mechanisms – plans, recipes, rules, instructions (what computer engineers call "programs") – for the governing of behavior' (Geertz 1993, p. 44). Even our emotions, according to Harre (1986), are no less socially constructed than our thoughts or behaviour. In short, for social constructivists, not only our knowledge, but every *person* is a social construction, 'a personality because he belongs to a community, because he takes over the institutions of that community into his own conduct' (Mead 1974, p. 162). Social constructivism is thus a social behaviourism, reflecting the 'complete determinism' (Skinner 1972, p. 21) of the behaviourist view, that 'The variables of which human behaviour is a function lie in the environment' (Skinner 1977, p. 1).

Few dispute the influence socially promulgated meanings have on all human beings. There is disagreement, however, about how desirable that influence is, how necessary it is, and what its nature should be. As noted above, for example, Kuhn (1962) embraced the hegemonic influence of such conventional meanings in the form of 'normal science'. Crotty (1998, p. 58), too, views favourably the observation that culture shapes the way we see and feel things: 'This shaping of our minds by culture is to be welcomed as what makes us human and endows us with the freedom we enjoy'. A grateful and uncritical acceptance of the hold culture has on individual minds has overwhelmingly characterised social constructivist and interpretivist philosophy and research, particularly in symbolic interactionism and popularised versions of pragmatism (Crotty 1998).

This focus is central to the social behaviourism of Mead (1974), who, as noted above, saw our very personhood as the outcome of the typical practices and ‘significant gestures’ of a culture.

Only in terms of gestures as significant symbols is the existence of mind or intelligence possible; for only in terms of gestures which are significant symbols can thinking – which is simply an internalized or implicit conversation of the individual with himself by means of gestures – take place. (Mead 1974, p. 47)

Social forces shape us as social objects with shared attitudes, argues Mead (1974, pp. 152-164), through the medium of language and the process of taking different roles. This shaping begins in childhood through imitation, play and games (practising the ‘game’ of life as we see others ‘playing’ it), then develops as an emerging conceptualisation of the ‘generalised other’, which eventually is related to social institutions.

[T]he gestures thus internalized are significant symbols because they have the same meanings for all individual members of the given society or social group, i.e., they respectively arouse the same attitudes in the individuals making them that they arouse in the individuals responding to them... (Mead 1974, p. 47).

Thus, in Mead’s view, we internalise the meanings, and become the masks characteristic of the culture of the group, class, institution, within which we grow and live.

Consistent with this ‘symbolic interactionist’ view, and through the influence of cultural anthropologist, Franz Boas, cultures came to be seen by many as irreducible and relative, their validity not to be questioned or criticised (Bloch 1983, pp. 124-128). On this view, the formal search for meaning is seen as an ethnographic process of closely observing social practices and seeking the perspectives of cultural inhabitants, the aim of this naturalistic process being ‘to “get inside” the way each *group* of people sees the world’ and to document the

group's 'distinctive world-view' (Hammersley 1985, pp. 152-153, emphasis added).

By contrast with such uncritical, cultural determinism, the nature and value of, and responses to, so-called socially constructed meanings are vigorously questioned, not only in early versions of pragmatism, but also in early versions of phenomenology, in some approaches to hermeneutics, in a variety of scientific theories, and in critical inquiry in its various guises. A brief outline of just a few of these formulations of understanding follows. While varying greatly in surface details and form, *these perspectives have more in their basic principles that unites them than separates them*. In order to highlight compatibility and conceptual common ground, and because of the space constraints of this thesis, my purpose below is explicitly not to engage in critical analysis or detailed categorisation to emphasise theoretical distinctiveness, but to identify key features of these perspectives. Taken together, they persuasively suggest the character and form of a fundamentally different paradigm of human living, learning and relating.

3.4.2 Marx's Philosophy of Practice

One of the most ardent and articulate critics of modern society and its impact on its members was Karl Marx. Marx developed his 'philosophy of practice' partly in response to the idealism of Hegel and the materialism of Feuerbach, both of which he saw as excessively concerned with abstractions.

The chief defect of all hitherto existing materialism (that of Feuerbach included) is, that the thing, reality, sensuousness, is conceived only in the form of the *object or of contemplation*, but not as *sensuous human activity, practice*, not subjectively. Hence, in contradistinction to materialism, the *active* side was developed abstractly by idealism – which, of course, does not know real, sensuous activity as such. (Marx 1996, p. 121)

For Marx, human beings do not apprehend or appropriate the world passively, but through 'practical-critical' activity, through the pursuit of practical aims and purposes, that is, through changing the circumstances they find in the world.

In such creative acts lies the possibility of transformation into a ‘whole’, ‘total’ person.

Man appropriates his manifold being in an all-inclusive way, and thus as a whole man. All his *human* relations to the world – seeing, hearing, smelling, tasting, touching, thinking, observing, feeling, desiring, acting, loving – in short, all the organs of his individuality, like the organs which are directly communal in form, are in their objective action (their *action in relation to the object*) the appropriation of this object, the appropriation of human reality. The way in which they react to the object is the confirmation of *human reality*. (Marx 1963, p. 159)

Humans *are* thinking beings, but the extent to which ‘objective truth can be attributed to human thinking’, Marx (1996, p. 121) argues,

...is not a question of theory but is a *practical question*. Man must prove the truth, i.e. the reality and power, the this-sidedness of his thinking in practice. The dispute over the reality or non-reality of thinking that is isolated from practice is a purely *scholastic* question.

Marx saw practical activity, purposeful experience, as vital to existence that is *human*, to *human* development and to *human* knowing. However, it is not enough for human beings to engage with the world, since it is through activity within the context of particular social relations that certain systems of beliefs and values come to be imposed on our consciousness. For Marx (1996, pp. 121-122), it must be mindful, critical practice, comprehended practice. Such a critical philosophy examines *what* people do, for what *purpose* and with what *motivation*, and it teaches people to *know* what they do, that is, ‘it learns from practice so as to teach practice to become *self-cognition*’ (Fischer 1973, p. 154).

There is, in Marx’s thought, a dynamic dialectic he derived from the pre-Socratic Greek philosopher, Heraclitus, via Hegel – an appreciation of the contradiction inherent in the nature of thought and reality. It is a recognition that nothing can be adequately defined or understood in isolation, or as a narrowly conceived cause-

effect sequence, but only as a multifaceted interaction of conflicting factors which, nevertheless, lead to a synthesis. This dialectic is clearly evident in the dynamic tension in Marx's work between philosophy and practice. It is equally evident in his denial of both *autonomy* and *determinism*.

Marx certainly recognised, and was passionately critical of, the social and economic conditioning of human thought, subjectivity and action, arguing that, 'What human beings are, therefore, depends on the material conditions of their production' (Marx 1976, p. 70). The 'alienation of labour' consists in the circumstance 'that the work is *external* to the worker, that it is not part of his nature, that consequently he does not fulfil himself in his work' (1976, p. 177). However, Marx saw the economic alienation of the working class as only part of a more pervasive alienation. The self-alienation of the worker is accompanied by domination in the form of a relationship to nature and objects *created by abstract thought*, which 'ignores real nature and man' (Marx 1963, p. 200). The world of nature and objects comes to be seen as external, alien and hostile (1963, p. 200), and, ultimately, to include 'alien and hostile men' (1976, p. 177). Thus, Marx (1963, p. 200) argued that, 'The whole *history of alienation*, and of the retraction of alienation, is, therefore, only the *history of the production* of abstract thought, i.e. of absolute, logical, speculative thought'.

Marx argues that, 'The highest point reached by contemplative materialism, that is, materialism which does not comprehend sensuousness as practical activity, is the contemplation of single individuals and of civil society' (Marx 1996, p. 123). This type of materialism tends to see individuals as abstractions, as objects of generalisations, rather than as unique, real subjects. When it sees them as abstractions, 'only as statistical units, as representations of average modes of behaviour' (Fischer 1973, p. 157), what emerges is a philosophy and social reality devoid of all humanity. More defensibly, argues Marx (1996, p. 123), while 'The standpoint of the old materialism is civil society; the standpoint of the new is human society, or social humanity'.

What human beings are, then, is not just what our circumstances make us. Marx (1976, p. 71) was equally convinced that human beings make their circumstances. He argues, indeed, that while ‘The philosophers have only *interpreted* the world, in various ways; the point is to *change* it’ (Marx 1996, p. 123). In making this assertion, Marx is not putting forward an either/or thesis, but a synthesis of critical thought and purposeful experience. While alienated, fragmented human beings cannot transform themselves into ‘total’ human beings unaided, ‘The materialistic doctrine concerning the changing of circumstances and upbringing forgets that circumstances are changed by men and that it is essential to educate the educator himself’ (Marx 1996, p. 121).

For Marx, the humanisation of society requires *educated* educators, because alienation, for the worker and for the student, is *not* a condition, but an *activity*. ‘It should be noted first that everything which appears to the worker as an *activity of alienation*, appears to the non-worker as a *condition of alienation*’ (Marx 1963, p. 134). Accordingly, the educators needed to assist other individuals to transform themselves by applying critical thought in the context of purposeful experience, are *educated* educators, those engaged in changing themselves, those themselves capable of critical practice and of transcending given systems, structures, contexts, and reified definitions, meanings and masks.

3.4.3 Phenomenology

In his explanation of phenomenology, Crotty (1998, p. 79) notes that the ‘socially constructed’ meanings already embodied in the cultures and sub-cultures we are born into, ‘are taught and we learn in a complex and subtle process of enculturation’. Enculturation is not constructivism. It is behaviourism. It becomes clear that the processes of meaning construction described by Crotty and outlined above, could apply to the individual’s construction of meaning, but do not apply, except in the most constrained way, to the individual’s acquisition of so-called socially constructed meanings.

[Social constructionism] denies that [individual construction of meanings based on engagement with objects and phenomena in the world] is what actually happens, *at least in the first instance...* Our cultural heritage can therefore be seen as pre-empting the task of meaning making so that, for the most part, we simply do not do what [individual] constructivism describes us as doing. *Phenomenology, however, invites us to do it.* (Crotty, p. 79, emphasis added.)

Indeed, Crotty (1998, p. 51) again contradicts his advocacy of social constructionism in preference to (individual) constructivism, when he asserts that, Research in constructivist vein... requires that we not remain straitjacketed by the conventional meanings we have been taught to associate with the object. Instead, such research invites us to approach the object in a radical spirit of openness to its potential for new or richer meaning. It is an invitation to reinterpretation.

Phenomenology acknowledges that culture supports human existence in important ways. However, it is critical of culture's binding effect on people. Enculturation *imposes* meanings. It imposes abstract concepts, definitions and constructs as 'truths' of reality, a body of 'knowledge', a body of primary, representational elements, which stand between us and reality, which become, for us, reality. Ortega y Gasset describes such meanings 'received from without' (1958, p. 101) as 'masks of thinking', 'trappings' and 'screens' (1946, pp. 59-63), 'decrepit and devoid of evidence' (1958, p. 101), and observes that instead of engaging experientially with the world, we find ourselves 'living on top of a culture which has already become false' (1958, p. 100). For Heidegger (1996, pp. 119, 159), the 'public way in which things have been interpreted' is a seduction and a domination, in which 'the they unfolds its true dictatorship... [and] determines what and how one "sees"'.

Abstract concepts are not able to capture the rich density of direct experience. Not only do our received notions blind us to reality (Wolff 1989, p. 326), but our immersion in such abstractions alienated from experience, our 'accustoming

ourselves to the venom of truth’, Cioran (1987, p. 222) emphasises, offends our common sense, which denounces the absurdity of our ‘will to blindness’. Cioran (1987, p. 222) argues that, ‘Our inmost aridity results from our allegiance to the rule of the *definite*, from our plea in bar of imprecision, that innate chaos which by renewing our deliriums keeps us from sterility.’

Crotty argues that two of the most central characteristics of phenomenology have been lost in what is presented today as phenomenology. Today, he observes (1998, p. 83), ‘It is self-professedly *subjectivist* in approach (in the sense of being in search of people’s subjective experience) and expressly *uncritical*’. In contrast, the phenomenology of the phenomenological movement is centrally concerned with the first person exercise of exploring our own experience of objects and phenomena, and with making critique a radical and necessary element in all human inquiry (Crotty 1998, pp. 82-85).

Phenomenology emphasises the central importance of experience. Minsky (1987, p. 39) warns that, ‘one must not mistake defining things for knowing what they are’. Merleau-Ponty (1962, p. 23) also warns us against the positivist approach of establishing abstract ‘significations’, a particular *body of knowledge*, in an attempt to ‘build up the shape of the world’. Rather, we should individually construct and test our knowledge against experience, recognising our *experience* ‘as the source which stares us in the face and as the ultimate court of appeal in our knowledge’ (Merleau-Ponty 1962, p. 23). As Laing (1971, p. 16) put it, ‘I cannot experience your experience. You cannot experience my experience... *Only* experience is evident. Experience is the *only* evidence’. Phenomenology suggests we put aside, or question, the pre-constructed meanings imported to us from our culture, and, through direct experience of objects and phenomena, either authenticate them, refine them, or reconstruct them.

3.4.4 Pragmatism

Pragmatism, for Peirce (1974), from whose work it derives, was a critical philosophy. Independently paralleling the phenomenologists efforts to make sense of phenomena encountered in immediate experience, Peirce sought ways to categorise knowledge and to understand how individuals conceptualise or construct experience in its ‘Firstness’, or qualitative immediacy, as well as in its ‘Secondness’, or reaction between ego and non-ego, and ‘Thirdness’, or representation through signs (Spiegelberg 1981, pp. 31-36). For Peirce (1974, vol. 5, p. 9), pragmatism is not a *weltanschauung*, an uncritical worldview, but is a ‘method of reflexion which is guided by constantly holding in view its purpose and the purpose of the ideas it analyses, whether these ends be of the nature and uses of action or of thought’.

Similarly, Dewey was centrally concerned with how thought functions, and with critical evaluation as part of a continuous reconstituting of experience and of intelligently directed action. Two key concepts in Dewey’s theory are ‘situation’ and ‘inquiry’. Dewey was strongly influenced by the notion of dialectic employed by Hegel, and he rejected dualisms in both subject matter and methods of inquiry. Thus, for Dewey, the subject matter of inquiry should be contextualised in a *situation*:

What is designated by the word “situation” is *not* a single object or set of objects and events. For we never experience nor form judgements about objects and events in isolation, but only in connection with a contextual whole. ...In actual experience, there is never any such isolated singular object or event; *an* object or event is always a special part, phase, or aspect, of an environing experienced world – a situation. (Dewey 1938, pp. 66-67)

Dewey also argued that contexts, and the particular objects and relations within them, are interpreted differently depending on our purpose, point of view, or a perceived problem. Thus, *inquiry* is ‘...*the controlled or directed transformation of an indeterminate situation into one that is so determinate in its constituent*

distinctions and relations as to convert the elements of the original situation into a unified whole' (Dewey 1938, pp. 104-105).

As Thayer (1968, p. 173) notes, Dewey refused to use the authoritative language of traditional philosophising, because it inevitably gives rise to 'metaphysical and epistemological collisions', the 'perennial' philosophical problems. One of the notions emphasised by Dewey, as a way of transcending dualisms, is the idea of *continuity*, which he associated with concepts like 'growth', 'process', 'interaction', 'integration', and 'whole'.

Drawing upon understandings of the biological basis of life, Dewey saw a continuity between human activity and an environment. 'An organism does not live *in* an environment; it lives by means of an environment' (Dewey 1938, p. 25). Thus, for Dewey (1916, p. 12), education is 'a fostering, a nurturing, a cultivating, process' having for its purpose expansion of the capacity for growth, and 'there is no lower and higher, but simply education' (1932, p. 82). That capacity for growth is not just a passive one, a 'mere receptivity... [to] external influences', or 'conformity to environment as wax conforms to the seal which impresses it' (Dewey 1916, pp. 49, 55), having as its end a socially approved adult. Nor is it an active one in the sense of the mere unfolding of powers lying latent within the individual, having as its end the full realisation of inherent potential. In each of these cases, 'growth is regarded as *having* an end, instead of *being* an end' (Dewey 1916, p. 60). Each of these theories, Dewey argued, is based on a false dualism of environment and individual, of external stimulus and internal response.

The distinctions of stimulus and response do not exist independent of a larger process. When we think in terms of sensing a stimulus, such as a light, for example, the 'real beginning' is not a sensation, but 'the *act* of seeing' (Dewey 1931, p. 235), affected by prior experience and our current purposes and expectations. Sensing and responding interact with each other as functions within, and dependent upon, the continuity of particular situations. Stimulus and response 'are not distinctions of

existence, but teleological distinctions, that is, distinctions of function, or part played, with reference to reaching or maintaining an end' (Dewey 1931, p. 242).

Where prior experiences with a particular stimulus have led to variable consequences, the problem becomes not to determine the response, but how to 'constitute' or interpret the stimulus in the current situation. 'Uncertainty as to the next act... gives the motive to examining the act. *The end to follow is, in this sense, the stimulus.* It furnishes the motivation to attend to what has just taken place; to define it more carefully' (Dewey 1931, p. 245, emphasis added). Thus, experience (stimulus) presents us with multiple possibilities for action (response), but experience must be critically examined and constituted *before* further action, consistent with our purposes, is selected and taken. 'Just as the discovery of the sensation marks the establishing of the problem, so the constitution of the response marks the solution of this problem' (Dewey 1931, p. 246).

For Dewey, life consists of a recurring pattern of such conflict and reconstruction, with a situation at the beginning that is 'disturbed, troubled, ambiguous, confused, full of conflicting tendencies, obscure, etc.' and a unified, resolved situation in the end (1938, p. 105). *Intelligent* action consists in a pattern of thinking or inquiry, which begins with the perception by an individual, or group of individuals, that an indeterminate situation constitutes a problematic situation *in relation to the individual's aims or purposes.*

A true aim is thus opposed at every point to an aim which is imposed upon a process of action from without. The latter is fixed and rigid; it is not a stimulus to intelligence in the given situation, but is an externally dictated order to do such and such things... In education, the currency of these externally imposed aims is responsible for the emphasis put upon the notion of preparation for a remote future and for rendering the work of both teacher and pupil mechanical and slavish. (Dewey 1916, p. 129)

Having identified a situation as *problematic for him or herself*, an individual must adequately constitute or formulate the problem. The way in which this is done 'is

the criterion for relevancy and irrelevancy of hypotheses and conceptual structures' (Dewey 1938, p. 108).

In the next stage of the process of inquiry, 'factual conditions' determined by observations suggest ideas or 'forecasts' that certain operations performed in observed conditions will lead to the solution of the problem. The relevance of ideas to an inquiry is then the subject of a process of reasoning, not of an inferential, but of a critical kind. *'When a meaning is immediately accepted, inquiry is cut short. Hence, the conclusion reached is not grounded, even if it happens to be correct'* (Dewey 1938, p. 111, emphasis added).

Dewey (1916, pp. 226-227) emphasises the importance, in formal education programs, of such purposeful selection and critical examination of meanings *in the context of authentic inquiry*:

The subject matter of education consists primarily of the meanings which supply content to existing social life... [and which] are contributed to present activity by past collective experience. ...There is need of special selection, formulation, and organization in order that they may be adequately transmitted to the new generation. But this very process tends to set up subject matter as something of value just by itself, apart from its function in promoting the realization of the meanings implied in the present experience of the immature. Especially is the educator exposed to the temptation to conceive his task in terms of the pupil's ability to appropriate and reproduce the subject matter in set statements, irrespective of its organization into his activities as a developing social member.

Thus, Dewey (1938, p. 111) argues the need for an 'examination of the meaning as a meaning', and what it implies in relation to other meanings in the situation as constituted in the inquiry, because our acceptance of particular meanings commits us to others in the same system. The critical examination of meanings and the interaction of operational facts and ideas gives rise to possible solutions to the

problematic situation. These are subjected to experimentation, or testing, of a kind appropriate to the character of the original problematic situation.

For Dewey, inquiry concludes with the transformation of the indeterminate situation that had become problematic. The ‘existential reconstruction ultimately effected’ (Dewey 1938, p. 489) is the ultimate basis for a judgement regarding the validity of any new belief or knowledge, or, as Dewey (1938, p. 9) preferred, for a ‘warranted assertion’. His theory of ‘truth’ does not focus on propositions or statements. Truth is not essentially linguistic, but experiential.

My own view takes correspondence in the operational sense it bears in all cases except the unique epistemological case of an alleged relation between a “subject” and an “object”: the meaning, namely, of *answering*, as a key answers to conditions imposed by a lock, or as two correspondences “answer” each other; as, in short, a *solution* answers the requirements of a *problem*. On this view, both partners in “correspondence” are open and above board, instead of one of them being forever out of experience and the other in it by way of a “percept” or whatever. (Dewey 1938, pp. 343-344)

Thus, Dewey’s notion of ‘truth’ refers to the correspondence or fit between sets of conditions and operations, between *situations*, mediated by *inquiry*.

On this view, notions of meaning and intelligence are inseparable from notions of value and judgement. Any genuine situation of experience in which ‘judgement and choice are required antecedently to overt action’ calls for ‘inquiry [which] is intelligence’ (Dewey 1920, pp. 163-164). As the warranted assertion is the evaluated result of judgement, all such inquiry aims at the achievement of a good. According to Dewey (1922, p. 210), ‘Good consists in the meaning that is experienced to belong to an activity when conflict and entanglement of various incompatible impulses and habits terminate in a unified orderly release in action’. Thus, for Dewey, the active *process* of growth, of continual transforming of existent situations, of engagement in intelligently directed courses of action, is the

significant thing in life and education, rather than the static outcome, ‘truth’ statement, or knowledge product.

3.4.5 Freire’s Gnosiological Cycle of Knowledge

For Freire, to be human is to be in constant relationship to the world. Subjectivity and objectivity form a ‘dialectical unity from which emerges knowledge closely linked with action’ (Freire 1976, p. 144). Freire argues that reflection and action are so radically interactive that one suffers if the other is even partly sacrificed, the former changing into an alienated and alienating ‘*verbalism*’, the latter into ‘*activism*’. ‘Either dichotomy, by creating unauthentic forms of existence, also creates unauthentic forms of thought, which reinforce the original dichotomy’ (Freire 1972a, p. 60).

Freire acknowledges the power of pre-constructed definitions and interpretations marked out by one generation and encountered by the next. Acquiescence in this normalised ‘today’ constitutes naïve thinking (Freire 1972a, p. 65). Freire argues that when such reified meanings are prescribed for others, they are ‘domesticating’, and that ‘any attempt to manipulate people to adapt them to this reality... means taking from them their opportunity and their right to transform the world’ (1976, pp. 146-147).

In the dynamic historical-cultural process, human beings apprehend the world, transform the world, and undergo the effects of their transformation. This process involves an ‘authentically gnosiological condition’ (Freire 1976, p. 152), a ‘gnosiological cycle of knowledge’, which includes two dialectically related moments, *knowing* existing knowledge and *production* of new knowledge (Shor & Freire 1987, pp. 7-8). This cycle gives rise to what Freire (1976, pp. 145-146) terms ‘conscientisation’. Conscientisation takes place as consciousness ‘goes beyond the mere *apprehension* of the presence of a fact, and places it critically in the system of relationships within the totality in which it exists’ (Freire 1976, p. 146) in a metacognitive reflection upon itself. Conscientisation ‘can only be manifested in

the concrete praxis' and 'requires one's critical insertion in the reality which one begins to unveil' (Freire 1976, pp. 147, 146). Thus, in contrast to naïve thinking, 'critical thinking... perceives reality as process and transformation, rather than as a static entity' (Freire 1972a, p. 64) or 'just simply the objective datum' (Freire 1972b, p. 31).

The 'authentically gnosiological condition' requires a 'truly gnosiological relationship', in which educator and educatee are both cognitive subjects (Freire 1976, pp. 152, 147), since 'dialogue as a fundamental part of the structure of knowledge needs to be opened to other Subjects in the knowing process' (Freire 1976, p. 148). In contrast to the 'false educator', who can only 'domesticate' educatees by further mythifying reality instead of demythifying it, the task of the authentic educator is to problematise for educatees real, concrete, existential situations (Freire 1976, pp. 147-151).

The process of problematisation is basically someone's reflection on a content which results from an act, or reflection on the act itself in order to act better together with others within the framework of reality... Discussion about *transcendence* must take its point of departure from discussion on the *here*, which for humans is always a *now* too. (Freire 1976, p. 152)

Freire (1976, pp. 152-153) suggests that, in making problematic the world of culture and history, created through the interaction of human beings and the world, educators and educatees together 'enter into' it critically. He suggests we 're-enter into' the world through the 're-entering into' of previous understandings 'which may have been arrived at naïvely because reality was not examined as a whole'. In doing so, Freire argues (1976, p. 153), human beings become aware of how they generate knowledge, and perceive a need for knowing even more. They also come to realise that the world is not an unalterable given, but merely 'limiting – and therefore challenging', that they are not merely objects of their history, but that they are subjects who can transform the world and humanise it, and in so doing transform themselves (Freire 1972a, pp. 57-58).

3.4.6 Piaget's Genetic Epistemology

The work on cognition of Frenchman, Jean Piaget, spanned seventy years, during which time he published eighty eight books and innumerable articles and research reports. Some elements of his thinking remained constant, while others inevitably changed or expanded. After concentrating almost exclusively on Piaget for six years and periodically revisiting his work for a further twenty years, reading both English translations and the original French writings of Piaget, Glasersfeld (1995), a multilingual psychologist and specialist in linguistics, notes that the vast majority of translations of Piaget's writings make it almost impossible to understand his views. This is a consequence, he argues, of the 'naïve realist' philosophical assumptions of translators, that have caused them to unconsciously bend what they read in Piaget's original texts (Glasersfeld 1995, p. 12). Moreover, because Piaget's writing is not easy reading, and because of the sheer volume of his work, most of those who seek to summarise his ideas do so based on a small number of books or articles. Consequently, countless texts and articles about Piaget's ideas provide an incomplete view of his theory, or distort key concepts (Glasersfeld 1995, p. 53). Accordingly, my discussion here of some of the more important, yet frequently misinterpreted concepts in Piaget's theory of knowing follows Glasersfeld's (1995, pp. 12-14, 53-75).

Piaget sought to develop a coherent model of human cognition and its development, based on observations of the interactions of children and their environment, in order to provide a 'biological explanation of knowledge' (Piaget 1952, p. 240). This purpose was in stark contrast to the assumptions underlying philosophers' traditional approach to epistemology. It challenges fundamental notions of 'reality', 'truth' and 'knowledge' based on impersonal, universal, and ahistorical *reason*, and shifts the focus to the world that a person *experiences* (Glasersfeld 1995, pp. 54-55).

In Piaget's view, the subject organises or constructs knowledge in the context of purposeful physical, social or mental activity (Piaget 1955, p. 311; 1970, p. 15; 1971a, p. 10; 1973, p. 38), so that 'the essential aspect of thought is its operative and not its figurative aspect... [and] knowing an object does not mean copying it – it means acting upon it' (Piaget 1970, p. 15). Knowledge is a mental organisation of the experiential world, rather than a passive copy of reality, and has no direct, *representational correspondence* with an ontological reality. 'So what remains is, again, the constructivist hypothesis, and is it not quite plausible to think of the nature that underlies physical reality as constantly in process of construction rather than as a heap of finished structures?' (Piaget 1971b, p. 68)

Two notions central to Piaget's theory of knowing, and often misunderstood, are 'assimilation' and 'accommodation'. Glasersfeld argues that, while assimilation is often explained as a process whereby material is brought '*from the environment*' into the individual, Piaget intended it to mean 'treating new material *as an instance of something known*', so that 'when an organism assimilates, it remains unaware of, or disregards, whatever does not fit into the conceptual structures it possesses' (Glasersfeld 1995, pp. 62-63).

Piaget uses the terms 'assimilation' and 'accommodation' in the context of what he called 'action schemes' (see Figure 2). He argued that,

Knowing does not really imply making a copy of reality but, rather, reacting to it and transforming it... in such a way as to include it functionally in the transformation systems with which these acts are linked... [A]ll knowledge presupposes some assimilation... [and] to know an object implies incorporating it into action schemata' (Piaget 1971a, pp. 6-8).

If, in the process of assimilation, the cognising subject ignores material that does not fit its existing conceptual structures, we might wonder why and how any learning might ever take place. It is within the context of action schemes that we find an answer.

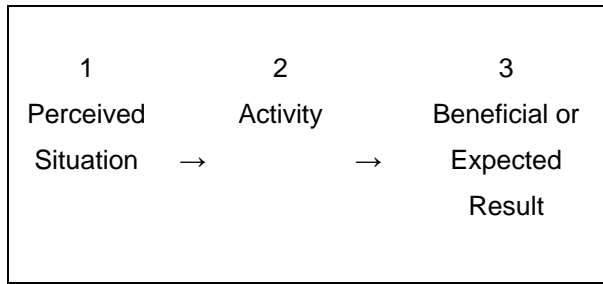


Figure 2: Piaget's pattern of action schemes (Glaserfeld 1995, p. 65)

The notion of action schemes was derived from biology. Piaget noted that the evolution of genetically determined reflexes could not adequately be accounted for by the common, behaviourist conception of the stimulus-response reflex (Glaserfeld 1995, p. 64). The natural selection of particular reflexive actions could only be due to the *results* of actions (responses), not to the actions themselves. Piaget conceived of the reflex as consisting of three parts, and adopted it as a tool to explain cognitively developed action and thought patterns entirely unrelated to genetic influences.

Glaserfeld (1995, p. 65) specifies the three parts of the action scheme shown in Figure 2 as:

1. 'Recognition of a certain situation;
2. a specific activity associated with that situation; and
3. the expectation that the activity produces a certain previously experienced result'.

If the experiential situation in part 1 is *recognised as having the same characteristics* as a previous situation (though to an external observer it may also have some different characteristics which the cognising subject has ignored), assimilation has taken place, and the activity in part 2 that has been associated with the situation, based on previous results, is triggered. If the individual is then unable to assimilate the result (part 3) of the activity to its expectation, there will be a perturbation, which problematises the experiential situation (Piaget 1974, p. 336). In this case, the individual is likely to review the experiential situation and analyse

it to determine if there are some differences between it and previous situations that might explain the different result (Glaserfeld 1995, p. 65). If differences are identified, a new recognition pattern, a new action scheme, may be formed. An ‘accommodation’ occurs and learning takes place. An accommodation might also result if the review identifies a difference in the performance of the activity (Piaget 1974, pp. 335-336).

‘Equilibration’, a generic term Piaget used for the elimination of perturbations, includes the resolution of perturbations arising in response to the purely internal process of abstract reflection. Glaserfeld (1995, p. 67), noting that the history of science provides many examples, explains that:

Every time the cognizing subject manages to eliminate a novel perturbation it is possible and sometimes probable that the accommodation that achieved this equilibration turns out to have introduced a concept or operation that proves incompatible with concepts or operations that were established earlier and proved viable in the elimination of other perturbations. When such an inconsistency surfaces, it will itself create a perturbation on a higher conceptual level, namely the level on which reflection reviews and compares available schemes. The higher-level perturbations may then require a reconstruction on a lower level, before a satisfactory equilibrium can be restored.

Any accommodation, whether in response to perturbations resulting from interaction with the physical world or with other people, or from reflection, *results mainly from the cognising subject’s unobservable expectations, goals and values*, rather than from what an observer may identify as sensory or linguistic ‘input’ (Glaserfeld 1995, pp. 66, 68).

The centrality of action schemes and the instrumental function of equilibration in Piaget’s theory of knowing highlights the significance of the nature and variety of *contexts* for learning and knowing. Glaserfeld notes that aspects of the ‘staged’ nature of cognitive development have been widely misunderstood (Glaserfeld

1995, p. 71). Rather than the stages of development being seen as a conceptual tool for *organising the observer's experience* with subjects, they have tended to be seen as a description of the objective *mental reality of observed subjects*. Glasersfeld (1995, p. 71) points out that Piaget came to view the notion of stages differently than he did initially. Piaget first believed that cognitive processes were relatively independent of context, and that once a mental operation characteristic of the next developmental stage had been demonstrated, that mode of operation would be available to the subject in all contexts where it might be needed. Given the key elements of Piaget's theory, it is not surprising that it later became clear that the significance of context had been underestimated, and that a subject might demonstrate mental operations of a particular stage in one context, but still only be able to operate at an earlier stage in other contexts (Glasersfeld 1995, pp. 71-72).

In Piaget's model, cognitive structures are instrumental and are tied to goal-directed action schemes, so that,

...human beings never remain passive but constantly pursue some aim or react to perturbations by active compensations consisting in regulations. It follows from this that every action proceeds from a need which is connected with the system as a whole and that *values likewise dependent on the system as a whole are attached to every action and to every situation* favourable or unfavourable to its execution. (Piaget 1973, p. 38, emphasis added.)

Cognitive structures are evaluated in terms of their viability in the experiential world and their fit with the whole conceptual system, rather than by unattainable evidence of correspondence with ontological reality.

The subject can '*know* no more than that certain structures and schemes have clashed with constraints, while others constitute a viable way of managing' (Glasersfeld 1995, p. 73). On the sensorimotor level, those 'constraints' come from the physical and social environment, and 'managing' consists in achieving practical goals such as sensory equilibrium and survival. On the level of abstract reflection, however, 'constraints' come from the cognitive structures themselves – action

schemes, concepts, theories and rules – and ‘managing’ consists in achieving the epistemic goal of conceptual coherence, the non-contradictory fit of concepts into an ever-growing conceptual system.

3.4.7 Radical Constructivism

Glaserfeld (1995, p. 18) observed that the many authors who began professing a constructivist orientation in the 1970s in response to Piaget’s work, focused on the notion that subjects build up cognitive structures, but seemed unaware of Piaget’s concept of knowledge. In courses he was teaching on genetic epistemology, Glaserfeld wished to distinguish his interpretation of Piaget’s theory from these other versions of constructivism, which he considered trivial. Piaget, however, is only one of many thinkers and researchers who Glaserfeld draws upon in support of his extended argument for a more profound version of constructivism.

Glaserfeld called his model ‘radical’, in order to emphasise that it involves a complete revision of traditional epistemology’s concepts of knowledge, truth, understanding and communication. Glaserfeld (1995, p. 18) specified two basic principles for radical constructivism:

- ‘knowledge is not passively received but built up by the cognizing subject;
- the function of cognition is adaptive and serves the organization of the experiential world, not the discovery of ontological reality’.

Thus, radical constructivism places responsibility for thought and action on the *individual* subject.

Glaserfeld observes that there is no test that could give us assurance that our knowledge is a representation of ontological reality. For example, in the context of information processing it is claimed that the cognitive organism forms representations which ‘encode’ information gathered from reality. However, in order to create a code we need a semantic connection between a signifier and something signified. ‘Because the presumed ontological reality always remains on the other side of our experiential interface, the second condition [access to the meaning of the thing signified] ...cannot be fulfilled’ (Glaserfeld 1995, p. 115).

Thus, it is misleading to say that our senses receive coded information about reality.

Glaserfeld (1995, pp. 115-116) notes further difficulties with this view. Perception is a constructive activity in two senses. First, we interpret the signals we receive. This is illustrated by Foerster's Principle of Undifferentiated Encoding. 'The response of a nerve cell does *not* encode the physical nature of the agents that caused its response. Encoded is only "how much" at this point on my body, but not "what"' (Foerster 1981, p. 293). Thus, signals received by our senses represent the intensity of stimuli, but the *quality* of the stimuli is not encoded. It requires an interpreter to construct a picture of the world from relations between the signals in 'never ending recursive processes of computation' (Foerster 1981, p. 296).

Secondly, perception is a constructive activity in terms of what we actively choose to perceive. Glaserfeld (1995, pp. 10-11, 116) cites experimental evidence that subjects can shift their focus of attention *within the perceptual field*, without physically moving their eyes or their bodies. We are selective in what we attend to, according to our interest.

Glaserfeld (1995, pp. 129-145) argues convincingly also, that language is not an objective entity shared by all members of society. Wittgensteinian notions of language games and meaning-as-use 'do not explain how the individual user becomes a proficient player' (Glaserfeld 1995, p. 134).

Wittgenstein was, of course, well aware that one could think of 'use' as individual and private, consisting in a person's calling up associated experiences. He had mentioned this long before in his notes for students, but he added that there is something occult about this mental capability and that it should therefore be avoided. He hoped it could be avoided by assuming that the meaning of a linguistic expression could be captured by observing the way a social group uses it in their language games...

[Wittgenstein] struggled until his death to convert the notion of meaning

and truth into a logical certainty, but the final pages of his notebook (1969) show that he did not succeed in eliminating the subjective element. (Glaserfeld 1995, p. 134)

Glaserfeld argues that the 'subjective element', that is, the meaning making processes internal to the individual, cannot be eliminated, because the semantic connection linking sound-images to meanings is actively formed by each individual language user.

Glaserfeld (1995, p. 47) quotes Saussure's explanation of what happens when two people speak to each other:

Suppose that two people, A and B, are conversing with each other. Suppose that the opening of the circuit is in A's brain, where mental facts (concepts) are associated with representations of the linguistic sounds (sound-images) that are used for expression. A given concept unlocks a corresponding sound-image in the brain; this purely *psychological* phenomenon is followed in turn by a *physiological* process: the brain transmits an impulse corresponding to the image to the organs used in producing sounds. Then the sound waves travel from the mouth of A to the ear of B: a purely *physical* process. Next, the circuit continues in B, but the order is reversed: from the ear to the brain, the physiological transmission of the sound-image; in the brain, the psychological association of the image with the concept. If B then speaks, the new act will follow – from his brain to A's – exactly the same course as the first act and pass through the same successive phases,... (de Saussure, 1959, p. 11-12)

Glaserfeld (1995, pp. 47-48) notes that Saussure's explanation of how language functions illustrates two fundamental things. Firstly, the connection between sound-images and concepts, that is, between a word and the meaning given it, is a psychological association, which can only be made within the subjective experience of the individual. Secondly, since no individual's experience can include all the situations that have given rise to the semantic connections (psychological associations) made by all other individuals within the social group,

the collective sense of the word 'language' requires an abstraction that nobody could hope to approximate.

If one accepts this analysis, the notion collapses that every child growing up in a linguistic community will automatically associate the sound-images it perceives with concepts shared with the entire community. Instead, learning the language will be seen as a never ending process of adaptation of one's own concepts, governed by the need and the wish to establish mutually compatible associations to the speech sounds one is hearing and producing. The expression 'shared meaning' is therefore a little misleading. (Glaserfeld 1995, p. 48)

In day to day exchange by proficient language users, most meanings will appear to be 'shared' by individual speakers. But from a radical constructivist perspective, 'the notion of "sharing" does not imply sameness but compatibility in the context of mental constructs' (Glaserfeld 1995, p. 137). When the conversation turns to more abstract matters, semantic or conceptual discrepancies are more likely to perturb the interaction. Noting the irony that Vygotsky is regarded by social constructivists as their founding father, Glaserfeld (1995, p. 141) emphasises the compatibility with radical constructivism of Vygotsky's statement that, 'To understand another's speech, it is not sufficient to understand his words – we must understand his thought. But even that is not enough – we must also know his motivation. (Vygotsky, 1962, p.151)'. If participants in a conversation do not assume that words refer to a real world beyond personal experience, but accept the view that another person's meanings for words are ultimately instrumental, personal constructs, a particular quality of respect is created, and resolution of conflicts, if not of conceptual discrepancies, has a greater likelihood of being achieved.

The reality we each live in, then, is the world of our experience. In examining what scientists actually do, and what the vast majority would acknowledge that they do when using the scientific method, Glaserfeld (1995, pp. 116-117) notes that what

matters is *experience*. In observing, setting in place particular experimental conditions or constraints, hypothesising connections between observations, and predicting what we will observe, scientists operate within the field of experience.

Seen in this way, the scientific method does not refer to, nor does it need, the notion of ontological reality. ...Scientific knowledge, then, is deemed more reliable than common-sense knowledge, not because it is built up differently, but because the way in which it is built up is explicit and repeatable. (Glaserfeld 1995, p. 117)

To accept that we can have no assurance that our knowledge is a representational correspondence with ontological reality does not mean we can construct any 'reality' we want. The notion of viability requires fit with experience in the material and social worlds and with the individual's conceptual system as a whole, so that external and internal impediments and constraints limit our thinking and acting.

3.4.8 Koestler's Act of Bisociation

In *The Act of Creation*, Koestler (1964) suggests the key elements of the thought processes underlying creativity, which continue to form the foundation of much thought and research on creativity (Boden 1990, pp. 23-25). Koestler sees any skill, habit, coherent thinking or pattern of ordered behaviour as like playing a game. Each game is an 'associative context', a 'matrix', 'frame of reference', or 'universe of discourse', which is governed by a 'code' of rules (Koestler 1964, pp. 38, 40).

The code is the fixed, invariable factor in a skill or habit; the matrix its variable aspect... the ensemble of permissible moves. The two words do not refer to different entities, they refer to different *aspects* of the same activity. [T]he choice of the actual move among the variety of permissible moves is a matter of *strategy*... (Koestler 1964, pp. 40, 42)

Koestler (1964, p. 42) observes that the controls of much human activity function unconsciously, including not only visceral and muscular activity, but also much 'thinking', acting, and making meaning out of our perception.

The selective codes in this [latter] case operate on the input, not on the output. ...[B]efore reaching awareness the input is filtered, processed, distorted, interpreted, and reorganised in a series of relay-stations at various levels of the nervous system; but the processing itself is not experienced by the person, and the rules of the game according to which the controls work are unknown to him. (Koestler 1964, p. 43)

Thus, Koestler (1964, p. 44) concedes that, 'up to a point', the behaviourist view of the human being as a conditioned automaton is valid, acknowledging that:

We learn by assimilating experiences and grouping them into ordered schemata, into stable patterns of unity in variety. They enable us to cope with events and situations by applying the rules of the game appropriate to them. The matrices which pattern our perceptions, thoughts, and activities are condensations of learning into habit. ...When the same task is encountered under relatively unchanging conditions in a monotonous environment, the responses will become stereotyped, flexible skills will degenerate into rigid patterns, and the person will more and more resemble an automaton, governed by fixed habits, whose actions and ideas move in narrow grooves. (Koestler 1964, pp. 44, 118-119)

For Koestler, the point at which the view of human beings as conditioned automatons ceases to be viable, is in the act of 'bisociation'.

Habit is defeated by originality in an 'act of liberation' (Koestler 1964, p. 96) when the creative act makes connections between previously isolated associative contexts. 'The bisociative act connects previously unconnected matrices of experience; it makes us "understand what it is to be awake, to be living on several planes at once"' (Koestler 1964, p. 45). Koestler suggests the bisociative act enables human beings to escape from 'our more or less automatized routines of thinking and behaving' (1964, p. 45), to avoid the 'hidden snares of language' (1964, pp. 173-177), and to 'attain to a higher level of mental evolution' (1964, p. 96). The view of associative processes as pertaining to an independent and autonomous matrix, and of bisociative processes as pertaining to the interaction of

independent matrices, is not to be taken as an absolute one, ‘because the members of a matrix are sub-skills, i.e. matrices in their own right on a sub-ordinate level of the hierarchy, and the degree of integration, i.e. the coherence of the matrix, varies according to case’ (Koestler 1964, p. 656).

For Koestler, the logical pattern of creativity always consists in the discovery of connections or hidden similarities between independent matrices of perception or thought. However, he describes a triptych of creative activities which shows how particular patterns of creative activity can find expression in three domains, each characterised by a different emotional climate (see Figure 3). While emphasising that the three domains are not to be thought of as watertight compartments, but as blending into one another (1964, p. 27), Koestler suggests that, when bisociation connects previously unrelated matrices, the result ‘is either a *collision* ending in laughter, or their *fusion* in a new intellectual synthesis, or their *confrontation* in an aesthetic experience’ (1964, p. 45).

humour the jester		discovery the sage		art the artist
riddle	↔	problem	↔	allusion
debunking	↔	discovering	↔	revealing
comic simile	↔	hidden analogy	↔	poetic image
satire	↔	social analysis	↔	allegory
impersonation	↔	empathy	↔	illusion
coincidence	↔	"trigger"	↔	fate
caricature	↔	schematisation	↔	stylisation
pun	↔	word-puzzle	↔	rhyme
witticism	↔	epigram	↔	trouvaille
laughter absurd view of existence		understanding abstract view of existence		wonder lyric view of existence

Figure 3: Adaptation of Koestler’s triptych of creative activities (after Koestler 1964, p. 24)

The humorist relies a great deal on the effect of surprise – ‘the bisociative shock’ (Koestler 1964, p. 91). Consider the following joke as an illustration: Two men drinking in a bar. One says to the other, “I think I should tell you, I am sleeping with your mother”. The second man looks directly at the first and replies, “Go home, Dad. You’re drunk!”

To achieve ‘the bisociative shock’, the humorist must be able to transcend stereotyped routines of thought and have the mental agility to shift attention spontaneously from one frame of reference to a normally unrelated one. Koestler (1964, p. 93) explains that,

In actual fact... the bisociative act, in humour as in other branches of creativity, depends in varying degrees on assistance from fringe-conscious or unconscious processes. ...On the other hand, the mediocre cartoonist and other professional craftsmen of the comic operate mostly with the same familiar matrices, fixed at a given angle, as it were, governed by familiar rules of the game; and their task is reduced to devising new links – puns, gags, pegs for parody. It is a mechanized kind of bisociative technique, which also has its practitioners in science and art.

When, in intellectual, artistic or everyday activity, we come to see a particular situation as problematic, we constitute the problem according to a matrix or associative context which previous experience suggests is appropriate, and respond in accordance with the code of rules which enabled us to deal with similar problems in the past. Despite the resemblance in some respects of the new situation to ones encountered previously, new conditions may make it impossible to solve the problem using the same set of game rules applied in the past. ‘When this happens we say that the situation is *blocked* – though the subject may realize this fact only after a series of hopeless tries, *or never at all...* [even though a] blocked situation increases the stress of the frustrated drive’ (Koestler 1964, p. 119, emphasis added).

The prejudices and impurities which have become incorporated into the verbal concepts of a given ‘universe of discourse’ cannot be undone by any amount of discourse within the frame of reference of that universe. The rules of the game, however absurd, cannot be altered by playing that game. Among all forms of mentation, verbal thinking is the most articulate, the most complex, and the most vulnerable to infectious diseases. It is liable to

absorb whispered suggestions, and to incorporate them as hidden persuaders into the code. Language can become a screen which stands between the thinker and reality. This is the reason why true creativity often starts where language ends. (Koestler 1964, p. 177)

In contrast to the conditioned automaton who results from long experience of boring, routinised and monotonous environments, a person who has ample experience of dynamic environments will tend to have a high degree of adaptability to changing circumstances (Koestler 1964, p. 119). For such a personality,

When all hopeful attempts at solving the problem by traditional methods have been exhausted, thought runs around in circles in the blocked matrix like rats in a cage. Next, the matrix or organized, purposeful behaviour itself seems to go to pieces, and random trials make their appearance, accompanied by tantrums and attacks of despair – or by the distracted absent-mindedness of the creative obsession. That absent-mindedness is, of course, in fact single-mindedness; for at this stage – the period of ‘incubation’ – the whole personality, down to the un verbalized and unconscious layers, has become saturated with the problem, so that on some level of the mind it remains active, even while attention is occupied in a quite different field... until either chance or intuition provides a link to a quite different matrix, which bears down vertically, so to speak, on the problem blocked in its old horizontal context, and the two previously separate matrices fuse. (Koestler 1964, p. 119)

In addition to the importance of a strong sense of purposefulness (the situation must be problematic for the individual, and the task of resolving it in some sense a ‘creative obsession’), Koestler (1964, p. 120) notes another condition of the creative act, which he terms ‘ripeness’. In whatever domain of activity, the creative act ‘does not create something out of nothing; it uncovers, selects, re-shuffles, combines, synthesizes *already existing facts, ideas, faculties, skills*’ (Koestler 1964, p. 120, emphasis added).

Thus at one end of the scale we have discoveries which seem to be due to more or less conscious, logical reasoning, and at the other end sudden insights which seem to emerge spontaneously from the depth of the unconscious. The same polarity of logic and intuition will be found to prevail in the methods and techniques of artistic creation. (Koestler 1964, p. 120)

The re-structuring of matrices effected by bisociation involves at least two significant side-effects, in addition to whatever is created. Firstly, the creation of a new and more complex matrix also means the destruction of old and familiar frames of reference, as matrices are re-constructed (Koestler 1964, p. 659). On the other hand, as a blocked situation is accompanied by increases in the level of frustration, so too is the genuinely creative experience ‘always accompanied by the sudden expansion and subsequent catharsis of the self-transcending emotions... [or] the “earthing” of emotion’ (Koestler 1964, p. 328).

What Koestler terms ‘associative skills’, then, even those of a complex kind, do not display the originality, super-flexibility, guidance by unconscious processes, or destructive-constructive dynamic characteristic of bisociation (1964, pp. 659-660). The biological equivalents of associative skills ‘are the activities of the organism while in a state of dynamic equilibrium with the environment – as distinct from the more spectacular manifestations of its regenerative potentials’ (Koestler 1964, p. 659). The ‘associative’ personality reasons according to habit and well-established rules, is adaptive rather than destructive (i.e. reluctant to abandon matrices found to be no longer viable or to be incompatible with other matrices, or resistant to finding them to be so), is conservative, repetitive, and ‘willing to learn under proper guidance, but unable to be guided by his dreams’ (Koestler 1964, p. 659).

3.4.9 Belton’s theory of art

Professor of Art, Robert Belton (2002, p. 8), argues that art is an important avenue of intellectual communication. However, he observes that the ‘average person’ is

somewhat alienated from art, particularly as art over the past 150 years has increasingly moved away from the ‘familiarity and comfort of resemblance’ (Belton 2002, p. 8). Belton argues that this resistance to art is based on several faulty assumptions. One such assumption is that what makes art ‘art’ is ‘how accurately it resembles something’, and a second, related assumption is that what makes art ‘art’ is ‘not the design but the technique’, so that the means is glorified over the end, over art’s many and varied purposes (Belton 2002, pp. 9-10).

Belton (2002, pp. 10-11) observes that in current writing about art, we can see a spectrum of positions on the interpretation of art, from those that give greater status to attempts at understanding the artist and his or her intended meanings, through those that emphasise ‘constraints provided by the work itself’, to those that privilege the interpretations of the observer. It is most noteworthy that this spectrum of attitudes about the interpretation of the meaning of a work of art parallels those found in other fields of inquiry concerned with human knowing and learning. Crotty, for example, observes that,

These viewpoints – seeing interpretation as essentially an identification of authorial intent, or looking instead to an intention intrinsic to the text as such, or making the reader pivotal in the generation of meaning – are embodied, with their many variants, in the history of both literary criticism and reading comprehension theory. (Crotty 1998, p. 107)

Belton (2002, p. 10) points out that it is ultimately observers who judge art and ‘what art is for’, but argues that this does not mean that one interpretation of art is just as good as another. In seeking to clarify the situation, Belton (2002, p. 10) suggests that there are only three categories of statements we can make about a work of art, namely, Context, Form and Content. The possibilities for interaction between the elements of these categories, however, are virtually infinite.

Belton suggests that the primary Context of a work of art is constituted by information about the artist, including but not limited to the artist’s attitudes,

beliefs, preferences, lifestyle and social standing. Belton (2002, pp. 10-11) emphasises that, while

some might argue that details about the artist's social world are more significant, society in general did not produce the actual work, however much it may have influenced or affected its creation. Since there would be no work without its maker, primary Context describes the circumstances of the work's production at the level of the individual artist.

Secondary Context is constituted by the equivalent details characterising those who observe a work of art. 'Every observer', explains Belton (2002, p. 11), 'brings to a work his or her own secondary Context, and in this way the art is a reflection of ourselves.'

In contrast to Context, which by definition is not part of the work, Belton (2002, p. 11) suggests that Form is constituted by the work itself, along with its constituent elements, quite independent of Content, that is, of any meaning Form may help to create. Treated in isolation, the elements of Form – which, in the case of painting, include such things as colour, light, medium, shape, size, technique and texture – constitute primary Form. We make a shift to secondary Form when we consider how 'elements relate to each other, as in balance, composition, contrast, distance, perspective, space, and so on' (Belton 2002, p. 11).

The Content of a work of art consists both of meanings intended by the artist and those constructed by the observer. Belton (2002, p. 11) uses the terms 'meanings' and 'significances' to distinguish between intended and constructed meanings, respectively, in a way parallel to Hirsch's (1967, pp. 142-143) use of those terms to draw a distinction between hermeneutics and literary criticism, respectively.

The primary Content of a work of art is constituted by 'attributes, events, facts, objects, people, places and things, all representing what they appear to represent' (Belton 2002, p. 11). We shift to a secondary level of Content when we see that one thing symbolises something else. When a literal element suggests or is likened to

another element, whether present in the picture or implied, a different level of meaning is created. Some of the mechanisms used to produce this shift from primary to secondary Content are widely understood by members of the culture in which the work of art is produced. Other mechanisms may be invented by the artist. These mechanisms rely for their effectiveness on secondary or primary Contextual codes. Consequently, Belton points out (2002, p. 12), ‘Observers may recognise these [Contextual codes] spontaneously, or they may have to work at understanding them by filling in the gaps in their knowledge of the artist’.

It is not just Context that pushes Content from primary to secondary. Form also influences the meaning of a work of art, using a method of category-shifting Belton (2002, p. 12) refers to as ‘paralinguistic’, even though the term strictly applies to the use of spoken language. Belton (2002, p. 12) explains that, ‘The term refers to the way changes in individual delivery (or performance) of a statement lead to changes in our understanding of what is meant’. For example, most English speaking people within Western culture immediately recognise the difference between the sound and significance of the word ‘help’ spoken neutrally and ‘Help!’ shouted desperately. In the context of visual art, then, if one changes the Form of a literal image, that is, the *way* it is represented, the image can be made to suggest a different meaning, or another level of meaning or significance.

Like Contextual codes, some of these paralinguistic shifts can be produced by nuances of Form that are conventional, causing a shift from primary to secondary Content that is mediated by secondary Context. However, artists also *invent* nuances of Form in order to initiate a paralinguistic process of category-shifting from primary to secondary Content. As an example, Belton (2002, p. 12) points out how the departure from conventional ways of depicting the night sky in van Gogh’s *The Starry Night* (Figure 4) evokes ‘a deeply emotional response, and the scene almost cries out in mystical ecstasy’.



Figure 4: van Gogh's 'The Starry Night' uses invented nuances of Form to initiate a category shift and evoke an emotional response in the observer. (Image source: WebMuseum 2002)

Thus, for Belton (2002, p. 13), art is the deliberate and purposeful selection and combination of Form, Context and primary Content to create secondary Content, that is, to express meaning or evoke a particular response in the observer, *beyond attempting to render an accurate representation of objective 'reality'*.

3.4.10 Goleman's Emotional Intelligence

One of psychology's 'open secrets', according to Goleman (1996, p. 34), is the very limited extent to which the kind of knowledge reflected in academic grades and credentials, and the kind of abilities measured by traditional tests of intelligence (such as IQ and scholastic aptitude tests), predict success in life. There are, he observes, 'widespread exceptions to the rule that IQ predicts success – many (and more) exceptions than cases that fit the rule. At best IQ contributes about 20 percent to the factors that determine life success...' (Goleman 1996, p. 34).

Goleman argues (1996, p. 28) that how ‘well’ we do in life depends on the dynamic interaction of rational intelligence and what he calls ‘emotional intelligence’, suggesting that ‘intellect cannot work at its best without emotional intelligence’.

Ordinarily the complementarity of limbic system and neocortex, amygdala and prefrontal lobes, means each is a full partner in mental life. When these partners interact well, emotional intelligence rises – as does intellectual ability. (Goleman 1996, p. 28)

To this dynamic interaction of thought and emotion, Goleman adds action, observing that, ‘All emotions are, in essence, impulses to act...’ (1996, p. 6). He draws on Dewey’s insights to emphasise that ‘the body of skills that emotional intelligence represents’, which he equates with the notion of ‘character’, is most effectively learned in ‘the mode of emotional literacy’, that is, ‘in the course of real events’, rather than just as isolated skills considered abstractly (Goleman 1996, p. 285).

Goleman presents evidence from neurological research that suggests that,

...feelings are typically *indispensable* for rational decisions; they point us in the proper direction, where dry logic can then be of best use. While the world often confronts us with an unwieldy array of choices (How should you invest your retirement savings? Whom should you marry?), the emotional learning that life has given us (such as the memory of a disastrous investment or a painful breakup) sends signals that streamline the decision by eliminating some options and highlighting others at the outset. In this way... the emotional brain is as involved in reasoning as is the thinking brain. (Goleman 1996, p. 28)

While acknowledging that learning, and thus, changes in brain ‘wiring’, occur throughout life (1996, p. 227), Goleman states that it is the ‘habits of emotional management that are repeated over and over again during childhood and the teenage years’ that most powerfully influence the circuitry in brain areas critical for emotional life (1996, p. 226).

The massive sculpting and pruning of neural circuits in childhood may be an underlying reason why early emotional hardships and trauma have such enduring and pervasive effects in adulthood. It may explain, too, why psychotherapy can often take so long to affect some of these patterns – and why... even after therapy those patterns tend to remain as underlying propensities, though with an overlay of new insights and relearned responses. (Goleman 1996, p. 227)

Because the basic synaptic wiring of neural architecture is harder to change in adulthood, childhood becomes ‘a crucial window of opportunity for shaping lifelong emotional propensities’ (Goleman 1996, p. 226).

Goleman observes that this understanding of an essential complementarity between thought, emotion and action is inconsistent with the old notion of an opposition between reason and emotion. ‘The old paradigm held an ideal of reason freed of the pull of emotion. The new paradigm urges us to harmonize head and heart’ (Goleman 1996, pp. 28-29).

3.4.11 Sternberg’s Triarchic Theory of Human Intelligence

Sternberg (1985, 1988) argues that intelligence is best thought of as a kind of self-management capacity that we use in all sorts of contexts in order to organise and make meaningful the things that take place within and around us every day. He suggests (1988, p. 69) that a comprehensive theory of human intelligence, such as his ‘triarchic theory’, should take account of our internal world, the world external to us, and the dynamic interrelationship between the two.

Sternberg observes, however, that most theories of intelligence have been limited to either the internal or the external worlds.

One implication of the triarchic theory is that many existing theories of intelligence are incomplete rather than incorrect. ...[M]any of them say essentially the same thing in different language. Competitive theorists seem to have devoted too much attention to highlighting the differences among

their theories, which often are not great, and not enough attention to highlighting the ways in which their theories are similar or identical. (Sternberg 1988, p. 69)

As one example of an incomplete perspective, Sternberg (1988, p. xi) notes that intelligence has come to be widely associated with academic achievement, largely as a result of the work of Alfred Binet. At the turn of the last century, Binet developed the first significant intelligence test, after being commissioned by the city government of Paris to devise a test that would predict who had the potential to do well in school and who did not. 'My claim', states Sternberg (1988, p. xi), 'is not that intelligence is unrelated to schoolwork but rather that it is related to a great deal more.'

As a second example of a limited and problematic theory of intelligence, Sternberg (1988, pp. 41-42, 73) offers a brief critique of Gardner's (1983) theory of multiple intelligences. Sternberg (1988, p. 41) notes that Gardner's 'intelligences' (including at least linguistic, logical-mathematical, musical, spatial, bodily-kinesthetic, interpersonal, and intrapersonal) were derived from various sources, including consideration of brain damaged and exceptional individuals (both low and high functioning), and evolutionary history, but not through factor analysis. However, Sternberg (1988, pp. 41, 73) argues,

If factorial evidence has shown us anything unequivocally, it is that various abilities are not independent, as Gardner claims, but interrelated. For example, logical-mathematical and spatial abilities are remarkably difficult to test for separately because they tend to occur together. People who are good problem solvers in the areas of logic and mathematics tend, on the average, to be good spatial problem solvers as well. ...Gardner is correct in noting that there are multiple aspects of intelligent mental self-management. The notion that these different aspects are independent, however, is simply wrong. There is overwhelming statistical evidence against this view, and not citing it does not eliminate it. ...[M]ental self-management would break

down if there were truly independent intelligences. ...Gardner's point of view just doesn't seem to be right, either statistically or psychologically.

Sternberg (1988, pp. 41-42) notes, further, that the naming of 'intelligences' in Gardner's theory does not make it clear what *processes* underlie the intelligences, or exactly what each intelligence consists of, or does not consist of. Noting that none of the conventional theories would consider musical ability an intelligence, Sternberg (1988, pp. 41-42) argues that the multiple intelligences might be more appropriately referred to as 'multiple talents':

Clearly, the difference between intelligence and talent is qualitative. Intelligence is general: without it we cannot function independently. Talents, however, are specialized. Although we may be excluded from participation in some activity because we lack a talent for it, there are nevertheless many other things we can do, and do well. An ability is a component of intelligence when we cannot get along without it and a talent when we are not noticeably handicapped by its absence.

Gardner's theory, then, may constitute an interesting theory of talents, but Sternberg (1988, p. 42) argues that its shortcomings and limitations disqualify it as a theory of intelligence.

Sternberg proposes a more comprehensive and viable 'triarchic' theory of human intelligence, which incorporates analytical, creative and practical abilities and is supported by extensive empirical research (Sternberg 1985, 1988; Sternberg & Grigorenko 2000). The theory comprises three sub-theories – a componential, an experiential, and a contextual sub-theory (see Figure 5). The componential sub-theory specifies the internal, cognitive or mental processes associated with thinking, 'the structures and mechanisms that underlie intelligent behavior' (Sternberg 1985, p. xii).

[T]hese processes are of three kinds: metacomponents are the executive processes used to plan, monitor, and evaluate problem solving. Performance components are the lower-order processes used to implement the commands

of the metacomponents. And the knowledge-acquisition components are the processes used to learn how to solve the problems in the first place.
(Sternberg 1988, p. 59)

Sternberg (1988, p. 59) emphasises that the components within these three categories are highly interdependent.

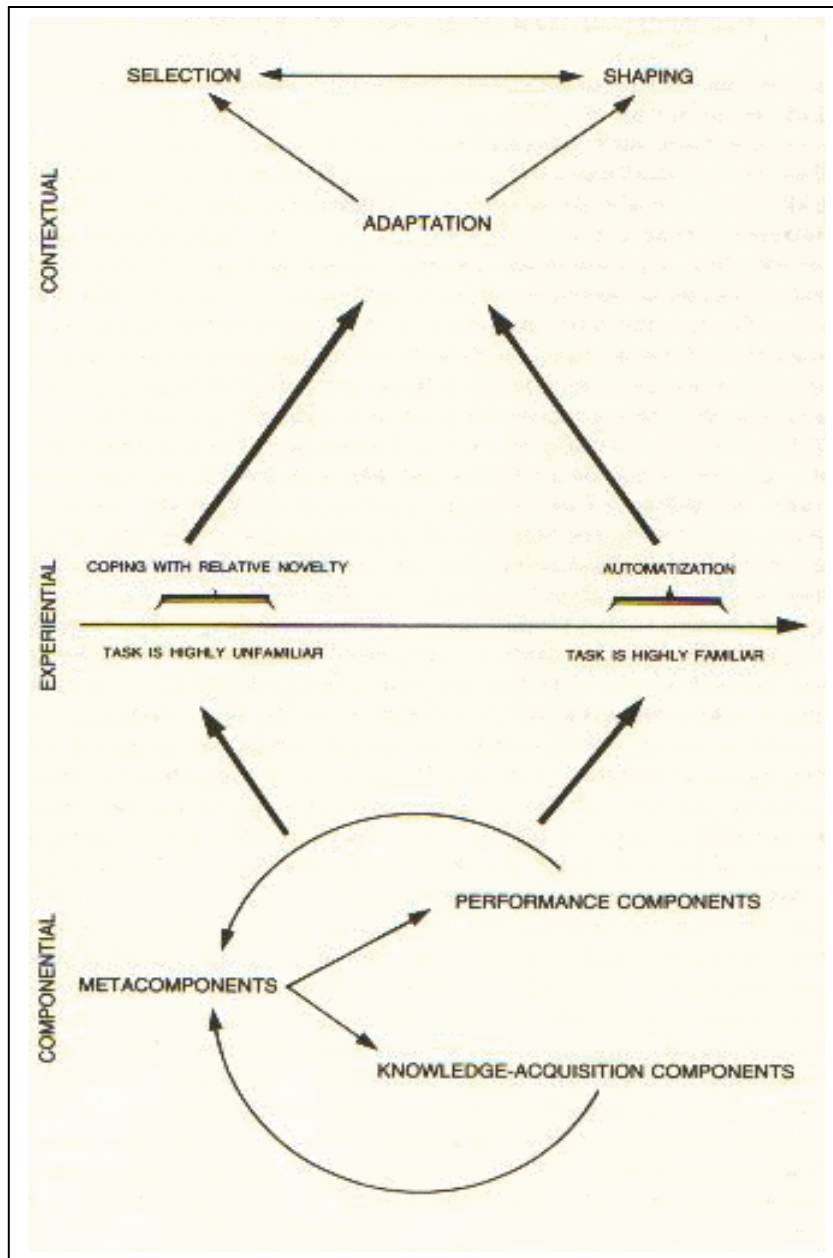


Figure 5: Relationships among the various elements of the triarchic theory of human intelligence
(Sternberg 1988, p. 68)

In order to illustrate how these components would be involved in a practical kind of problem solving, Sternberg (1988, pp. 59-60) offers the example of deciding whether to buy a house:

From the outset you must decide what criteria are important in making this purchase (metacomponents). This in turn requires you to learn what kinds of things you should look for (knowledge-acquisition components). Finally, you actually have to perform “tests” on the new house to see whether it meets your specifications (performance components).

Again, Sternberg (1988, p. 60) emphasises how dynamically interactive these steps are:

As you examine the house, you may come up with new criteria for making a decision, or discard old ones. As you learn more and more about houses, similarly, you may add to or delete from your developing list. Good problem solving always requires interaction among metacomponents, performance components, and knowledge-acquisition components.

The experiential sub-theory focuses on the varying levels of experience an individual has with the tasks and situations to which the internal processes of the componential sub-theory are applied. Sternberg (1988, p. 60) argues that two aspects of an individual’s experience with tasks and situations are particularly relevant to understanding intelligence: performing a relatively unfamiliar task or in an unfamiliar situation, and making that performance automatic.

If complex tasks can be executed only because many of the mental operations involved in their performance have been automatized, failure to automatize these operations, fully or in part, results in a breakdown of information processing and therefore in less intelligent task performance. (Sternberg 1988, p. 62)

Thus, more intelligent behaviour is characterised by better automatising of information processing. Intelligence is best demonstrated if the task is relatively unfamiliar (but not so outside the individual’s experience as to be out of his or her

range of comprehension), or when an individual is in the process of automatizing performance on a given task or in a given situation (Sternberg 1985, p. xii):

These two facets interact to some extent: Efficacious automatization of processing allows allocation of additional resources to the processing of novelty in the environment; conversely, efficacious adaptation to novelty allows automatization to occur earlier in one's experience with new tasks and situations. Thus, one cannot simply classify a task as either requiring intelligence or not requiring intelligence. The extent to which it requires intelligence depends upon the point in an individual's experiential continuum at which the task is encountered. The same holds true for situations.

While Sternberg emphasises capacity for automatisisation as an important criterion of intelligence, he also notes that *the ability to become aware of, and to revise or transcend conditioned or habitual patterns of thought or behaviour is also a vital criterion of intelligent functioning*. He warns that 'knowledge' can lead to 'tunnel vision, narrow thinking, and entrenchment' (Sternberg & Grigorenko 2000, p. 65). By way of illustration, Sternberg relates how at one point in his career he was 'stuck on threes', how every theory he proposed seemed to have three parts. But, as he wryly observes, 'Of course, there were three good reasons for this!' (Sternberg & Grigorenko 2000, p. 65)

The contextual sub-theory focuses on the *purposive*, practical nature of an individual's behaviour in a sociocultural context (Sternberg 1988, p. 65).

Contextually intelligent behaviour in everyday life is specified to involve:

(a) adaptation to a present environment, (b) selection of a more nearly optimal environment than the one the individual presently inhabits [when the environment does not fit one's values, aptitudes or interests], or (c) shaping of the present environment so as to render it a better fit to one's skills, interests, or values. (Sternberg 1985, p. xi)

Thus, in Sternberg's view,

Intelligence is the mental capability of emitting contextually appropriate behavior at those regions in the experiential continuum that involve response to novelty or automatization of information processing as a function of metacomponents, performance components, and knowledge-acquisition components. (Sternberg 1985, p. 128)

Two important points do receive repeated emphasis in Sternberg's description of his triarchic theory of intelligence. The first is that, while the theory's 'parts' can be identified for explication, they work together in a dynamically integrated way (e.g. Sternberg 1988, pp. 59, 60, 66). A second point given emphasis (e.g. Sternberg 1985, p. xiii; 1988, p. 65) is that,

Whereas the components of intelligent mental self-management are very likely to be universal, and the need to use these components in novel settings and to automatize them may also be universal, the goals to which they are applied are likely to vary not only across various groups but among individuals as well. (1988, p. 65, emphasis added)

3.4.12 Powers' Perceptual Control Theory

Powers' (1973, 1979, 1989, 1990, 1998) Perceptual Control Theory (PCT) offers a working and testable model of the behaviour of human and other living systems that views behaviour as the control of perception, rather than response to a stimulus. This model of a closed-loop feedback control system, represented schematically in Figure 6, accounts for *purposeful* human behaviour. According to PCT, human beings function or behave in order to maintain certain reference levels for a wide variety of variables crucial or felt to be crucial to the individual's well-being. Ultimately, people do not control or choose their behaviour. Rather, they behave any way they must so that their perception, or experience, matches what they physiologically or psychologically believe they should, or would like to, perceive – they control their perception.

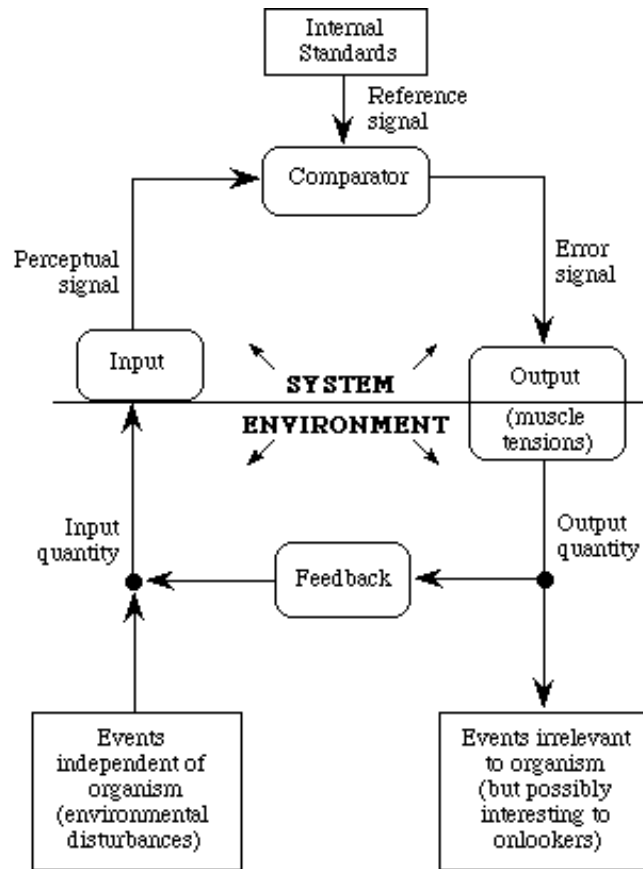


Figure 6: Schematic diagram of a PCT control loop (McClelland 1994, after Powers 1979)

Beyond the basic PCT thesis, Powers (1973) provides a more detailed proposal for explaining the organisation of the human system, which includes a hierarchy of perceptions and a hierarchy of control. He refers to this elaborated theory as the Hierarchical Perceptual Control Theory (HPCT) (see Figure 7).

HPCT specifies a hierarchy of perceptions, beginning at the bottom with simple “intensity” signals and running through a number of hierarchically organized levels (currently 11). Each succeeding level builds new perceptual signals by combining in various ways the perceptual signals from the level immediately below (except for the first, which derives its signals from sensory mechanisms). (Abbott n.d.)

The signals from the first or lowest level in the hierarchy are termed ‘intensity’ signals, since they only convey quantitative rather than qualitative impressions. These signals combine at the next level to produce sensations. Throughout the

hierarchy, perceptual signals at one level combine to produce perceptions at the next higher level (Abbott n.d.).

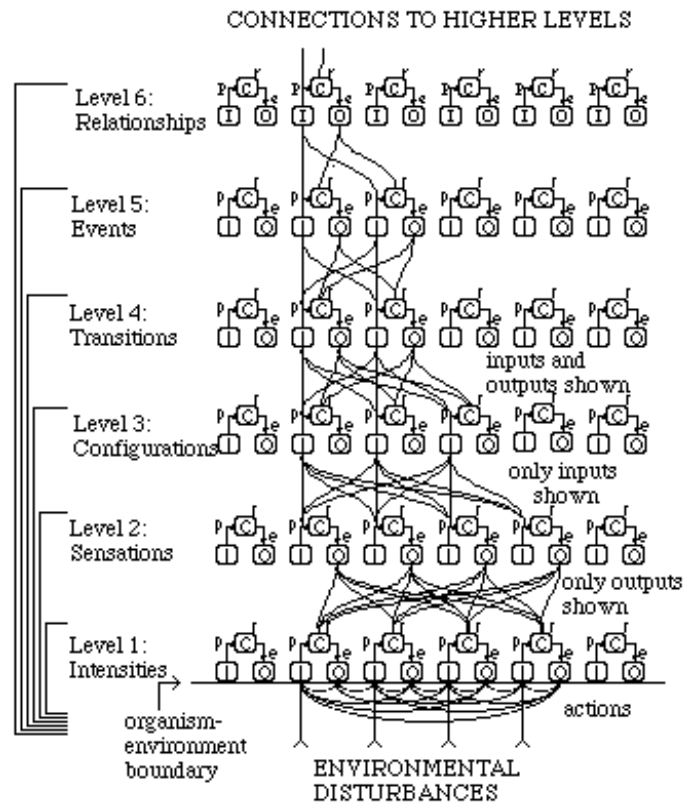


Figure 7: A hierarchy of control systems (McLelland 1994, after Powers 1989)

In *Behaviour: The Control of Perception*, Powers (1973) proposed nine levels in the perceptual hierarchy, consistent with available physiological evidence and experience, as follows (Abbott n.d.):

1. Intensity
2. Sensation or vector
3. Configuration
4. Transitions
5. Sequence
6. Relationship
7. Program
8. Principles

9. System concepts

Since first formulating the list, Powers has added two more levels, ‘events’ and ‘categories’, and re-ordered the list slightly. He views the list as provisional, pending new evidence, but as Abbott (n.d., emphasis added) points out, ‘the particular set of levels offered is less important than the principle of hierarchical organization, which holds that *higher-level perceptions are constructed from lower-level ones*’. This principle identifies the significance of rich experience in the construction and reconstruction of higher level perceptions or meanings.

Powers argues that there is a perceptual control hierarchy that parallels the perceptual hierarchy. Each level receives its reference value from the outputs of the control systems at the next higher level, constituting a top-down model of control, *functioning as a hierarchy of goals* as well as perception (Cziko 1995, p. 231).

Perceptual signals at levels above the bottom one are controlled by manipulating the reference signals of control systems at the next lower level. Those lower-level control systems then act to bring their controlled perceptions into line with the new reference values. These changes in turn alter the values of the next-level-up perceptions that are synthesised from the lower-level perceptions. In this way *the higher-level systems use the next-lower-level ones as the means whereby the higher-level systems control their own perceptions.* (Abbott n.d., emphasis added.)

This suggests the necessity of changes in perceptions or meanings at higher levels, before the system (person) will function significantly differently at lower levels. Lower level behaviour is ‘purposeful’ in relation to those higher level perceptions or meanings that the person ‘controls for’, however consciously or otherwise, because the higher level perceptions or meanings are felt to be crucial to the individual’s well-being.

When a change in the reference values at a particular level of the hierarchy is ordered by the next-higher-level control system, or an existing control system is ineffective in controlling valued perceptions, error signals will be perceived, and

disturbances to other control systems may occur, causing error messages that these systems will act to correct. The changed reference values and associated disturbances may also have flow on effects with other control systems on the same level and/or with control systems at lower levels. If error signals resulting from thinking and/or acting persist, learning may occur in the form of a reorganisation of the system. This is hypothesised to involve ‘an evolutionary process dependent on cumulative blind variation and selection’ (Cziko 1995, 120).

Reorganisation is a process akin to rewiring or microprogramming a computer so that those operations it can perform are changed.

Reorganisation alters behavior, but does not produce *specific behaviors*. It changes the parameters of behaviour, not the content. Reorganisation of a perceptual function results in a perceptual signal altering its *meaning*, owing to a change in the way it is derived from lower-order signals.

Reorganisation of an output function results in a different choice of means, a new distribution of lower-order reference signals as a result of a given error signal. Reorganisation is an operation *on* a system, not *by* a system.

(Powers 1973, p. 179)

Powers suggests that the error messages that prompt reorganisation of the control hierarchy may be perceived as the feeling component of emotion, and positive varieties of emotion may be related to the system gain associated with reorganisation (McClelland 1994).

PCT makes clear that efforts to control the behaviour (including the learning) of another person through force or coercion are ultimately counter-productive, because people act to oppose and cancel the effects of things in the world that might disturb the perceptions they are controlling for, and make them change. In PCT this phenomenon of opposition is referred to as ‘counter-control’ (Bourbon 1997). *People remain self-controlling organisms*. They will only change their assumptions, understandings or constructs (desired perceptions) when, on the basis of their critical thinking and/or interaction with the constraints of their material and

social worlds, they become personally convinced that a construct, perception or meaning is no longer experientially or logically viable or adequate.

3.4.14 Brain research

The Association for Supervision and Curriculum Development (ASCD 1999) has identified some key insights from brain research, which suggest that it is helpful to think of four levels of knowledge.

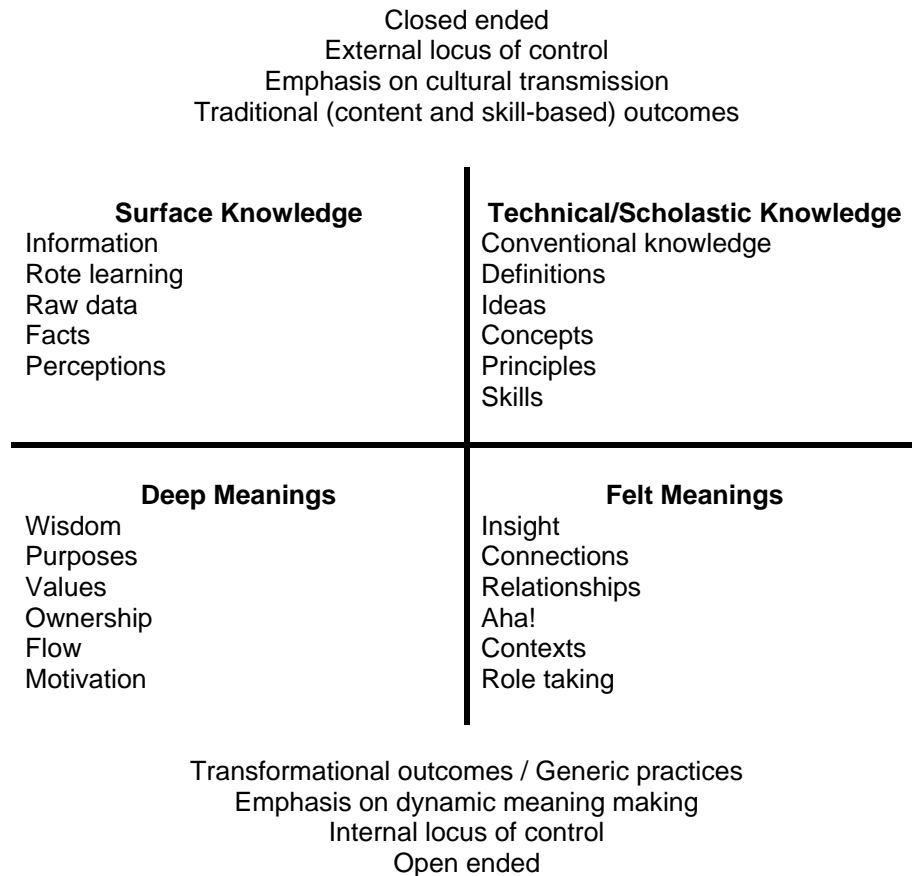


Figure 8: Schematic representation of four levels of knowledge (adapted from ASCD 1999)

The four levels are:

- *Surface Knowledge*: the product of rote learning
- *Technical or Scholastic Knowledge*: ideas, principles and procedures that are traditionally regarded as the core content of any subject or discipline, but which

‘lacks a quality that makes it available for solving real problems or for dealing with complex situations’

- *Felt Meaning*: ‘an almost visceral sense of relationship, an unarticulated sense of connectedness that ultimately culminates in insight’, an ‘aha!’
- *Deep Meanings*: ‘the fundamental purposes and values that make life itself worthwhile’ and ‘ultimately, the forces that drive the selection and interpretation of life experience’. (ASCD 1999, f. 5, a. 1, pp. 10-13)

The third and fourth levels have not traditionally been supported by schooling practices. Figure 8 represents the four levels of knowledge schematically, with my added characterisations of the first two levels as a pair, and of the two ‘dynamical’ forms of knowledge, or meaning, as a pair.

The implication drawn from these insights is that, since all human beings’ perception, thinking and construction of understandings are organised around what they regard as important, ‘Those who want to influence the learning of others should try to create as much correspondence as possible between institutional goals and learners’ goals’ (ASCD 1999, f.7, a.1, p. 8).

3.5 TOWARDS A VIABLE THEORY OF LEARNING AND CHANGE

Taken together, the above perspectives on human intelligence, learning and knowing suggest a more experientially and logically viable theory of learning, agency and change for the enterprise of education, than the assumptions reflected in the prevailing culture of institutionalised education and in some current reform efforts. This synthesised theory suggests a different and compelling set of constructs that constitutes what I will call the ‘Dynamic Paradigm of Learning and Change’. This Paradigm provides a deep and coherent framework for understanding desirable ends and means of education and of change – a framework capable of informing both design and critique of systemic curriculum and assessment policies, school organisation and planning models, professional learning and pedagogical practice, and student learning and action. The Dynamic Paradigm of Learning and Change is characterised by the following constructs.

CONSTRUCT 1

Reality is not discovered, but constructed

There can be no objective knowledge that is a direct representation corresponding with an ontological reality. Nor is language an objective entity shared by all members of a society, since the connection between sound images and meanings is actively formed by each individual language user. Meaning is not passively received, either through the senses or by way of communication, but is actively built and rebuilt by the cognising individual.

CONSTRUCT 2

Human life transcends the appearance of duality

Lived existence has a dialectical quality that transcends and synthesises 'logical' and 'existential' dualities, such as individual and environment, autonomy and determinism, part and whole. Experience, here and now, also has a rich density that abstract concepts are not able to capture. Human thought, feeling, motivation and behaviour constitute a dynamic, experiential matrix of action schemes, in which no real separation of those four elements is possible.

CONSTRUCT 3

Human life is purposeful

Human learning and knowing are essentially teleological, that is, they are *purposeful*. Stimulus and response are mediated by an internal reference standard – an aim/purpose/desired perception, which the individual controls for (acts to achieve or maintain). The significance or purpose underlying objects, concepts, ideas, speech or events *for the individual* constitutes their meaning. Meaning cannot be separated from actions and contexts. Interpretation of objects, concepts, ideas, speech, events, actions and contexts depends on the individual's purposes or perception of a problem.

CONSTRUCT 4

Human consciousness is evolutionary

The function of cognition is adaptive, serving the individual's *organisation of the experiential world*, not the discovery of an objective ontological reality. This does *not* mean we can construct any 'reality' we wish. Meanings are evaluated in terms of fit or viability in the material or social world and consistency with the individual's hierarchical system of meanings or action schemes, as a whole. The perception of constraints, whether external (experiential evidence of non-viability) or internal (logical inconsistency), limits our thinking and acting. The consequent conflict will generally cause us to initially question the authenticity of the constraints and possibly to ignore, resist or illegitimise them. If (1) we become satisfied that new logical or experiential evidence is authentic, (2) we understand *why* such constraints represent a contradiction of some aspect of our existing understanding, and (3) *it is important to us* to resolve the particular contradiction or reduce inconsistencies in order to achieve greater adaptive value, then the conflict may lead to learning, that is, to revision of action schemes or internal reference standards (the experiential goals which drive our behaviour). Recognition of non-viable action schemes, through what we sometimes call 'mistakes', is to be greatly *valued*. Mistakes have an evolutionary function, since they provide evidence that a particular action scheme is non-viable.

CONSTRUCT 5

Human individuals are autonomous agents

While human learning and knowing are *not* essentially subjective, arbitrary or relative, they *are* essentially individual. The individual is the ultimate agent in meaning making, the ultimate epistemological authority. While the individual's perception of authentic external constraints ('natural' or justifiable demands, limits or consequences) may lead to revised constructs, definitions and/or reference standards, the perception of external demands or limits imposed by *arbitrary* authority will lead to counter-control to oppose or cancel that influence. Constant or frequent counter-control efforts divert the individual's attention from monitoring

internal signals, impulses and intuitions, as well as authentic external limits, and thus inhibit decision-making, spontaneous action and creative learning.

CONSTRUCT 6

Human beings need to be familiar with the world around them

Some knowledge of major ways in which others in our culture organise experience (interpret the world) is important. Such 'surface' or 'conventional' knowledge (1) helps us perceive in particular ways, (2) ensures we have sufficient conceptual/linguistic compatibility with others to make participation in the practices typical of various cultural contexts viable, and (3) provides the raw material for reconstruction of meanings and creative action (reinterpretation and changing of the world).

CONSTRUCT 7

Human beings are vulnerable to conditioning

The thought, feeling and behaviour of human beings can be *conditioned* by abstract concepts and 'bodies of knowledge' which we, as individuals, have not authenticated. Language can become a screen which stands between us and authentic experience, which alienates us from objects, nature, other people and ourselves. Alien, endowed meanings may become reified and entrenched, and powerfully influence what individuals consciously or unconsciously choose and choose not to perceive, and what perceptions they control for (i.e. what experiential goals drive their behaviour). Such conditioning leads to the alienated character structure typical in contemporary society and described in Chapter 4.

CONSTRUCT 8

Particular forms of experience alienate human beings from our selves and the world

A human being's functioning is most likely to degenerate into rigid, stereotyped patterns of thinking and largely unconsciously controlled, mechanical patterns of behaviour, when their daily experience *predominantly* takes a particular *form*,

specifically, (1) when similar tasks are repeatedly encountered under relatively unchanging conditions, (2) when thought and ‘knowledge acquisition’ are abstract, superficial and divorced from purposeful action in authentic contexts, and (3) when aims and tasks are imposed by an external authority. When such stereotypical functioning is externally rewarded or reinforced, conditioning will be more profound. Moreover, when spontaneous, creative activity, including making ‘mistakes’, is likely to reduce external rewards, to meet with disapproval, or to result in tangible penalty, our orientation to the world becomes one of fear, inhibition and defensiveness. Our disposition to engage dynamically with life, and our inclination and capacity to learn through discovering and revising non-viable thought or action, are impaired or destroyed.

CONSTRUCT 9

Authentic human beings can help others to become authentic

Human beings must ‘re-enter into’ culturally endowed definitions, discourse and practices, and ‘authoritative knowledge’, including the statements, actions, purposes and motivations of others. They must examine them and either authenticate, reconstruct or challenge them through purposeful, creative, practical-critical activity in authentic social and material contexts. Alienated personalities, and certainly most young people, cannot achieve this alone. They need dialogue with, and the inspiration of, trusted people, who can problematise for them definitions, assumptions and real situations, and who can lead them to engage with appropriate logical, creative and experiential procedures for considering constraints, making connections and evaluating the viability of understandings. They need guidance and modeling in how to master and combine diverse generic practices in creative thought and action in diverse contexts. They need ‘educated’ educators, who are accomplished in creative, critical practice in diverse sociocultural contexts and in transcending reified definitions and given systems, and who are engaged in changing themselves. Thus, while the individual is the *ultimate* epistemological authority, they are not the *only* valuable reference point in creative and critical meaning making.

CONSTRUCT 10

Intelligence is adaptive action

Intelligent action can be thought of as consisting in a pattern of practical inquiry, which begins with an individual's or group's perception of a situation as problematic in relation to their aims or purposes, which may include concern for the welfare of other people and things. The nature of the problem is then formulated in coherent terms, conditions are observed, and ideas (meanings) relating to the problem and its solution are gathered, critically examined and possibly challenged. Habitual patterns of thought, feeling or behaviour are transcended as creative connections are sought and made, especially through intuitive and/or paralinguistic means, between previously unconnected matrices of thought or experience. Solutions suggested by such critical examination and creative category-shifting are subjected to evaluation and authentication through appropriate action, which may include many forms of explaining, communicating and/or applying the 'solution'. The value of intelligent action lies in the new, more adaptive meaning (action scheme) that the individual attaches to elements of the situation, when such evaluative action is judged by the individual to be operationally viable and consistent with the individual's aim (allowing that the individual's aim may also be voluntarily revised in the process).

CONSTRUCT 11

Life is change

Change is the existential nature of human life. A dynamic and creative life is a recurring pattern of formulating in coherent terms the nature of our experience in particular contexts with reference to our purposes, and of reviewing and revising meanings, before action is selected and taken. There are many personal and social benefits to be enjoyed by purposefully engaging in change, rather than resisting change, or merely seeking to cope with it.

CONSTRUCT 12

Particular forms of experience create a disposition to intelligent action

Authentic intelligence can be thought of as the capacity of the individual to make warranted action scheme change through dynamic interaction with particular material and social contexts, and reflection on internal consistency. We can think of it as the capacity to change ourselves as we change our world, that is, the capacity for *creative learning*. Educational quality and value consist in the dynamic conditions, the forms of experience and activity, which contribute to growth in authentic intelligence. Such conditions involve engagement with practices or genres that foster creative and critical thinking and expression, and the learning that enhances our ability to take action in relation to our interests and purposes.

The generic elements of an authentic school curriculum are also the generic elements of a dynamic life. They are meaning-making, -testing, -expressing and -applying procedures associated with various disciplines, such as science, philosophy, the arts, language and mathematics. They are ‘generic’ in the sense that they are independent of particular ‘bodies of knowledge’, until they are brought into purposeful use. Generic curriculum elements involve people in having purposeful experiences in the material and social world, and in that context using language and intuitive processes to:

- (1) build cognitive structures (words, concepts, theories, attitudes, meanings),
- (2) express, explain or communicate them,
- (3) apply them in actions,
- (4) test or critique the meaning, viability or value of such constructions, whether produced by ourselves or others, and
- (5) reconstruct or challenge them respectively, if found inadequate or unworkable.

CONSTRUCT 13

A human being’s identity can transcend definitions

With a clear awareness that the constructs, or meanings, with which we organise our experience and action are forever tentative and evolving, and with familiarity

with the ways we can purposefully generate, communicate, apply, authenticate and/or creatively reconstruct such meanings in various social and material contexts, comes a liberating realisation that our identity is not fused with particular definitions, texts and contexts, but transcends them. Along with that realisation comes also greater psychological agility to shift attention spontaneously from one frame of reference to a normally unrelated one in order to make creative connections, and a strong sense of agency and of authenticity – the conviction that, as individuals, we can express and transform ourselves through *conscious selection* of those thoughts, feelings and actions we find viable.

CONSTRUCT 14

Every human being is a conscious and autonomous process of becoming

With acceptance that another person's meanings for words, concepts or actions are, like our own, ultimately tentative, instrumental, personal constructs, comes a sense of an ethical imperative. It brings a greater sense of respect for the other person, their meanings and their agency, greater willingness to ask what they mean and what they want, and greater capacity for empathy and for authenticity in relationships. Such authenticity includes a willingness to express our own point of view, to disappoint, to make reasonable (hence authentic) demands, and to set justifiable limits.

CONSTRUCT 15

Human beings change our selves and our world

With the *experience* that we can coherently formulate the nature of confused, ambiguous, problematic situations and adapt to them, change them, or select different ones, comes an awareness that texts, contexts, systems and structures are not unalterable givens, but merely things that challenge us. We also come to a clear realisation that human beings are not merely objects of history, but creative and evolving agents, who can transform and humanise the world. We are then intelligence become conscious of itself.

In Chapter 2, I have described how the Dynamic Paradigm has informed some specific responses to a variety of intellectual, policy and practical challenges associated with school reform. In Chapter 5, I argue that the Dynamic Paradigm suggests some specific and significant inadequacies in the conceptualisation and implementation of some influential educational reform programs. First, though, in Chapter 4 I argue that prevailing identities, assumptions and practices within the cultures of schooling and broader society do not currently reflect the Dynamic Paradigm of Learning and Change.

Chapter 4

THE CULTURE OF SCHOOLING AND THE SCHOOLING OF CULTURE: A REVIEW OF LITERATURE

4.1 THE PSYCHO-SOCIAL CONTEXT OF SCHOOLING

In order to have any clear appreciation of a need for significant educational change, we must have an awareness of its current inadequacies and problematic outcomes. But more deeply, as Gore (1998, pp. 248-249) argues, in seeking to avoid the widely documented negative effects of schooling through education reform, ‘we must know what we are and what we are doing (in education), in order to begin to address adequately how we might do things differently’. We must have a deep understanding of the nature of the current culture of schooling. We must understand ‘the grammar that lies beneath’ (Hill 1988, p. 249) the text that is schooling, understand some of its characteristic assumptions, identities and orientations to the world, and some of the significant connections between the culture of schooling and the broader culture.

Fromm (1949, 1956, 1974, 1976; Das 1993) offers some penetrating insights into “what we are and what we are doing”, as human beings in general, on the basis of his analysis of philosophy, history and evolutionary biology, further supported by anthropological and psychoanalytic evidence. In his ‘dialectical humanism’, Fromm maintains that the development of human beings and of human societies takes place through attempts to find solutions beyond the duality, ambiguity and conflict of opposites. Consistent with Constructs 2 and 15 of the Dynamic Paradigm of Learning and Change, he observes a distinction between existential dichotomies inherent in the human situation, and historical dichotomies made by human action, and, therefore, able to be unmade (Das 1993, p. 54). An example of the former is the dichotomy between autonomous individuality on the one hand, and the influence from social and cultural forces and our dependence on solidarity with others on the other. An example of the latter is the persistence of widespread

hunger and malnutrition, despite our having the technical means to feed the world's population.

Fromm (1976) argues that two modes of existence are struggling for the spirit of humankind: the *having* mode, an alienated mode which concentrates on material possession, acquisitiveness, consumption, image, busyness, power and aggression; and, consistent with the Dynamic Paradigm of Learning and Change, the *being* mode, an unalienated, authentic mode, which is based on love, identity, autonomy and critical reason, on the pleasure of sharing, on the satisfaction of contributing, and on purposeful and productive, rather than wasteful activity.

Persons operating predominantly in the *having* mode 'are alienated from their work, from themselves, from other human beings, and from nature' (Fromm 1976, p. 151), not having found an adequate solution to the question that confronts humankind of all ages and cultures, 'the question of how to overcome separateness, how to achieve union, how to transcend one's own individual life and find atonement' (Fromm 1974, p. 9). Such persons find in conformity, orgiastic states (sex, drugs, auto-induced trance) and creative activity (of the artist or the artisan), only partial answers to the problem of our separateness (Fromm 1974, pp. 11-18). They achieve only an immature, dependent form of love, or 'symbiotic union', the passive form of which is submission, the active form domination. The dominating person is as dependent on the submissive person as the latter is on the former; neither can live without the other. The difference is only that the dominating person commands, exploits, hurts, humiliates, and that the submissive person is commanded, exploited, hurt, humiliated (Fromm 1974, pp. 19-20).

In describing the nature of, and the path to the *being* mode of existence, Fromm contrasts symbiotic union with mature love, which is 'union under the condition of preserving one's integrity, one's individuality' (Fromm 1974, p. 20). He identifies care, responsibility, respect and knowledge as being four elements basic to all forms of mature love (Fromm 1974, p. 26).

Love is the active concern for the life and the growth of that which we love... [R]esponsibility, in its true sense, is an entirely voluntary act; it is my response to the needs, expressed or unexpressed, of another human being... Respect... denotes... the ability to see a person as he is, to be aware of his unique individuality. Respect means the concern that the other person should grow and unfold as he is... I know in the only way knowledge of that which is alive is possible for man – by experience of union – not by any knowledge our thought can give (Fromm 1974, pp. 26-31).

In cultivating this unalienated, *being* mode of existence, Fromm points out that, ‘we have faith in the potentialities of others, of ourselves, and of mankind because, and only to the degree to which, we have experienced the growth of our own potentialities, the reality of growth in ourselves, the strength of our own reason and of love’ (Fromm 1974, p. 125). Meaningful, productive activity is indispensable for the practice of the *being* mode and the art of mature love, but ‘by activity is not meant “doing something”, but an inner activity, the productive use of one’s powers’ (Fromm 1974, p. 128).

Many thinkers have concurred with Fromm’s observation that ‘*the power to act creates a need to use this power and that the failure to use it results in dysfunction and unhappiness*’ (Fromm 1949, p. 219). Maslow (1954, p. 91), for example, explains that, ‘What a man *can* be, he *must* be. This need we may call self-actualization.’ In discussing the psychology of engagement, Csikszentmihalyi (1997) describes the experience of what he calls ‘flow’, which ‘tends to occur when a person’s skills are fully involved in overcoming a challenge that is just about manageable. Optimal experiences usually involve a fine balance between one’s ability to act, and the available opportunities for action... [A]ttention becomes ordered and fully invested’ (Csikszentmihalyi 1997, pp. 30-31). And Frankl (1962, p. 107) expressed the point this way: ‘What a man actually needs is not a tensionless state, but rather the striving and struggling for some goal worthy of him’.

Fromm observes that the character structure of the average individual and the socio-economic structure of society are interdependent, and the blending of these two he calls social character (Fromm 1976, p. 133). He argues that the most important observation for understanding the character of modern human society is the change in the social character, within the *having* mode, from the earlier era of capitalism to the second part of the twentieth century: ‘The authoritarian-obsessive-hoarding character that had begun to develop in the sixteenth century, and continued to be the dominant character structure at least in the middle classes until the end of the nineteenth century, was slowly blended with or replaced by the *marketing character*’ (Fromm 1976, p. 147). Fromm suggests that the identity crisis of modern society is actually the crisis produced by the fact that,

its members have become selfless instruments, whose identity rests upon their participation in the corporations (or other giant bureaucracies)... functioning according to the logic of the “megamachine” of which they are a part, without asking any questions except how well they function, as indicated by their advancement in the bureaucracy (Fromm 1976, pp. 148-149).

The centre of this alienated, *industrial era* social character has been ‘fear of and submission to powerful male authorities, cultivation of the sense of guilt for disobedience, dissolution of the bonds of human solidarity by the supremacy of self-interest and mutual antagonism’ (Fromm 1976, p. 146). Fromm emphasises that many people in bureaucratic positions are not bureaucrats in a characterological sense (Fromm 1976, p. 186). However, he argues (1976, pp. 185-187) that, reflecting the dominant *having* mode, the deadening bureaucratic spirit, which is incompatible with the spirit of active participation by the individual, pervades all spheres of life, not only among administrators, but where it seems not to be obvious, as among teachers for example.

The bureaucratic method can be defined as one that (a) administers human beings as if they were things and (b) administers things in quantitative rather than qualitative terms, in order to make quantification and control

easier and cheaper... Bureaucrats fear personal responsibility and seek refuge behind their rules; their security and pride lie in their loyalty to rules, not in their loyalty to the laws of the human heart. (Fromm 1976, p. 185)

Evidence I present below suggests the 'bureaucratic spirit' is pervasive among both teachers and students, and the main impediment to the achievement of transformational outcomes, the attributes increasingly recognised as desirable in school graduates, and those suggested by the Dynamic Paradigm of Learning and Change as the valuable outcomes of quality education.

4.2 THE POLITICAL NATURE OF SCHOOLING

Recognising the political character of the traditional culture of schooling, and what it does and does not allow young people to experience, Laing (1971, p. 24) observed that, 'the condition of alienation, of being asleep, of being unconscious, of being out of one's mind, is the condition of the normal man. Society highly values its normal man. It educates children to lose themselves and to become absurd, and thus to be normal'. Foucault (1977, 1980, 1988; Sarup 1993) also observed the different ways that different cultures and historical periods influence human beings' knowledge about ourselves.

In Chapter 3, we saw that the duality of determinism and autonomy finds expression in terms both of language (the conditioning of culturally endowed, abstract concepts, juxtaposed with critical thought/practice/literacy) and of agency (patterns of authority and power wherein stereotypical behaviour and the imposition of external limits by arbitrary authority is juxtaposed with the spontaneous, creative expression, perceptual control and ultimate epistemological authority of the individual). Foucault emphasised the determination of individuals by social influences through both language and patterns of power, but was also concerned with how we might avoid the effects of domination on a child (Foucault 1988, p. 18). In his early work, he focused on the constitution of the individual subject in discourse (Sarup 1993, p. 73). In later work, Foucault shifted from a

focus on linguistic determination to emphasise the domination of individuals by power relations, noting that,

Truth is a thing of this world: it is produced only by virtue of multiple forms of constraint. And it induces regular effects of power. Each society has its regime of truth, its 'general politics' of truth: that is, the types of discourse which it accepts and makes function as true; the mechanisms and instances which enable one to distinguish true and false statements, the means by which each is sanctioned; the techniques and procedures accorded value in the acquisition of truth; the status of those who are charged with saying what counts as true. (Foucault 1980, p. 131)

Popkewitz (1991, p. 14) argues that, 'The significance of modern pedagogy is its tie to problems of social regulation; pedagogy links the administrative concerns of the state with the self-governance of the subject. The forms of knowledge in schooling... have the potential to organise and shape individual identity'. It is the *having* mode of existence, with its bureaucratic, symbiotic domination-submission organisational culture, that characterises education today. Sawada and Caley (1985, pp. 14-15) outline how such values describe the general character of present day education.

The school is a more or less well oiled machine that processes (educates?) children. In this sense, the education system (school) comes complete with production goals (desired end states); raw material (children); a physical plant (school building); a 13-stage assembly line (grades K-12); plant supervisors (principals); trouble shooters (consultant, diagnosticians); quality control mechanisms (discipline, rules, lock-step progress through stages, conformity); interchangeability of parts (teacher proof curriculum, 25 students per processing unit, equality of treatment); uniform criteria for all (standardised testing interpreted on the normal curve); and basic product available in several lines of trim (academic, vocational, business, general).

The behaviourist view that individuals behave in response to stimuli from the environment, that they are things controlled or ‘completely determined’ (Skinner 1972, p. 21) by their environment, including other people, has powerfully influenced still-dominant conceptualisations of the nature of knowledge, learning, motivation, teaching and assessment. In the behaviorist perspective memory, rote learning and performance were the target, not thinking. Notions of mind, meaning, feeling, understanding and autonomy were considered ‘pre-scientific’, ‘mentalistic’, ‘miraculous’ ‘fictions’ (Skinner 1972, pp. 12-25). Shepard (2000) argues that some of the most influential behaviourist assumptions still active in the minds of many educators are these:

1. Learning occurs by accumulating atomized bits of knowledge;
2. Learning is tightly sequenced and hierarchical;
3. Transfer is limited, so each objective must be explicitly taught;
4. Tests should be used frequently to ensure mastery before proceeding to the next objective;
5. Tests are isomorphic with learning (test = learning);
6. Motivation is external and based on positive reinforcement of many small steps.

Thus, traditional forms of curriculum tend to be characterised by mandated, atomised, closed-ended syllabus content, objectives or outcomes, and various pedagogies of control.

Atkin (1999, p. 7) identifies some of the practices adopted to make schools more efficient in serving the ‘political purpose’ of ranking: ‘curriculum content shaped by preparation for University requirements; streaming; norm referenced assessment; ranking; learning driven and shaped by written assessment...; judgements of worth having to be objective and quantifiable... ; and “League” tables comparing school performance on formal assessment and equating school success with performance on public exams’. These practices describe an intensification of the bureaucratic method as defined by Fromm and, as Atkin (1999, p. 7) points out, they have led to the attitude that learning is not valid or

valuable unless it can be measured by a written examination, ‘whereas we know quite well that... “not all that counts can be counted, and not all that can be counted counts”’.

Liberal Western democracies, Elliott (2000) notes, have been reluctant to institutionalise in schools recognition of students’ capacities for autonomous thought and action. ‘Deference to elders may not be expected to continue throughout one’s adult life in the contemporary industrial societies of the West, but it is expected to continue throughout the period of formal schooling, and the model of authority relations employed is essentially one of paternalistic authority’ (Elliott 2000, p. 181). Elliott suggests that the reason for this stems from an assumption embedded in the philosophy of the Enlightenment. Most adults believe they must ensure that children accumulate the objective, authoritative knowledge necessary for reliable guidance of thinking and action, before they can be trusted with the status of autonomous subjects.

Schools continue to operate as if knowledge can still be regarded as an objective mirroring of reality. In doing so, it appears to produce ‘fixed standards’ for measuring educational achievements. Such a view of knowledge is perpetuated because it becomes imperative for educational policy dominated by economic productivity as *the* goal of education. This is why standards-driven educational reforms embody the same view of knowledge as that embodied in the traditional subject-based curriculum. (Elliott 2000, pp. 181-182)

This view of knowledge parallels an ‘old’ paradigm of childhood described by Prout and James (1990). In this view, children are seen in stark contrast to the adults they will one day become. Children are seen as immature, irrational, incompetent, asocial and acultural, with adults being mature, rational, competent, social and autonomous (Prout & James 1990, p. 13). In the ‘emergent’ paradigm, it is recognised that childhood, as distinct from biological immaturity, is a social construction, and that, ‘Children are and must be seen as active in the construction

and determination of their own social lives, the lives of those around them and of the societies in which they live. Children are not just the passive subjects of social structures and processes' (Prout & James 1990, p. 8).

Steinberg and Kincheloe (1998, pp. 17-18) describe what they call 'the dilemma of the post-modern childhood':

Children's access to the adult world via the electronic media of hyperreality has subverted contemporary children's consciousness of themselves as incompetent and dependent entities... Postmodern children are not accustomed to thinking and operating as little tikes that need adult permission to operate... This change in children's access to adult knowledge about the world and the changes in the nature of childhood that it produces have undermined the conceptual/curricular/managerial bases on which schooling has been organised. We do not believe it hyperbolic to argue that in light of these cultural changes schools must be reconceived from the bottom up... In this context school becomes not as much an institution of information delivery as a hermeneutical site, that is, a place where *meaning* is made, where understanding and interpretation are engendered.

Posch (1994) describes some similar contemporary tensions. The growing complexity of interactions between human beings and their environment, he argues, renders centralised power structures problematic, because they reduce their problem-solving capacity. Hence, governments are tending to decentralise power as a means of controlling the diversity of influences operating in society. Posch (1994, p. 155) argues that there comes a point when there is such a diversity of interests, needs and perspectives, that responsibility for developing strategies to enable people to respond to the conditions of their lives has to be devolved to the smallest social unit, the individual. For Posch, this process of devolving responsibility to the individual represents the culmination of the promise of the European Enlightenment, which he interprets in the words of Fend as 'the right, duty and

possibility to use one's mind without being led by someone else, and to shape one's life in one's own terms' (quoted in Elliott 2000, p. 185).

The traditional, alienating, 'commodity' view of knowledge, and the old paradigm of childhood, are manifestations of Fromm's *having* mode of existence, just as the Dynamic Paradigm's emancipatory view of knowledge as dynamic and actively constructed and reconstructed by individuals, including children, is an expression of the *being* mode. Fromm (1976, p. 176) concluded that, 'if the economic and political spheres of society are to be subordinated to human development, *the model of the new society must be determined by the requirements of the unalienated, being-oriented individual*'. Foucault (1988, p. 18) argues that there is no evil inherent in teaching another 'in a given game of truth', but that the problem is to know how we are to avoid in pedagogical institutions and practices 'the effects of domination which will make a child subject to the arbitrary and useless authority of a teacher'. Elliott (2000, p. 183) draws a similar conclusion, making the point that individuals who want to be recognised as autonomous persons no longer find traditional education motivating.

However, this need not imply that pupils cannot be motivated to learn within liberal democratic societies in ways which have positive spin-offs for their economies. It does mean that political authorities in such societies should avoid attempting to imitate the paternalistic authoritarianism which appeared to work in the past and may still appear to work in some Asian societies, as a basis for school improvement. (Elliott 2000, p. 183)

Dominant cultural assumptions and patterns of power and agency currently have a strong influence on the student's experience of schooling, and adversely impact on the development of the student's image of self, others, and the world. One example of evidence for this assertion is provided by the widely observed crisis of student alienation, manifesting particularly in the middle years of schooling. Research confirms the common observation that students, especially from ages 10-15 years, are 'switching off' (Barrett 1999, p. 6). Among the needs of young adolescents,

only recently recognised in nationally developed statements, are: 'Purpose. Having opportunities to negotiate learning that is useful now, as well as in the future. Empowerment. Viewing the world critically and acting independently, co-operatively, and responsibly' (Barrett 1999, p. 8). One of the guiding principles of middle schooling in Australia is that it should be 'Learner-centred. Coherent curriculum is focused on the identified needs, interests, and concerns of students, and with an emphasis on self-directed and constructed learning' (Barrett 1999, p. 9).

However, younger children share such needs. On the basis of studies in developmental psychology, Erikson argued that if children from ages 3 to 6 are allowed the freedom to select meaningful activities, they tend to develop a positive outlook characterised by the ability to initiate and follow through. If not, they withdraw from taking an active stance and permit others to make decisions for them (Erikson 1965, pp. 246-250). According to Erikson, the central task of middle childhood, ages 6 to 12, is to achieve a sense of industry associated with creating goals that are personally meaningful and achieving them (1965, pp. 250-252). Corey (1996, p. 105) observes that failure to achieve such a sense of industry during these years gives rise to some of the following problems: 'a negative self-concept; feelings of inadequacy relating to learning; feelings of inferiority in establishing social relationships; conflicts over values; a confused sex-role identity; unwillingness to face new challenges; a lack of initiative; dependency'. It is the widespread observation of these very problems that underlies concerns about student disengagement and underachievement in the middle years of schooling. More explicit consequences of this learned dependence and experience of alienation (Sheehan *et al.* 2000) are becoming ever more prevalent: high drop-out rates, increasing levels of youth depression and suicide, drug abuse, anti-social behaviour, poverty, welfare dependence and homelessness.

Elliott (1998, p. 57) argues that, 'Confronting the problem of student disaffection from schooling in advanced societies will involve resolving some fundamental

issues about the functions and purposes of schooling and entail radically rethinking the form and content of the curriculum'. The tendency has been to illegitimise students by 'psychologizing' student disengagement and failure (McLaren 1998, p. 210) and 'blaming the victim' (Ryan 1976). However, many of the problems manifesting so dramatically in the late primary and early secondary years and beyond, clearly have their origin in the curricular forms students traditionally experience, and do not experience, from the beginning of schooling.

A second example of evidence that power currently operates with adverse effects in schooling is provided by research on literacy learning. Hill and Russell report that the middle years of schooling are virtually free from additional learning in literacy (cited in Carrington, 2002, p. 20), and Carrington (2002, p. 2) reports that, 'Students across target groups are carrying basic literacy difficulties with them into the middle years'. One of the main causes of limited literacy development involves the kinds of literacy demands and practices students experience, and the relevance students see in literacy for their own lives (Cairney 1987, 1988). Green (1998) reports on research which contrasts the literacy demands on ten students in their last year of primary and first year of secondary school. The study found that in the final year of primary school, 45% of writing involved non-fictional genres, 45% fictional, and 10% listing and labeling (Green 1998, p. 121). In the first year of high school, in English only 12% of writing involved non-fictional genres, 16% fictional, 53% predominantly literal Q&A activities, and 18% copying, filling in the gap and listing (Green 1998, p. 122). Similar proportions were observed in History, and in Science Green (1998, p. 122) noted that between 50% and 69% of all 'writing' was copying. A very similar pattern was found in reading activities (Green 1998, p. 127). Green (1998, pp. 122, 127) noted a dramatic decline in positive attitudes to writing, reading, and school in general. Most primary schools have a long way to go in terms of providing students with opportunities to construct understandings as they actively use and analyse texts in authentic contexts and for genuine personal and social purposes. High schools clearly reflect an even stronger

alignment with the traditional, disempowering and alienating curricular form characterised by control and a transmission model of learning.

Another example of evidence that dominant cultural assumptions and patterns of power embodied in curricular forms adversely influence student constructions of self, others and the world is provided by a recent study of the interrelationship between thinking styles and learning. This study illustrates that the negative impacts of the traditional culture of schooling are not limited to student underachievement or disengagement. The study showed that those students who achieve highest academically are actually those who prefer to work individually, who show adherence to existing rules and procedures, and who do not enjoy creating, formulating and planning for problem solution (Cano-Garcia & Hughes 2000, p. 413). However, it is highly significant that the researchers confirm that,

As outlined by many educational researchers in the UK, Sweden and Australia, it is untenable to think that students possess inherent, invariant learning styles, or that learning is a decontextualised process... Schools reward with good grades those students who assume an orientation towards merely reproducing the meaning of learning materials. (Cano-Garcia & Hughes 2000, pp. 424-425)

In a similar vein, Loughran and Northfield (1996) reported on an action research study that found students find it difficult to come to terms with teacher expectations for thinking and understanding, because 'neither of these expectations fit easily with their already well-formed perceptions of the personal and institutional demands of school... Doing what is expected and working hard are the predominant values' (Loughran & Northfield 1996, pp. 89, 126). Black and Atkin (1996, p. 90) also report that students prefer to follow rules and procedures they have been given like recipes, rather than developing their own and reflecting on learning, and that, when asked to take more responsibility for their own learning, students 'discover that thinking is hard work, that taking responsibility and abandoning dependence is risky'.

These are just a few of the examples that could be provided. Ramsden (1988, p. 14) notes that there is a 'depressing litany' of studies that constitute a huge body of data with an 'unambiguous' message, that students who 'pass examinations successfully', are 'highly adept at very complex skills', and can 'reproduce large amounts of factual information on demand', 'are unable to show that they *understand* what they have learned'. Ramsden (1988, p. 15) goes on to emphasise that, 'The students who have been the subjects of these investigations have sometimes successfully negotiated even graduate-level courses. Some now teach other students. ...When faced with apparently simple questions that go to the heart of their knowledge, they are lost'.

The underlying reason for students' ineffective learning lies, Ramsden (1988, pp.15-17) argues, in the assumptions teachers and other educators hold about teaching and assessment. Commenting on a particular study to illustrate a general assumption and practice, Ramsden (1988, p. 17) observes that:

Teachers often did not discover the sources of children's mathematical errors. To do this would have required a diagnostic stance, focused on eliciting the typical process or strategy a child used. Instead, teachers reacted to the *product* of a child's performance, often providing direct instruction to remedy the mistake, but ignoring the misconception underlying the errors. Such instruction frequently did not work because it failed to address the proper origin of the error. Rather than seeing the mistakes as data to be used as evidence of a pupil's conception (or misconception), teachers were apt to see them simply as mistakes that needed to be put right.

Echoing the findings of the Cano-Garcia & Hughes study cited above, Ramsden (1988, p. 17) notes that, 'the pupils "learned", with great success, many strategies unrelated to mathematics in order to provide their teachers with what they predicted the teachers would reward (the correct answers)... even though the child did not understand the process of reaching them'.

Most of these studies confirm Eisner's (1991) view, shared by many, that evaluation practices, including the various forms of inspection, testing, assessment and reporting, are the most powerful forces influencing the priorities and culture of educational institutions – the hidden curriculum. Eisner (1991, p. 81) concludes that, 'More than what educators say, more than what they write in curriculum guides, evaluation practices tell both students and teachers what counts. How these practices are employed, what they address and what they neglect, and the form in which they occur speak forcefully to students about what adults believe is important'. Resnick and Resnick (1989, p. 59) observed, even more simply, that 'you get what you assess', and 'you do not get what you do not assess'. These observations are explained by the Dynamic Paradigm of Learning and Change, which makes clear that human functioning is purposeful and evolutionary, that intelligence is adaptive action. In traditional school cultures, the deeper goals educators may (or may not) have for students' learning are, in students' eyes, secondary, if they figure at all. For most students who are playing the schooling 'game', the primary goal to which perception, behaviour and learning are adapted is not viable action schemes relating to authentic purposes and contexts, but rather the achievement, by whatever means, of the limited kinds of rewards offered by the schooling context, mainly good grades, made accessible only through particular kinds of assessment performances.

The above evidence demonstrates the potent effects which the hidden curricula of schools have on learning and the character structure of individuals, and on the creation of social character. They are echoes of the disturbing results of Milgram's (1974) experiment at Yale University in which paid volunteers were asked to give increasingly heavy electric shocks to 'learners' who made mistakes. Most of them continued to deliver the shocks even when the 'learner' was groaning with pain. The above evidence also has many contemporary parallels in human action in environmental and social contexts. Evidence of the destructive consequences of the widespread alienation of people from the natural world, by means of which we live, hardly needs specific elaboration here. Among the most obvious and topical

examples of alienation from other human beings, at the time of writing, is the reportedly systematic physical, sexual and psychological abuse of prisoners by US Military forces in Iraq and elsewhere (BBC 2004; MSNBC 2004; Wilkinson 2004). This example extends beyond the actions of military personnel. James Inhofe, GOP (Grand Old Party i.e. Republican) Senator from Oklahoma, told a Senate Armed Services committee regarding the abuses of Iraqi prisoners that,

I'm probably not the only one up at this table that [sic] is more outraged by the outrage than we are by the treatment... Many of [the Iraqi prisoners] probably have American blood on their hands. And here we're so concerned about the treatment of those individuals. (Quoted in CBS News 2004)

These are dramatic demonstrations of what Fromm identified as the *having* mode of existence, of the bureaucratic social character, alienated from 'themselves, from other human beings, and from nature' (Fromm 1976, p. 151).

Pinar (1975a, p. 381) refers to the 'hidden' curricular impact described above as the 'disconfirmation' of the child – dependence on authority, obedience to duty, separation of feelings and moral concerns, seeing oneself and others as objects, lack of trust in one's own power. 'We graduate, credentialed but crazed, erudite but fragmented shells of the human possibility', observes Pinar (1975a, p. 381).

Dominant forms of schooling constitute powerful discourses which legitimate certain values, beliefs, interests and modes of personal and social existence, and invalidate others, and as Sarason (1990, 1996) and others (e.g. Gore 1998) have argued, 'Schools will remain intractable to desired reform as long as we avoid confronting... their existing power relationships' (Sarason 1990, p. 5).

4.3 CURRICULAR RESPONSES

Posch (1991) notes that the young are still confronted with a school culture of predefined demands without space for negotiation. The challenge for schools, he argues, is to take responsibility for curriculum initiatives which create such spaces, and thereby enable students to negotiate new pedagogical conditions which recognise and value their capacities for autonomous learning. In particular, schools

should provide opportunities for students to engage with ambiguous and controversial issues, to participate in realistic situations requiring a holistic, cross-disciplinary approach, and to encounter what Posch calls ‘low structured situations’, where ‘the problems to be solved have yet to be clearly defined [and] therefore differ considerably from the normal instructional situation, in which students are offered pre-structured and systematic information’ (Posch 1991, p. 16).

Other writers also argue the value of providing students with opportunities to engage with ‘unstructured’, ‘low-structured’ and ‘ill-structured’ problems (e.g. Carter 1997; Elliott 2000; Schostak 2000; Spiro *et al.* 1992). The distinction drawn by Marshall (1992a) between work-oriented and learning-oriented classrooms reflects this perspective. Teachers in work-oriented classrooms concern themselves with transmission of information, and student mastery of specific, pre-determined learning outcomes, whereas those in learning-oriented classrooms facilitate the active construction of knowledge through an emphasis on problem-solving and open-ended activities that connect with student values, interests, purposes and life worlds.

Savery and Duffy (1995, p. 33) emphasise the significance of the characteristics of the learning environment, the context of learning.

Rather than simplifying the environment for the learner, we seek to support the learner working in the complex environment. This is consistent with both cognitive apprenticeship (Collins, Brown & Newman 1989) and cognitive flexibility theory (Spiro *et al.* 1992) and reflects the importance of context in determining the understanding we have of any particular concept or principle.

The importance of such ‘complex environments’ for literacy learning is also widely recognised. Lankshear (1998, p. 57), for example, notes how engaging in ‘outside school Discourses’ in such ‘organic contexts’ is an important component of any attempt to realise in substance the purposes espoused for Australia’s National Literacy Plan.

Xiaodong and his team at Vanderbilt University attempt to identify the implications of the principles of constructivism for how we design and manage curriculum. They conclude that we must provide students opportunities to: (1) plan, organize, monitor, and revise their own research and problem solving; (2) work collaboratively and take advantage of distributed expertise from the community to allow diversity, creativity, and flexibility in learning; (3) learn self-selected topics and identify their own issues that are related to the problem-based anchors and then identify relevant resources; (4) use various technologies to build their own knowledge rather than using the technologies as “knowledge tellers”; and (5) make students’ thinking visible so that they can revise their own thoughts, assumptions, and arguments (Xiaodong *et al.* 1995, p. 59). Such freedom to choose and pursue interests and open-ended projects is described by Sawada and Caley (1985, p. 18) as the first guideline toward knowing/becoming, as distinct from *having* knowledge: ‘As investigator, the child Becomes, more and more, a self-actualizing epistemologist – thus Knowing and Becoming are one’.

Many current educational reform agendas in Australia concern outcome-based education (OBE), in one form or another. Major reforms in Queensland state education in the period from 1999 to 2003 certainly involved various approaches to OBE. Spady (1993) identifies three major forms of OBE: traditional, transitional, and transformational. In traditional OBE, curriculum is not substantially different, but the emphasis shifts from inputs to outcomes, a ‘mapping of what is’ (Atkin 1999, p. 16). ‘Thus outcomes are synonymous with traditional, content-dominated categories that do not relate to real life demands and living experiences. The focus is primarily on skills and competencies’ (Spady 1993, p. 7). In transitional OBE, subject matter serves as a vehicle for the development of higher order competencies such as critical thinking, problem solving and effective communication, but school culture, processes and organisational structures remain largely unchanged (Spady 1993, pp. 8-9). Transformational OBE is not focused on curriculum outcomes, but ‘on the broad role performance capabilities of young people and their ability to do

complex tasks in real settings, in real situations, relating more directly to life' (Spady 1993, p. 10). Transformational OBE requires a fundamental shift in the structures and curriculum that traditionally made 'good students' (or did not), and shifts in leadership, policy, outcome definitions, curriculum design, pedagogy, assessment and reporting (Spady 1993, p. 11). Attempts to make such fundamental shifts have proven problematic. Spady observes that there is massive institutional inertia surrounding the traditional model, and that traditional OBE reforms, including standards based reforms, are so popular because 'you can have "improvement" without really changing anything' (Spady 2001, pers. comm. May).

4.4 TENSIONS IN THE PROCESSES OF SCHOOL REFORM

Blackmore (1999) identifies some of the contradictory pressures impacting on schools, including processes of 'de-traditionalisation', focusing on lifelong learning for a learning society, and 're-traditionalisation', with a re-emphasis on traditional subjects, basics and standards (1999, p. 6). She describes a number of what she calls 'postmodern' tensions, including:

- the state taking greater control over education policy at the same time as it is losing economic control;
- the expectation that schools will educate independent, autonomous, self-maximising individuals while schools are subjected to prescriptive political and economically driven demands, and teachers are constructed as dependent identities;
- pressure to emphasise foundational approaches to literacy, focused on code-breaking, rather than the broader and more requisite multiliteracies and socio-cultural approach which sees learning as social, context dependent and participative;
- choosing a curriculum balance between content specific detail and interdisciplinary meta-skills which facilitate a capacity and motivation for lifelong learning;
- confusion between productivity, associated with a sense of well-being, with doing something worthwhile, and being recognised and rewarded

appropriately, and productivism, where the mechanisms of economic development are substituted for personal growth and for the goal of living a happy life in harmony with others and with nature;

- top-down, centralising and controlling tendencies being stronger than decentralising, enabling tendencies to address diversity and unpredictability;
- accountability focus on quantifiable outcomes to the general neglect of context and process factors;
- contradictions between explicit expectations and the hidden curriculum of competition and self-promotion; and
- a mismatch between the psychological, emotional and cognitive needs of adolescents and the patterns of authority which characterise school environments.

Blackmore (1999, pp. 30-34) argues the need for socially just learning systems, emphasising the responsibility of governments, schools and teachers, recognition and equal valuing of difference, and reciprocity, openness and trust between all stakeholders.

However, Fromm observed that, 'behind all political parties are only two camps: *those who care and those who don't care*' (Fromm 1976, p. 201), that is, those in the *being* mode and those in the *having* mode, respectively. It would seem wise to concede that the same may be said of education department bureaucrats, of academics, and of educators (Hargreaves 1996, provides an example regarding the latter). Amongst 'those who don't care', whether politicians, bureaucrats, academics or educators, are many whose purposes are served by being *seen* to care, and consequently 'most discourse about schooling obscures the relationship between reform and the underlying social values of institutional life' (Popkewitz, Tabachnick & Wehlage 1982, p. 5), such as 'substantive issues of social justice and care' (Blackmore 1999, p. 31). Sarason (1996, p. 255), for example, notes that, of the hundreds of reports about school reform by commissions and task forces in the

past twenty years, 'I can recall none that discusses power relationships in the classroom'.

High levels of apparent congruence between the rhetoric of motherhood statements of educative purpose made by educators, state and national government leaders, and international organisations belie deeply discrepant interests (Coffield 2000, pp. 3, 16) and particulars of policies and practices regarding curriculum, assessment, accountability, and pedagogical matters relating to control and authority (Atkin 1999). Coffield (2000, pp. 6-7) notes that the terms 'lifelong learning' and 'learning society', for example, are 'being widely used to give the outward appearance of change', without any new thinking or any new pedagogy. Analyses which view educational reform as conserving political and economic agendas and systems, such as through adjustment to markets, and the needs of predicted technological and economic futures, 'lack attention to the substantive and longer term changes in the governing principles' (Popkewitz 1998, p. 560), and serve as 'a rhetorical form intended to convince others that what is being done to them is in their own interests' (Popkewitz 1991, p. 245).

Emancipatory reforms will not be initiated or championed by persons who do not share the values upon which such reforms rest, such as, for example, those concerned with benchmarking and improving measurable and quantifiable student performance data relative to other states and other nations (Blackmore 1999, p. 16). Angus (1998) explores the tensions between systemic control and empowerment in educational reform. He argues that, while basic regulatory structures remain, there is unlikely to be sustained change to learning and teaching, but removal of these structures would mean that officials would lose control of the system they have responsibility for managing. Angus (1998, p. 112) concludes that, 'this is not to say that it is impossible to imagine a public education system of self-determining schools with a variable pattern of work organisation but that this would require a feat of imagination, not of administrative practice'. The failure of previous waves of educational reform, and this review of literature, lead me to conclude with others

(e.g. Blackmore 1999, pp. 34-38; Fullan 1993a; Sachs 2000; Thompson & Zeuli 1999, pp. 367-371) the necessity of a sustained shift in focus from the government policy sector to the professional sector.

However, parallel tensions and contradictory pressures exist *within* schools also. As noted in Chapter 1, many researchers have drawn conclusions similar to Thompson and Zeuli (1999, pp. 345-346), who observe that perhaps most striking about teachers' efforts to learn and put into practice reform ideas relating to a 'thinking curriculum' is that 'it is possible – indeed, fairly common – to get a great deal right and still miss the point of what Sykes (1990) has called the “inner intent” of the reforms'. Angus (1998, pp. 75-76) observes that,

Teachers are happy to rely on the decisions of officials provided that the officials are not seen to be planning to overturn the existing order of the school. They do not mind, or at least can tolerate, changes, small scale changes, that constitute an embroidering of the existing order. Major upheavals, however, activate the power networks.

As we have seen above, forms of knowledge and forms of schooling may powerfully influence the construction of individual identities and orientations to the world that many people, including those who become teachers, maintain throughout their lives. For many, this influence has been in the direction of the bureaucratic/marketing character structure identified by Fromm and described above. In this alienated *having* mode, authority patterns are characterised by domination/submission, people are controlled and managed as things, personal responsibility is feared, security is found in conformity and loyalty to rules, and pride is found in image, possession, and functional efficiency. The bureaucratic organisational culture of traditional schooling will tend to reinforce and support teachers who have such identities and orientations.

Beane (1995, p. 617) observes that there is a 'fundamental tension in schools that current restructuring proposals are simply not addressing', and he argues that this

tension has to do with the way curriculum mediates the relationships between teachers and young people. Beane argues that most talk about paradigm shifts in education today, does not refer to a fundamental change in viewpoint that questions and revises much of what is currently taken for granted, but merely refers to such things as ‘changing the school schedule, more sharply defining outcomes of schooling, or coming up with new methods of assessment’ (1995, p. 622). Changes of this kind merely ‘ask about “how” we do things and leave alone more fundamental questions about “what” we do and “why”’ (Beane 1995, p. 622). In seeking to address those more fundamental questions, and the tensions associated them, Beane draws an important distinction between disciplines and school-based subjects. He argues that a discipline is a

a specialized set of techniques or processes by which to interpret or explain various phenomena. ...Those on the front edges of a discipline know that disciplinary boundaries are fluid and often connect with other disciplines... [School-based subject areas, however,] are really institutionally based representations of disciplines, since they deal with a limited selection of what is already known within the field. Subject areas are, in the end, a more severe case of “hardening of the categories” than are the disciplines they supposedly represent. ...[C]alling for an end to the separate-subject approach to school curriculum organization is not at all a rejection or abandonment of the disciplines of knowledge. (Beane 1995, p. 617)

However, as Beane (1995, p. 619) observes, ‘teachers and supervisors often build their professional identities along subject-matter lines. They are not just teachers, but “math teachers” or “music teachers” or “language arts teachers”. Identities are also tied to status associated with subject areas’.

Maslow (1966) elaborates on the narrowly adaptive value of such identities connected to the possession of particular abstract bodies of knowledge. He suggests that intellectualism can be a defence (1966, pp. 33-39), and can serve a need for certainty (1966, p. 26), a need to be dominant and controlling (1966, p. 27), a need for ‘impressing people often at the cost of part of the truth’ (1966, p. 29), and a

need to be 'satisfied with naming rather than experiencing... [a] common shortcoming of professional intellectuals' (1966, p. 28). Maslow (1966, p. 33) makes even clearer the connection between such identities and schooling, arguing that intellectualism and science

can be primarily a safety philosophy, a security system, a complicated way of avoiding anxiety and upsetting problems. In the extreme instance it can be a way of avoiding life, a kind of self-cloistering. It can become – in the hands of some people, at least – a social institution with primarily defensive, conserving functions, ordering and stabilizing rather than discovering and renewing.

A recent UNESCO report (Asia-Pacific Centre of Educational Innovation for Development 1996, pp. 391-392) expressed concern about the typical nature of teachers' identity and orientation to the world:

Teacher educators spend significant periods of time teaching pedagogy, curriculum and the disciplines of student development. Little or no time is spent preparing the trainee teachers for their real life in these difficult contexts. In order to cope with their life in such contexts, they need additional skills. The basic skill which is needed is self-security, a strong sense of who they are and what they are doing in their life. In their work, they need to see themselves as at the centre of the community rather than being only in the classroom. As such, they need to be self-reliant and skilled in promoting community participation. This of course requires high level skill in communication and negotiation.

The kinds of narrowly adaptive identities and orientations amongst educators described above tend to result in a focus on subject-matter and on strategies of *teaching* and control, rather than on the subtleties and specific, emancipatory processes of *learners' relation to experience and the world*. They are not conducive to the kind of pedagogical practices and relationships suggested as important by the Dynamic Paradigm of Learning and Change, especially by Constructs 9 and 14.

Issues of teaching, learning and curriculum are inseparable from issues of authority and power. Clearly, processes of significant school reform must involve all stakeholders in addressing and seeking to satisfactorily resolve or accommodate these issues, especially those relating to professional identity. We must also explore ways to limit the constraining and disempowering impacts of certain forms of assessment (ACSA 1994; Blackmore 1988; Masters & Forster 2000; Shepard 2000), and ‘address *all* that we say we value’ (Atkin 1999, p. 16). The Dynamic Paradigm of Learning and Change suggests, along with many individual writers (e.g. Atkin 1999, p. 13; Blackmore 1999, pp. 2, 34; Delors 1996; Elliott 2000, p. 183; Fromm 1976, p. 198; Fullan 2001, p. 271), that promotion of the private good is likely to be the best road to achievement of the public and economic good. Moreover, we may be able, as Kreisberg argues (1992, p. 61), to promote ‘another dimension, or form, or experience of power that is distinctly different from pervasive conceptions’, where power is conceived as *capacity* rather than *domination*.

Nevertheless, in Chapter 3 we noted the common suppression by knowledge workers of ideas subversive of the basic commitments of the paradigm of the day. Reform efforts aimed at significant change in school culture involving shifts in emphasis from subject-matter mastery to purposeful practical-critical inquiry and transformational outcomes, and relating to patterns of authority, control and autonomy in learning, pedagogical and interpersonal relationships, will initially be perceived as threatening by some teachers, who will strenuously resist them. Only when strong evidence is uncovered and authentic limits are encountered that show the existing paradigm to be inadequate, and after a period of crisis, does acceptance eventually come, individual by individual, that a whole new way of seeing the world, a new paradigm, is required. The Dynamic Paradigm of Learning and Change, itself, makes this clear. School reform efforts must acknowledge and respond to the realities of existing controls and accountabilities, and of existing professional/personal identities, while we argue for the humanisation of the former,

and address the challenge of seriously promoting deep learning in relation to the latter.

Several writers argue the necessity of supporting and rekindling teachers' sense of hope, of moral purpose and moral outrage (e.g. Farber 1991; Fullan 1993, 1997; Hargreaves 1997; Sergiovanni 1992). The Dynamic Paradigm of Learning and Change and related political, psychological and ethical imperatives identified in the literature reveal a coherent and viable, indeed, what would be for many an *inspiring* set of principles and motivations for educational transformation.

The Dynamic Paradigm supports the view that, in the end, each of us must find our own 'voice' as something 'inherently political' (Gitlin *et al.* 1992, p. 37), a '*constitutive force that both mediates and shapes reality within historically construed practices and relationships of power*' (McLaren 1998, p. 221). The research reported and embodied in this thesis constitutes such an endeavour, and Chapter 2, in particular, provides a quite detailed account of my efforts to 'mediate and shape reality' within the context of Queensland state schooling between 1999 and 2003. In Chapter 5, we will use the Dynamic Paradigm of Learning and Change as the reference point for a critique of two major reform agendas promoted by Education Queensland during that period.

Chapter 5

CRITIQUE OF AUTHENTIC PEDAGOGY AND NEW BASICS PROJECT REFORMS

5.1 NEWMANN'S AUTHENTIC PEDAGOGY

From 1990 to 1995, Fred Newmann and fellow researchers at the Center on Organization and Restructuring of Schools (CORS) examined the extent to which school-based management, and more flexible arrangements made possible by increased school autonomy, actually boosted student achievement.

5.1.1 Authentic student achievement

One of the apparent motivations for the work of the CORS team was their observation that many of the learning activities implemented in response to a variety of school reform proposals which advocated 'moving from traditional teacher-centred teaching toward more student-centred, or constructivist, classrooms', resulted in student work that is 'intellectually shallow and weak' (Newmann, Marks & Gamoran 1996, pp. 280-281). The CORS researchers used the term 'active learning' to summarise a 'common interest in students actively constructing meaning grounded in their own experience rather than simply absorbing and reproducing knowledge transmitted from subject-matter fields' (Newmann, Marks & Gamoran 1996, pp. 280-281). They suggest that such 'active learning' can be pursued through:

small group discussions; cooperative learning tasks; independent research projects; use of hands-on manipulatives, scientific equipment, and arts and crafts materials; use of computer and video technology; and community-based projects such as surveys, oral histories, and volunteer service.

(Newmann, Marks & Gamoran 1996, p. 281)

The CORS researchers emphasise, however, that, depending on the ways these activities and tasks are framed by the teacher, they may or may not be intellectually challenging (Newmann, Marks & Gamoran 1996, p. 281). They recognised that

reform efforts which focus on the adoption of particular procedures or student activities can easily make the activities an end in themselves, regardless of the quality of the intellectual work required of, or demonstrated by students (Newmann, Marks & Gamoran 1996, p. 281).

The CORS researchers acknowledge that different points of view exist regarding constructivism, some emphasising social and others individual sources of meaning (Newmann, Marks & Gamoran 1996, p. 284). However, they summarise some principles of constructivism, and some related principles for practice, drawing on the work of Becker and Varelas (1995), Brooks and Brooks (1993), Bruer (1993), Cohen et al. (1993), Driver (1995), Marshall (1992b), Newmann (1992), Nystrand and Gamoran (1991), Resnick (1989), Resnick et al. (1991), Wells and Chang-Wells (1992), and Wood et al. (1995). Five principles for practice, which they see as suggested *by that literature*, are:

1. ‘...teachers must be familiar with, respect, and actively use students’ prior knowledge as they teach’
2. ‘...teachers must emphasize opportunities for higher-order thinking and in-depth understanding rather than only rote learning and superficial coverage of information’
3. ‘...instruction must offer multiple opportunities for students to use conversation, writing, and other forms of expression to process information’
4. ‘...rather than an authoritative dispenser of information and truth, the teacher must become a coach, facilitator, guide, or mentor in a “cognitive apprenticeship” who inspires and nudges the student to do the active work of learning’
5. ‘...participants in the social setting for learning – students and teachers alike – must exemplify norms of collaboration, trust, and high expectations for intellectual accomplishment’. (Newmann, Marks & Gamoran 1996, pp. 285-286)

The CORS researchers assert that the specific literature on constructivism that informed their analysis, ‘does not prescribe better ways of constructing meaning, nor does it suggest that some kinds of meaning might be more powerful or adequate than others’ (Newmann, Marks & Gamoran 1996, p. 286). This is a most significant point. In contrast to this perspective, and consistent with the Dynamic Paradigm of Learning and Change established in Chapter 3 (Construct 4), the CORS researchers emphasise that, for ‘academic achievement to be authentic, the meanings that students construct cannot be completely idiosyncratic’ (Newmann, Marks & Gamoran 1996, p. 286).

Accordingly, much of the CORS work focused on development of a particular vision of high quality student learning, which they have variously referred to as ‘Authentic Academic Achievement’ (Newmann, Marks & Gamoran 1996, p. 286), ‘Authentic Intellectual Achievement’ (Newmann, Marks & Gamoran 1996, p. 282), and ‘Authentic Student Achievement’ (Newmann & Wehlage 1995a, p. 1). This vision consisted of three parts (Newmann & Wehlage 1995a, p. 2):

Construction of Knowledge – Students learn to organize, interpret and analyze information, instead of merely reproducing specific bits of knowledge from a textbook or classroom lecture. They learn to apply knowledge, not just collect facts.

Disciplined Inquiry – Using established knowledge in science, mathematics, history or literature, students develop in-depth understanding. They express that understanding in an “elaborate” way, such as writing an essay or engaging in a substantial discussion of the topic, instead of merely checking boxes or filling in the blanks on a test.

Value Beyond School – Students produce work, or solve problems, that have meaning in the real world. A student’s accomplishments in school have value beyond merely proving that he or she did well in school.

The CORS researchers’ vision of authentic academic achievement has, however, certain inadequacies relative to the Dynamic Paradigm of Learning and Change. Some are matters of emphasis, while others are problems of omission.

The CORS researchers view learning as ‘a complex, active mental process’ (Newmann, Marks & Gamoran 1996, p. 285), ‘rather than reproducing, meaning or knowledge’ (Newmann, Marks & Gamoran 1996, p. 283), and they do value an assessment task that ‘asks students to consider alternative solutions, strategies, perspectives, or points of view as they address a concept, problem, or issue’ (Newmann, Marks & Gamoran 1996, p. 289). Nevertheless, their description of authentic academic achievement emphasises ‘mastery’ of ‘prior knowledge that has been accumulated in a field’ (Newmann, Marks & Gamoran 1996, p. 283) in order to be able to ‘apply knowledge’ (Newmann & Wehlage 1995a, p. 2). While such activity is consistent with Construct 6 of the Dynamic Paradigm of Learning and Change, this emphasis largely ignores the need, established in the Dynamic Paradigm, to critically examine ‘authoritative knowledge’ and to authenticate, challenge and/or reconstruct culturally endowed definitions by engaging in appropriate logical and experiential procedures for considering constraints, evaluating the viability of understandings, and engaging in conceptual/action scheme change (Constructs 7, 9 and 10).

The CORS researchers’ identification of ‘value beyond school’ as a significant criterion of authentic student achievement is consistent with Construct 3 of the Dynamic Paradigm, which emphasises that human learning and knowing are essentially purposeful and contextual. However, there are significant problems of both emphasis and omission here.

The main problem of emphasis concerns the stated compatibility of this criterion with students’ ability to merely ‘*connect* new information to their own experiences’ (Newmann, Marks & Gamoran 1996, p. 286, emphasis added), with students making ‘*connections* between substantive knowledge and either public problems or personal experiences’ (Newmann, Marks & Gamoran 1996, p. 289, emphasis added), with students being asked to ‘address a concept, problem, or issue that is *similar* to one they have encountered or are *likely* to encounter in life beyond the

classroom’ (Newmann, Marks & Gamoran 1996, p. 289, emphasis added), with teaching and learning organised in traditional subject areas (Newmann & Wehlage 1995a, p. 2), and with ‘almost any technique, however traditional (e.g., lecture, textbooks, multiple-choice tests)’ (Newmann, Marks & Gamoran 1996, p. 306), ‘even in the most traditional classrooms’ (Newmann, Marks & Gamoran 1996, p. 286). While there is a reference to assessment tasks that might include asking students to ‘take some action for an audience beyond the teacher, classroom, and school building’ (Newmann, Marks & Gamoran 1996, p. 289), the above and similar statements reflect an emphasis on learning as a ‘*mental* process’ (Newmann, Marks & Gamoran 1996, p. 285, emphasis added) and on schooling as being narrowly concerned with ‘academic’ achievement and ‘admittedly limited to achievements that depend on the use of formal knowledge’ (Newmann, Marks & Gamoran 1996, p. 308), rather than with a broader set of transformational outcomes. Such statements are likely to suggest to teachers that connectedness to the world beyond school is more about making an effort to use real world examples to support students’ academic achievement in traditional subjects or disciplines, than about encouraging teachers (as the Dynamic Paradigm suggests we should) to provide students with opportunities and skills to use meaning-making, -testing, -expressing and -applying procedures associated with various disciplines to support real world learning/practices/action.

This interpretation of learning that has value beyond school continues support for a view of learning as a relatively abstract exercise. Such a view is quite different from the view of significant human learning and knowing as involving motivational, behavioural and emotional facets dynamically related with cognitive ones, and as emerging out of creative action and critical reflection in diverse sociocultural and material contexts that transcend disciplinary boundaries (Constructs 2, 3, 4, 5, 9, 10, 11, 12, 13, 14 and 15 in the Dynamic Paradigm).

A related problem of emphasis, that virtually constitutes a problem of omission, concerns the question of *who* sees the activity or learning achievement as having

value beyond school, or more specifically, as being purposeful. The CORS researchers acknowledge the significance of the observation that ‘large numbers of students consider school to be only a restricted, even an insignificant, arena of personal experience’ (Newmann, Marks & Gamoran 1996, p. 286). Nevertheless, their description of the criteria for authentic academic achievement reflects a view of students as ‘constantly working to make sense of what they *encounter*’ (Newmann, Marks & Gamoran 1996, p. 285, emphasis added). This relatively passive view of learning as *response* is most significantly different from the view of human learning and knowing as being an aspect of each *individual’s creative and purposeful action* (Constructs 2, 3, 4, 5, 9, 10, 11, 12, 13, 14 and 15 in the Dynamic Paradigm).

The CORS researchers argue that their three criteria ‘define intellectual standards essential for authenticity’, but acknowledge that they do not address the issue of ‘the appropriateness of what is taught and learned’ (Newmann, Marks & Gamoran 1996, p. 287). ‘Appropriateness’, they argue, ‘refers to the extent to which the material is considered significant *by those with authority to exercise some control over curriculum* (e.g., government officials, parents, professional associations)’ (Newmann, Marks & Gamoran 1996, p. 287, emphasis added). The Dynamic Paradigm of Learning and Change recognises that those being inducted into a society or organisation need to be familiarised with certain ways of seeing and doing things, and that the society has a legitimate role in identifying those things (Construct 6). The Dynamic Paradigm also recognises that the individual is not the only valuable reference point in creative and critical meaning making (Constructs 4 and 9). However, the Dynamic Paradigm does highlight the essentially *purposeful* and *individual* nature of human learning, knowing and agency (Constructs 1, 2, 3, 4, 5, 9, 10, 11, 12, 13, 14 and 15). It also identifies the potentially negative consequences of an emphasis on mastery of abstract ‘bodies of knowledge’ and culturally endowed meanings (Constructs 7 and 8), and of the imposition of *arbitrary* authority (Constructs 5).

5.1.2 Authentic Pedagogy

The CORS team argue the need for a conception of authentic pedagogy that ‘posits standards of intellectual quality rather than teaching techniques or processes as the central target of innovation’ (Newmann, Marks & Gamoran 1996, p. 281). They view pedagogy as ‘a combination of teachers’ daily instruction and their assessment tasks’. The Dynamic Paradigm suggests this is too narrow a view of pedagogy. Included in the significant influences on student learning that are, at least to some extent, under a teacher’s control, and therefore part of their pedagogy, must surely also be the conditions and contexts for student activity, and the patterns of authority and control that characterise a teacher’s interactions with students. That the CORS researchers do not recognise these factors as significant aspects of pedagogy is surprising, since, consistent with Constructs 3, 4, 8 and 10 of the Dynamic Paradigm, they cite the observation by Resnick et al. (1991) and Steffe and Gale (1995) that students ‘construct meaning largely in response to rewards and sanctions in the sociocultural context’ (Newmann, Marks & Gamoran 1996, p. 286), and they acknowledge that how students make sense of what they encounter ‘depends much on their own experience and the nature of social interaction that surrounds the presentation of information and its later expression by the student’ (Newmann, Marks & Gamoran 1996, p. 285). The Dynamic Paradigm suggests that another important omission from the CORS researchers’ view of pedagogy is recognition of the significance of a teacher’s tacit assumptions, conscious philosophy, and personal capacities with regard to learning, knowing, intelligence and relating.

The standards for authentic pedagogy described by the CORS team reflect the principles and emphases described above for authentic academic achievement. For classroom instruction, the standards consist of ‘higher-order thinking’, ‘substantive conversation’, ‘deep knowledge’ and ‘connections to the world beyond the classroom’ (Newmann, Marks & Gamoran 1996, pp. 288-289). For assessment tasks, the standards consist of ‘organisation of information’, ‘consideration of

alternatives', 'disciplinary content', 'disciplinary process', 'elaborated written communication', 'problem connected to the world', and 'audience beyond the school' (Newmann, Marks & Gamoran 1996, p. 289).

The CORS researchers argue that the standards of authentic pedagogy do not insist either on what they refer to as a 'traditional' notion of schooling as involving 'recitation', 'worksheets', 'phonics', 'textbooks' and mastery of 'facts and skills', or on *their* understanding of 'constructivist instruction' as emphasising 'discussion', 'essays', 'whole language', 'primary sources', 'thinking and problem solving' (Newmann, Marks & Gamoran 1996, p. 308). They argue that 'authentic pedagogy articulates standards for intellectual quality that can embrace techniques and goals important to each perspective and hopefully steer debate away from unproductive dichotomies' (Newmann, Marks & Gamoran 1996, p. 308). However, the standards for authentic pedagogy *do not make clear why or how* each of these apparently dichotomous approaches to academic achievement and pedagogy should have place in a program of activity to support student learning. The standards of authentic pedagogy do, indeed, seem to steer debate away from the dichotomy, not by clearly theorising it and showing how it can be resolved or transcended, but by largely ignoring its existence. Given the 'traditional' assumptions many educators would have about teaching, learning, schooling and so forth, failure to explicitly address the issue of a dichotomy of so-called 'traditional' and so-called 'constructivist' approaches is likely to send a message that leads to a much impoverished form and experience of 'authentic pedagogy' for many teachers and students.

The Dynamic Paradigm of Learning and Change makes explicit the nature of the logical dichotomy central to concerns about learning, knowing, pedagogy and agency. It makes clear that the dichotomy is *not* one between 'traditional' and 'constructivist' perspectives. The interpretations of, and statements about constructivism by the CORS researchers, highlight the problem that the divergent ways in which the term 'constructivism' has come to be defined, 'understood' and

used, not only limit its value to us, but make it a term that may actually contribute greatly to confusion. *No* meaning is passively received, either through the senses, or by way of communication. This includes the abstract definitions and ‘bodies of knowledge’ that ‘traditional’ educational approaches focus on. While it is problematic that we may be conditioned to ‘see’, think and act in stereotyped patterns due to these culturally ‘endowed’ meanings, nevertheless, they are and have always been *constructed* by each individual, if in a relatively unconscious manner. The Dynamic Paradigm suggests it is helpful to think of *all* meaning as being individually constructed meaning. ‘Traditional’ notions of objective knowledge are *not* dichotomous with the understanding that individuals construct meaning out of their interaction with the world, though the latter challenges the former in important ways. It is more viable to think of the logical dichotomy as being between objectivity and *subjectivity*, external and internal loci of control, society-centred and student-centred education, the need for cultural continuity and the value of the creative autonomy of individuals. The understanding that individuals construct meaning *out of their interaction with the world* is not part of the dichotomy, but of its resolution. When ‘lived’, the constructs within the Dynamic Paradigm resolve the dichotomy, which is only ‘logical’ in nature.

Efforts need to be made to focus teachers’ attention on the existence and nature of the object-subject dichotomy, and to challenge and assist them to experience the action scheme change necessary for achieving an authenticated understanding of *why* and *how* that ‘logical’ dichotomy needs to be resolved in particular approaches to student learning and teacher pedagogy. The Dynamic Paradigm of Learning and Change shows how the dichotomy between subject and object can be embraced, accommodated and transcended. Indeed, it is out of the complexities of this very dichotomy that a profound simplicity emerges, in the form of insight into the deepest kind of human intellectual quality. This insight consists in the liberating realisation that, while we live *with* and *through* particular definitions, texts and contexts, at many different levels on a hierarchy of action schemes (perceptual and control systems), our individual identity *transcends* these constructs. This kind of

intellectual quality consists in the functional realisation that definitions, texts and contexts are not fixed or final, in the psychological agility to shift attention spontaneously from one frame of reference to a normally unrelated one in order to make *new and more viable constructions of our experiential world*, and in the conviction, born of experience, that we human beings are creative, evolving agents, who can transform ourselves and the world (Constructs 10, 11, 12, 13, 14 and 15).

The CORS researchers state that they constructed specific standards for authentic pedagogy in order ‘to ascertain the degree of authentic pedagogy and student performance in schools’ (Newmann, Marks & Gamoran 1996, p. 288). They found that ‘even in restructured schools, pedagogy was rarely rated at the higher levels of our standards’ (Newmann, Marks & Gamoran 1996, p. 296). While they did observe a ‘strong empirical relationship between these standards of quality and authentic student performance’, they nevertheless recognise the distinction between correlation and cause (Newmann, Marks & Gamoran 1996, pp. 305-306). They state that the matter of ‘how to enhance authentic pedagogy’ is a different matter to the description of standards for authentic pedagogy for observation purposes (Newmann, Marks & Gamoran 1996, p. 306). They acknowledge that,

We have not shown that interventions that deliberately set out to use these standards will boost student performance. On the other hand, the robust relationship between authentic pedagogy and student performance suggests reasonable grounds for working toward more deliberate use of the standards (Newmann, Marks & Gamoran 1996, p. 305-306).

Indeed, they do suggest that ‘standards of this sort might be useful in helping the profession move beyond the adoption of techniques and procedures as the focus for innovation’ (Newmann, Marks & Gamoran 1996, p. 305), and might be used ‘to guide classroom practice’ (Newmann, Marks & Gamoran 1996, p. 288).

I have shown above that the inadequacies of the CORS standards for authentic achievement and standards for authentic pedagogy lie more in their emphases than in any invalidity. As an observational tool in the hands of a person who ‘sees’

through the Dynamic Paradigm, those standards could be a valuable aid to research. In the hands of a person who sees the 'world' through the traditionally dominant paradigm of school culture, the standards would lead to very different and problematic definitions and ratings of observed practice. Similarly, the standards for authentic pedagogy will be inadequate as a guide to innovative pedagogy.

While the standards are a significant improvement on the focus of many innovations on techniques and strategies, they are, nevertheless, inadequate as a guide to pedagogical change. Just as the adoption of techniques and strategies will reflect each teacher's experience, assumptions and philosophy, any adoption of the standards for authentic pedagogy will also be selective and interpreted through the lens of each teacher's assumptions about students, learning, knowing, and so on. This point is well illustrated by my description, in Chapter 1, of the negligible changes in teacher pedagogy in Queensland state schools following several years of focus on identified principles of effective learning and teaching. I have shown above that the CORS researchers give insufficient recognition to the significance, process, conditions and individual nature of action scheme change in students. Not surprisingly, these things are also largely overlooked in relation to promoting change in teacher pedagogy. The Dynamic Paradigm of Learning and Change makes clear the need for, and the means of, teachers' and students' action scheme change around ways of thinking, acting, learning, teaching, relating and being, as the basis of any significant process of educational renewal focused on pedagogy and student learning outcomes.

The CORS researchers sought to understand what other conditions tend to boost student achievement. They concluded (Newmann & Wehlage 1995a, p. 1) that successful school restructuring must be clearly focused on four key factors, represented schematically in Figure 9, below.

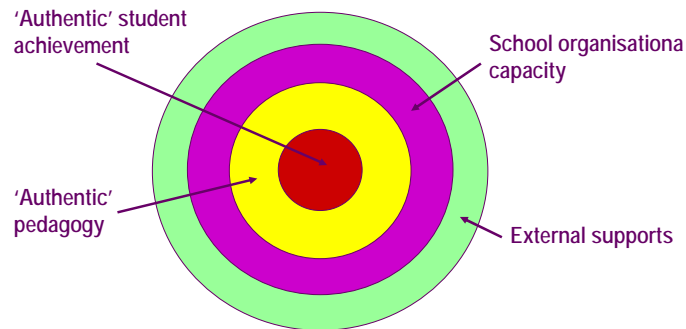


Figure 9: CORS' four key factors in successful school restructuring

5.1.3 School organisational capacity

The CORS researchers found that, in 'successful schools', a wide variety of school structures and practices, 'including curriculum development, instruction, assessment, scheduling, staff development, hiring and student advising', are directed towards clear goals for high quality student learning, which are agreed upon by teachers (Newmann & Wehlage 1995a, p. 1). They identify some particular conditions and structural changes which, 'when combined with professional skills, leadership and trust', can build the capacity of a school's staff to 'work well as a unit' (Newmann & Wehlage 1995a, pp. 2-3):

- Shared governance that increases teachers' influence over school policy and practice.
- Interdependent work structures, such as teaching teams, which encourage collaboration.
- Staff development that enhances technical skills consistent with the school's mission.
- Deregulation that provides autonomy for schools to pursue a vision of high intellectual standards.
- Small school size, which increases opportunities for communication and trust.

- Parent involvement in a broad range of school affairs.

Conspicuous by its absence from this list, from the perspective of the Dynamic Paradigm of Learning and Change, is recognition of the need for appropriate kinds of teacher learning experiences that focus on coherent and viable theory, and on action scheme change regarding the constructs within the Dynamic Paradigm, rather than just on ‘technical skills’. The researchers do note that, ‘The most promising examples of strong organizational capacity were found in schools that began with a well-defined mission, the authority to hire staff consistent with the mission, and effective leaders who kept the school on track’ (Newmann & Wehlage 1995a, p. 3). My experiences during the period of this study, and the Dynamic Paradigm, strongly support the significance of those observations. However, they highlight the non-viability of certain simplistic approaches to the achievement of a so-called ‘shared vision’ of pedagogy and quality student learning. They highlight also the need for strong leadership grounded in a defensible and personally authenticated theory and vision, and the provision of appropriate and authentic ‘limits’ to support teacher learning and school management consistent with that theory and vision.

5.1.4 External support

The CORS researchers observe that schools are subject to many external influences and pressures. External agencies can help schools focus on improving student learning, they argue (Newmann & Wehlage 1995a, p. 3), in three particular ways:

- Setting standards for learning of high intellectual quality.
- Providing sustained, schoolwide staff development.
- Using deregulation to increase school autonomy.

Each of these descriptions of ‘support’ is so general, however, that it is easy to imagine them being provided in ways quite *inconsistent* with the Dynamic Paradigm, such that they would inhibit, rather than improve, schools’ capacity to fully implement the intent of defensible innovations. The CORS researchers do emphasise that, ‘sometimes external influences pull schools in different directions,

impose unreasonable regulations, and instigate rapid shifts in policy and leadership, all of which can undermine organizational capacity' (Newmann & Wehlage 1995a, p. 3).

5.1.5 Promotion of Authentic Pedagogy in Queensland state education

In 1998, Education Queensland's program of reform included a shift to school based management, and began with the initiation of the Leading Schools program. In this context, they drew heavily on the CORS work on four key factors in successful school restructuring, described above. They explicitly promoted the CORS work as a *guide* to 'effective school restructuring that delivers "authentic pedagogy" [and] can improve learning outcomes for all students' (Department of Education 1998a, p. ii).

From the perspective of the Dynamic Paradigm of Learning and Change, serious inadequacies can be clearly identified in Education Queensland's promotion of authentic pedagogy. These inadequacies are consistent with the inadequacies identified above in the CORS approach to developing school organisational capacity to support 'authentic pedagogy' and 'authentic academic achievement'.

Education Queensland characterised 'authentic pedagogy' in a way that seems inconsistent, in both its articulation and its intent, with the CORS researchers' use of that term. In the newspaper that goes to all its teachers, Education Queensland (Department of Education 1998a, p. ii) suggested that the CORS researchers, characterised authentic pedagogy as teaching and learning that is:

- meaningful;
- valuable;
- significant;
- worthy of one's efforts;
- entailing extrinsic rewards;
- meeting intrinsic student needs;
- providing students with a sense of ownership

- having a connection to the real world; and
- fun.

Education Queensland (Department of Education 1998a, p. iii) referenced this citation in text as ‘Newmann 1995’, even though they included two ‘Newmann 1995’ sources in their reference list (referenced in this thesis as Newmann & Wehlage 1995b, and Newmann, Marks & Gamoran 1995). However, in neither of those two references is authentic pedagogy described as having the above characteristics *as a set*, and there appears to be no reference to items 5, 6, 7 or 9, specifically. Moreover, the above set of characteristics suggests a strong emphasis on students’ perceptions of learning and teaching, an emphasis *not* found in the references cited by Education Queensland, or in the work of the CORS researchers, as discussed above. Indeed, it is teaching and learning with these characteristics, but lacking the standards the CORS researchers specify for authentic academic achievement, that those researchers saw as problematic.

Education Queensland (Department of Education 1998a, p. ii) also mentions the CORS researchers’ finding that student learning improved through school restructuring that encompassed:

- instruction focusing on construction of knowledge;
- disciplined inquiry by students;
- student activities and assessment which have value beyond school.

Beyond this brief and problematic characterisation of the learning and teaching implications of ‘authentic pedagogy’, Education Queensland’s promotion of authentic pedagogy emphasised only very general organisational and ‘structural change’ (Department of Education 1998a, p. ii). This included suggesting the need for building a ‘school wide organisational capacity to deliver authentic pedagogy’ (Department of Education 1998a, p. ii) through:

- involvement of competent individuals;
- directing staff and students’ efforts toward a well defined, commonly shared and powerful vision;

- valuing and creating opportunities for collaborative teaching efforts and professional development; and
- taking collective responsibility for student learning.

Education Queensland (Department of Education 1998a, p. ii) also argued the value of schools receiving external support, including:

- setting standards for learning of high intellectual quality;
- providing whole of school professional development;
- devolving authority to increase autonomy; and
- encouraging parental support and involvement.

In the absence of any more explicit guidelines for revising theoretical assumptions and practice in support of improved student learning, it was left to schools to ‘begin to address challenges and construct models around which change can occur’ (Department of Education 1998a, p. ii).

Education Queensland (Department of Education 1998a, p. ii) argued that, ‘Authentic pedagogy is not just rhetoric’. But *from where* was a ‘well-defined... and powerful vision’ to come? And what *means* were to be employed in trying to make such a vision ‘commonly shared’? Without clear guidance in response to these questions, to what *end* would the other listed aspects of organisational change and external support be directed, and how would they constitute more than rhetoric? Conspicuous by its absence from this ‘unique model of school based management’ for ‘linking structural change to pedagogical change’ (Department of Education 1998a, p. ii), from the perspective of the Dynamic Paradigm of Learning and Change, is any recognition of the need for teacher professional learning that is *focused on coherent and viable theory, and on teachers’ conceptual/action scheme change* regarding the constructs within the Dynamic Paradigm. Those constructs suggest the inadequacy, for significant teacher learning and change, of increased levels of school ‘autonomy’, ‘collaborative teaching efforts’, and ‘collective responsibility’ for ‘high intellectual quality’. As Fullan (2001, p. 269) recognises,

To know that teachers thrive best in learning communities is... fatal if you pursue a strategy based on that assumption, when the starting point is that only 20% of teachers and principals have the capacity to act that way.

Some schools have opted to become involved in the Innovative Designs for Enhancing Achievements in Schools (IDEAS) Project, developed jointly by Education Queensland and the University of Southern Queensland. The vision for IDEAS has been '*to inspire IDEAS schools to engage in journeys of self-discovery which will ensure they achieve sustainable excellence in teaching and learning*' (Andrews et al. 2004, p. 6). It is beyond the scope of this thesis to conduct a detailed critique of the IDEAS Project. However, one significant issue is particularly relevant to this inquiry.

The IDEAS perspective on the issue of pedagogy evolved from an early emphasis on Authentic Pedagogy (University of Southern Queensland & Education Queensland 1998, pp. 2, 7-9), through School-Wide Pedagogy [Field Journal Extract: 14/12/2000], to 3-Dimensional Pedagogy (Andrews et al. 2004, pp. 8, 14-15). The IDEAS team emphasises that development of teachers' 'personal pedagogical self' and development of a 'shared understanding' of School-Wide Pedagogy, 'reflecting the school's vision' and 'drawn from teachers' most successful practices', should occur as teachers 'explore the potential of relevant authoritative theories of teaching and learning' (Andrews et al. 2004, pp. 13-15). The theories emphasised are 'authentic pedagogy, productive pedagogy, teachers' practical theories' (Andrews et al. 2004, p. 14). To the extent that teacher learning is focused on *these* 'theories', rather than on the need, nature and means of student and educator learning and change suggested by the Dynamic Paradigm, limitations identified above in critique of authentic pedagogy and the dominant culture of schooling, and below in critique of the productive pedagogies, apply also to the IDEAS Project. Projects like IDEAS may indeed enhance certain teacher and student achievements, and lead to some 'school revitalisation' (Andrews et al. 2004). They do not, however, represent the required paradigm change in education.

The *relative* shallowness of the IDEAS vision and challenge to teachers and school leaders is betrayed by Crowthers' assertion (Andrews et al. 2004, p. 3) that, 'We now know that our Australian education system is in fact world-class'.

The Dynamic Paradigm highlights the non-viability of the simplistic approach, implied in Education Queensland's promotion of authentic pedagogy, to the achievement of a so-called 'shared vision' of authentic pedagogy and quality student learning. It also highlights the need for specific kinds of professional learning for leaders, focused on a defensible and personally authenticated theory and vision, so that they might be able to provide strong leadership and promote appropriate teacher learning and school management consistent with that theory and vision.

Education Queensland (Department of Education 1998a) did not show *why* or *how* teachers' existing visions and conceptions of learning and teaching may be inadequate. Nor did they emphasise teachers' conceptions of learning and teaching as things that might need to change, in order to achieve authentic pedagogy. Their change emphasis (Department of Education 1998a, p. ii) was quite different:

We may question how is authentic pedagogy any different from what schools and teachers are currently doing today? For some, it may not involve radical change. For others where teaching has been an isolated, non sharing profession, where teachers are left to 'get on with the job' without support, where the four walls of a classroom are their security, where professional development is not considered important, where student and self monitoring, review and assessment are not practised, where parental involvement is not encouraged, where top-down, authoritarian structure exists within the school, and where participative decision making is not valued... the change will be quite significant.

These oversights are particularly important for three reasons. Firstly, everything teachers do is based on a theory. If nobody points out how and why teachers' current theory is non-viable, they won't change it. If teachers do not change their

theory, they will not change their practice in any significant way. Secondly, if teachers do not see that a policy change is grounded in defensible theory, they will not see it as having great significance. Thirdly, if teachers see that challenging policy pressures on them to change amount to rhetoric and the exercising of *arbitrary* authority, they will respond with counter-control. For example, in 1997 and again in 1998, I was present as two school principals in different parts of Queensland attempted to outline to meetings of teaching staff aspects of the *Leading Schools* change agenda, and their implications for teachers. One of these meetings involved showing a video of the Director-General of Education explaining the new policy. On both occasions the messages were met by cynical and wild whooping and hollering and raucous laughter, to such an extent that one principal abandoned his verbal presentation and the other switched off the promotional video mid-way through. When teachers see challenging change agendas as not being driven by sound theoretical insights, but rather by political motives and rhetoric, they are likely to resist them, or even subvert them.

As it happened, following a change of state government in December 1998, Education Queensland's *Leading Schools* policy and its focus on 'authentic pedagogy' were abandoned (with the exception of continued endorsement of the IDEAS Project). A new educational change agenda was launched in the form of the *Queensland State Education – 2010* vision, including a focus on the New Basics Project, led by specially appointed Deputy Director-General of Education Queensland, Professor Allan Luke.

5.2 THE NEW BASICS PROJECT

The New Basics Project builds on the CORS work on school restructuring (Luke et al. 2000), and clearly represents a school renewal framework broader in scope and richer in texture than the CORS work. The New Basics Project also contains elements consistent with the Dynamic Paradigm of Learning and Change. However, it too has certain inadequacies in conception and implementation in

relation to the Dynamic Paradigm. These include problems of emphasis, omission, and mixed messages.

The New Basics Project was ‘*not* a project in curriculum reform *per se*’ (Luke et al. 2000, p. 35), but ‘a project in school renewal and improvement with a focus on pedagogy’ (2000, p. 36). It sought to orchestrate ‘the “message systems”’ (Bernstein, 1990) of curriculum, pedagogy and assessment to produce improved educational outcomes’ (Luke et al. 2000, p. 5) (see Figure 10).

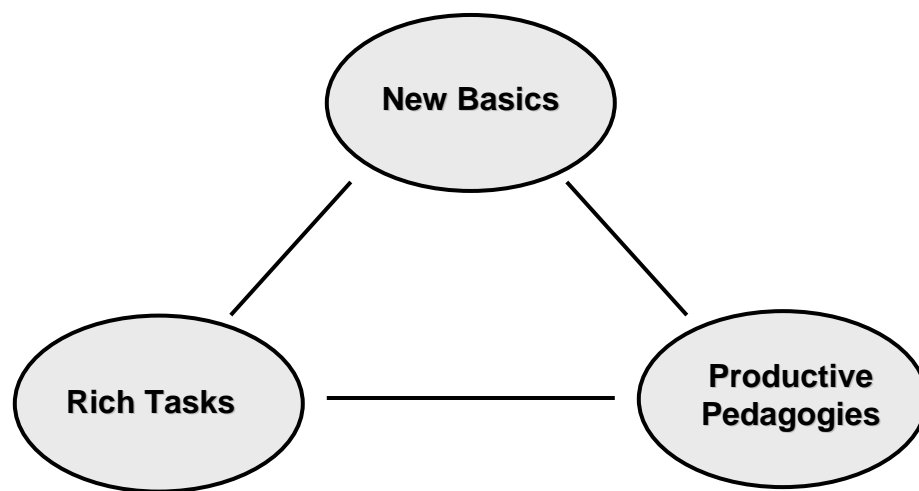


Figure 10: Conceptual pivots for the New Basics Project (after Luke et al. 2000, p. 38)

The New Basics Project is based on ‘five fundamental educational premises’. These are the ‘Futures’, ‘Research’, ‘Equity’, ‘Pedagogy’ and ‘Professional Learning Community’ premises (Luke et al. 2000, p. 6).

5.2.1 The Futures Premise

The Futures Premise says that educational outcomes should be ‘futures oriented’ (Luke et al. 2000, p. 6). Luke et al. (2000, p. 9) argue that the ‘QSE 2010 philosophy of education’ stresses preparation of diverse students to participate ‘productively in the Queensland economy’, and to engage ‘constructively and critically’ with ‘rapid social and cultural change’). They attempt to specify the ‘blends of knowledges, skills and competencies needed... [in] new economies, new

social institutions and increasingly diverse Queensland communities' (Luke et al. 2000, p. 9).

The new work order involves not only skills in high-tech and print literacy, but also skills in verbal face-to-face social relations and public self-presentation, problem identification and solution, collaborative and group capacity and so forth. These are the New Basics, and they extend considerably beyond traditional versions of the '3Rs'. (Luke et al. 2000, p. 10.)

Luke et al. (2000, pp. 11-12) argue that new technologies and communications media, the emergence of new industries and the disappearance of old ones, and rapid flows of population, place unprecedented demands on identities of all kinds, and on our ability to deal constructively with change. It is such pressures, they argue, that make problematic the 'current contents and practices of students' and teachers' work in classrooms' (Luke et al. 2000, p. 12). Hence, their Research Premise, which involves an examination of those current contents and practices (Luke et al. 2000, p. 12).

While there may be some reason to dispute the consistency or universality of this futures vision, it would seem to have some validity as a generalisation. The Dynamic Paradigm of Learning and Change, however, makes a different and deeper argument for educational experiences that support the kinds of attributes and capacities identified by Luke et al. The Dynamic Paradigm makes clear that change is not a characteristic peculiar to a predicted future, but is, and always has been, an existential reality of human life. Moreover, the Dynamic Paradigm makes explicit the connection between change, the essential nature of human learning, human identity, and the conditions, contexts and forms of action most conducive to making change and learning productive for individual and society.

The problem with the Futures Premise goes deeper, however. In espousing a 'normative futures orientation' (Luke et al. 2000, p. 14) to the design and

management of educational tasks, the New Basics Project perpetuates two, related and long-standing, but non-viable assumptions in education. One relates to the ‘futures’ aspect, the other to the ‘normative’. The first flawed assumption is that education is *primarily* about preparation for a remote future – a means to an end, rather than *being* an end. Of course, most programs of formal learning have always been and will always be in some sense a preparation for the future. However, the Dynamic Paradigm in general, and Constructs 3, 4 and 10 in particular, make clear that human learning, knowing, expression and action are essentially purposeful and adaptive in relation to *present* aims and contexts.

The second non-viable assumption is that school education is primarily about students doing what society demands of them and taking on the identities it creates for them. This authoritarian view is a social constructivist/behaviourist perspective that reduces persons to things – commodities to be processed, objects to be moulded. The New Basics team questions whether ‘the students’ belief that the work is irrelevant is necessarily valid’ (Department of Education 2000a, p. 4). The Dynamic Paradigm of Learning and Change acknowledges the significance of authentic external constraints (Constructs 4, 5 and 10) and the legitimacy of a ‘demand’ that the young engage with certain culturally valued practices and perspectives (Construct 6). It also recognises the likelihood of some resistance to any demands or evidence that significantly challenge people’s existing action schemes (Construct 4). Ultimately, however, we learn when the individual appreciates a need for learning. The Dynamic Paradigm in general, and Constructs 4, 5, 10, 11, 12 and 13 in particular, make clear that human learning, knowing, expression and action are essentially *individual, creative and adaptive* functions, not normative ones. It is only when these functions are clearly *seen* to be individual, rather than normative, that we can enjoy the liberating realisation that our identity transcends particular definitions and contexts.

The New Basics development team go so far as to emphasise that ‘this is “tough love”’ (Department of Education 2000a, p. 4).

[T]here is no sense of having students negotiate the curriculum. ...Our challenge is not to gratify the needs of students, but to question the purpose of our curriculum choices. ...[I]t is important that the New Basics Framework does not translate into a Progressivist educational agenda. (Department of Education 2000a, pp. 4-5)

This is somewhat ironic, since the concept of the Rich Task is claimed to be partly drawn from the 'models of Dewey... and Freire' (Luke et al. 2000, p. 8). As was shown in Chapter 3, Freire contrasted the 'false educator' with the authentic educator, who problematises for learners real, concrete, *existential situations relating to an act*, 'in order to act better together with others *within the framework of reality*' (Freire 1976, p. 152, emphasis added).

The term 'Progressivism' itself, is most often associated with Dewey. Luke et al. (2000, p. 51) claim that 'Dewey's theory of learning is that people optimally learn and human development and growth occur, when they are confronted with substantive, real problems to solve'. However, the Dynamic Paradigm of Learning and Change makes clear the important distinction between a situation that is perceived as problematic in relation to the aims or purposes of an individual or group, and a 'problem' imposed by arbitrary authority (Constructs 5 and 10). As I mentioned in Chapter 3, Dewey (1916, p. 129) himself makes the distinction, emphasising that, 'the currency of these externally imposed aims is responsible for the emphasis put upon the notion of preparation for a remote future and for rendering the work of both teacher and pupil mechanical and slavish'. Luke et al. (2000, p. 51) are quite explicit about why they adopt a normative approach and reject *their interpretation* of a 'Progressive educational agenda'. The reason is that they place a 'strong emphasis on rigour, [and] accountability' (Luke et al. 2000, p. 51). This emphasis is in conflict with the assumption, which Luke et al. appear to share with the CORS researchers, that meanings constructed by students are 'completely idiosyncratic' (Newmann, Marks & Gamoran 1996, p. 286). Consequently, the New Basics Project places a 'strong emphasis on... teacher knowledge and expertise' (Luke et al. 2000, p. 51).

A further theoretical inconsistency exists between this rather authoritarian perspective on knowledge with its rejection of curriculum negotiation on the one hand, and the theoretical rationale given for the Productive Pedagogies component of the New Basics triad on the other. In the latter, feminist and indigenous analyses of curriculum, emphasising ‘negotiable and fluid knowledge’ and ‘non-given knowledge’ respectively, are offered as the rationale for the ‘knowledge as problematic item’ (The School Reform Longitudinal Study Research Team 1999, pp. 4-5).

5.2.2 The Research and Equity Premises

Luke et al. (2000, pp. 14-26) draw on the findings of a number of research studies in order to evaluate ‘the current pedagogical context in Queensland state schools’ (p. 14). Their commentary on such research findings also addresses the nature of the Equity Premise.

Luke et al. (2000, pp. 14-19) discuss the 3-year School Reform Longitudinal Study (SRLS) begun by Education Queensland in 1998. They explain (Luke et al. 2000, p. 14) that,

The SRLS is an analysis of the effectiveness of school-based management in making a difference to student achievement, a claim contested in Victorian studies (Caldwell, 1998; Caldwell & Spinks, 1998) and New Zealand studies (Thrupp, 1999).

Luke et al. (2000, pp. 14, 16) point out that the SRLS ‘replicates elements of, and uses instruments from’ the CORS work, discussed above, and ‘provides a broad description of current classroom pedagogic practices in Queensland schools’ based on intentional sampling of schools and lessons regarded as ‘innovative exemplars’. They highlight the CORS finding that,

high levels of authentic pedagogy – specifically intellectual engagement and connectedness – enhance student achievement on both conventional measures (e.g. standardised achievement tests, overall achievement levels)

and alternative measures (e.g. moderated teacher assessment of student written work)... [for] both mainstream and equity target groups. (Luke et al. 2000, p. 16)

Luke et al. (2000, p. 17) argue that the 'key finding' of the SRLS was relatively low levels of the proxy measures for Newmann's authentic pedagogy criteria of intellectual quality and relevance, across both schools and subject areas.

Based on the classroom lessons observed and student work assessed, efforts for improvement in classrooms should focus on such matters as analytic depth; intellectual challenge and rigour; critical thinking; critical literacy and higher-order analysis; and dialogue. Also lessons and student work need to be more connected to student cultural background; knowledge; problem-based learning; and the world's of work, citizenship and community life.

A second study discussed by Luke et al. is a Queensland study by Freebody et al. (1996). It involved functional linguistic analysis of classroom pedagogy, and interviews of teachers and caregivers, in order to study early literacy practices of lower socioeconomic students in 300 state and non-state school classrooms. Luke et al. (2000, p. 19) note the study's finding that 'many of the contexts set up in the classroom for learning content were not closely related to a focused set of learning objectives'. The study also found that,

To be seen as a good reader and writer, a student needs to display knowledge of text, procedure, appropriate role, correct timing of responses, and a sophisticated understanding of conventions for sequentially building knowledge and skills in the classroom. (Luke et al. 2000, pp. 19-20)

Luke et al. (2000, pp. 19-20) point out that, consequently, where 'learning objectives are blurred', and where the 'social and linguistic procedures' characteristic of the context for learning are not familiar or understood, 'students whose cultural or social background is different from that of the teacher' may find learning difficult.

Luke et al. (2000, p. 23) also discuss a number of studies that challenge the ‘contestable assumption in much school-level planning... that preparation for futures will be dealt with through systematic approaches to technology education’. The studies they cite (Luke et al. 2000, pp. 24-25) show that information and communications technologies are still largely being adapted to conventional approaches to teaching (e.g. Bigum et al. 1997; Comber & Green 1998). Luke et al. conclude (2000, p. 25) that,

Without a major reframing of the technology push within a larger reorientation to pedagogy and curriculum, the danger is that schools will simply import and adapt the pedagogical problems identified by the SRLS (1999 [reference not provided]) and Freebody *et al.* (1996) into IT environments.

Luke et al. (2000, p. 26) argue that the only way to resolve problems associated with the Futures, Research and Equity Premises, is through a ‘trial strategy’ based on the Pedagogy and Professional Learning Community Premises. The research findings discussed by Luke et al. in establishing Research and Equity premises are certainly significant. However, relative to the Dynamic Paradigm of Learning and Change, certain aspects of emphasis and interpretation of these research findings weaken the Research and Equity Premises. Consequently, the Premises proposed for their solution are also weakened.

The SRLS finding that only low levels of the Productive Pedagogy strategies were evidenced in the practices of teachers regarded as ‘*innovative exemplars*’ (Luke et al. 2000, p. 16, emphasis added) suggests that the problem is not related to teacher quality. Rather, it clearly concerns the pervasiveness of the *assumptions* that individual teachers have about the nature of human learning, knowing, acting, teaching, and pedagogical relationships.

The findings of the Freebody study that were identified above, suggest that most teachers do not have a viable conception of human learning, particularly regarding the Dynamic Paradigm constructs relating to the significance of contexts, of purposeful action, and of the role of authentic constraints in the individual construction and reconstruction of meaning. Rather, the observed practices of students and teachers, as well as the ‘continued prevalence of deficit explanations of student performance that focused on cultural and social class stereotypes’ (Luke et al. 2000, p. 19), suggest teachers’ practices are based on non-viable assumptions about knowledge and skill as being objective and transmissible, rather than as being the outcome of specific, individual processes of construction and reconstruction.

These non-viable assumptions relate essentially to human learning. This suggests that the disadvantage to individuals or groups of different backgrounds, caused by practices based on these assumptions, is a relative matter. *No student* achieves quality learning and development in conditions characterised by these assumptions and practices, and Chapter 4 elaborates some of the deeper ramifications and negative effects of such schooling that suggest a more profound reason for educational reform. Luke et al. (2000, p. 23) suggest that, ‘The Equity Premise should direct our attention particularly to those students coming from communities and regions hit hardest by the economic and social scenarios described in Section 1.1 [the Futures Premise]’. However, statements of this kind send the wrong message. They come close to falling into the trap of the ‘deficit ideology’ (Luke et al. 2000, p. 20), not because they attribute lower achievement to lack of capacity, but because they suggest the need for different treatment, or, more deeply, for different theory in relation to target groups. Such a suggestion would miss the point.

This is *not* to say that concern about relative levels of disadvantage is not legitimate. However, the issue is not essentially a matter of equity, but of non-viable assumptions about human learning generally. The Dynamic Paradigm takes the significance of ‘critique’ deeper than class, gender, race and other ‘group’

struggles, to the individual nature of, and responsibility for action scheme construction and reconstruction. Where learning environments and experiences and pedagogical practices are characterised by the constructs of the Dynamic Paradigm, *because teachers' action schemes and identities have come to be characterised by them* through significant learning and authentication, then *each* student is likely to prosper in learning and action, regardless of social or cultural background.

The observation that ICTs are still widely used to support traditional approaches to teaching suggests that, as I argued in Chapter 2, the ways we use technologies are simply 'mirrors of minds' (Pea & Sheingold 1987, p. x). Schools, student learning tasks and teacher strategies are also technologies. So much research has shown teachers' use of information technologies tends to mirror their minds, and the history of curriculum change is a history of little change, because implementation of innovations tends to mirror teachers' minds (see Chapter 1). Likewise, the likelihood is that school renewal based on encouragement to select combinations of specific strategies for Productive Pedagogy and apply set tasks, without explicit processes of specific and viable theory change, will mirror the minds of teachers and school leaders. The Dynamic Paradigm of Learning and Change suggests the need, nature and means of teacher learning that involves them in changing their minds.

5.2.3 Current state interventions in Queensland

In laying the foundations for their own response to the challenges offered by their Research and Equity Premises, Luke et al. (2000, pp. 28-34) discuss aspects of then current Queensland responses to issues of curriculum renewal and assessment instrument development. They note (2000, p. 28) that the then Queensland Board of Senior Secondary School Studies (QBSSSS) had 6-year, phased cycles of syllabus redevelopment in existing Board subjects, influenced by input from interested stakeholders and education professionals. The then Queensland School Curriculum Council (QSCC) worked with cycles of 15 years for renewal of all Key Learning Area syllabuses (Luke et al. 2000, p. 28). (The QBSSSS and QSCC have since

been combined to form the Queensland Studies Authority.) Luke et al. (2000, p. 29) note also, that every two or three years since the early 1990s Education Queensland has 'intervened' in the curriculum renewal process in 'an attempt to refocus, shift and/or recoordinate an aspect of the system'. Luke et al. (2000, p. 29) raise the question of the 'relationships between these various attempts to reform curriculum, pedagogy and assessment'. They note that, philosophically, statutory bodies are not neutral. However, they do not raise the question of specifically what philosophies of learning and knowing guide the bodies involved in renewal of curriculum, pedagogy and assessment, or whether those philosophies are consistent with each other. They only ask whether there is 'an overall, coordinated and public plan', and whether current systems can 'cope with the Futures Premise' (Luke et al. 2000, p. 29).

Luke et al. (2000, p. 29) argue the inadequacy of current approaches, with their '15-year curriculum development cycles, or 3-5 year trial schedules to develop, renew and propagate among teachers print-based syllabuses'. They first note a claim of sociologists of knowledge that 'human knowledge is doubling each decade' (Luke et al. 2000, p. 29). Their concern then shifts to knowledge becoming more rapidly out of date, due to 'major paradigm shifts within 5-10 year time periods' (2000, p. 30). They point out that such 'Tylerian approaches to curriculum' as those currently adopted in Queensland, are 'useful for state educational systems', because they allow stakeholders to 'weigh in with what they consider to be valuable knowledge' (Luke et al. 2000, p. 30). They also suggest that such approaches to curriculum reform might have suited earlier periods in human history with greater 'stability of a knowledge canon' (2000, p. 30). However, they argue that they are inadequate for responding to the current and projected 'rate of knowledge change' (2000, p. 30).

Despite their expression of concerns about the rate of growth and change of knowledge, Luke et al.s' argument seems to *not* be for incorporating knowledge in curriculum that is *more current*. Luke et al. (2000, p. 35) note that Australian states have made a Tylerian, taxonomic response to the great scope of human knowledge,

listing and enumerating specific skill, process and knowledge outcomes across Key Learning Areas, and leading to a 'further packing out of the curriculum'. The volume and complexity of curriculum documents, they observe, has caused many teachers to be daunted by the multiple framings, categories and subcategories, and to 'selectively read, include and ignore aspects of these documents' (Luke et al. 2000, p. 35).

Luke et al.s' argument for a futures orientation rejects the Tylerian approach, not because it is too slow to incorporate new knowledge, but because it 'by definition tends to reproduce existing categories, knowledges and skills rather than build new ones' (Luke et al. 2000, p. 30). Luke et al. (2000, p. 93) reject approaches to curriculum that 'retain the integrity of each disciplinary methodology, epistemology and canon'. It is noteworthy, however, that the New Basics team conducted an 'audit' of the New Basics Framework, in order to show that students in New Basics schools would 'cover' the same content as students in schools implementing the outcomes based KLA syllabuses (and to show that the New Basics Framework met the requirements of the *Adelaide Declaration on National Goals for Schooling in the Twenty-First Century*) (Department of Education 2001b, pp. i-iv). It was even claimed that the New Basics Framework and the KLA syllabuses constitute 'two equally defensible and viable approaches to curriculum organisation' (Department of Education 2001b, p. ii).

The position of the New Basics team on the question of academic disciplines, subjects and Key Learning Areas is equivocal. On the one hand it asks, 'If so much is needed *across* the curriculum, how effective is the current curriculum organisation in meeting the demands of new skills and knowledges?' (Department of Education 2000a, p. 4). On the other hand, they argue that the operational fields schools use to organise curriculum may just as well be traditional disciplines or Key Learning Areas as New Basics (Luke et al. 2000, p. 97). On the one hand, a high level of the 'Knowledge integration' strategy of the Productive Pedagogies is described as consisting in 'Complete integration of subject area knowledge to the

degree that subject area boundaries are not recognisable' (Department of Education and the Arts 2002a, p. 21). On the other hand, Luke et al. emphasise that 'the Rich Tasks model is not a call for integrated, holistic teaching' (2000, p. 53) and the 'New Basics are not a discarding of disciplines' (2000, p. 37).

The ambiguous position of the New Basics Project in relation to disciplines, Key Learning Areas and New Basics curriculum organisers seems to highlight the significance of a distinction between *what* is 'covered' and *how* it is covered, and to reflect the assertion that 'the New Basics Project is *not* a project in curriculum reform *per se* (Luke et al. 2000, p. 35). Nevertheless, Luke et al.'s argument seems to be a rejection of the inclusion in curriculum of major ways others in our culture *have organised or currently organise* experience (conventional knowledge and practices), *not in favour of the creative and critical construction and reconstruction of meaning and action by students in the present world, using meaning-making, -testing, -expressing and -applying procedures associated with various disciplines*, but rather in favour of a focus on ways others in our culture *anticipate* that students might need to organise their experience as adults in the future (the Futures Premise).

Luke et al. seek to support this argument by citing Pinar's (1975b) 'reconceptualist' argument that 'curriculum not be built from specific behavioural objectives, knowledge or process outcomes' (Luke et al. 2000, p. 30), and Apple's (1982) argument that when it is so-built, it 'tends to fragment, molecularise and disintegrate knowledge and practice, and to deskill teachers (Luke et al. 2000, p. 30). These latter arguments concern understandings about learning, knowing and action that are quite different from assumptions implicit in the Tylerian approach. However, they would have been as relevant perspectives fifty or a thousand years ago as they are now. The Dynamic Paradigm of Learning and Change suggests they are viable and significant perspectives on how curriculum might be conceptualised, organised and enacted. They do not imply that there should be no engagement with

conventional knowledge in curriculum, only that there are important considerations in *how* such engagement is described, enacted and assessed.

Luke et al.'s (2000, p. 30) claim that the 'Reconceptualist Model developed by William Pinar' supports an argument for curriculum focused on knowledges, skills and competencies predicted to be needed in economic and social orders of the future is rather misleading. Pinar (1978, p. 210) argues that inquiry is a 'teleological' and 'an inescapably political as well as intellectual act'. He emphasises the 'politically emancipatory intent' of reconceptualists, and the necessity of a 'fundamental reconceptualisation of what curriculum is, how it functions, and how it might function in emancipatory ways' (1978, pp. 210-211). The politically emancipatory character of Pinar's reconceptualist notions is consistent with the Dynamic Paradigm of Learning and Change, but not, as discussed under 'The Futures Premise' above, with Luke et al.'s (2000, p. 14) 'normative futures orientation'.

In summing up their rejection of a knowledge canon and the Tylerian approach to curriculum, Luke et al. nevertheless reveal the significance of their belief in teachers having 'legitimate epistemological authority' (Luke 1999d), and the lack of emancipatory intent in the New Basics Project.

It is now possible to reconceptualise knowledge not in terms of a stable print canon, but rather in terms of a renewable and criticisable resource that is dynamic, changing in relation to new contexts, *renewed and sustained by teachers and curriculum developers. Teachers' work* in new conditions, then, is less about reproducing the canon, and more about reconstructing and shaping it in relation to contemporary problems and issues. (Luke et al. 2000, p. 31, emphasis added)

Conspicuous by its absence from this statement is any reference to the student's role in constructing and reconstructing meaning and action.

5.2.4 The Pedagogy Premise

'New Basics' refers to four clusters of practices, which Luke et al. (2000, p. 38) considered 'essential for survival in the worlds that students will live and work in':

- **Life pathways and social futures:** Who am I and where am I going?
- **Multiliteracies [sic] and communications media:** How do I make sense of, and communicate with, the world?
- **Active citizenship:** What are my rights and responsibilities in communities, cultures, and economies?
- **Environments and technologies:** How do I describe, analyse and shape the world around me?

These New Basics curriculum organisers are intended to 'assist teachers, curriculum planners and schools to move beyond a defence of status quo knowledges to a critical engagement with new social, technological and economic conditions' (Luke et al. 2000, p. 38).

Three sets of 'Rich Tasks' with 'real-world value' were developed by 'expert panels of teachers and educators' (Luke et al. 2000, p. 38) for completion by students at three junctures in their schooling, Years 3, 6, and 9. For example, Rich Task No. 9, for completion by the end of Year 9, concerns 'Trade and communication', as follows:

Students will show that they are able to report on trade data and the importance of trade to the Australian economy. They identify ways in which a particular trade makes a contribution to both the Australian economy and to the economy of a trading partner. They explore trade information and cultural perceptions to decide on a product that could be exported to, or imported from, a target country. They develop a means of communicating with a specific audience about the product, using a language other than English (either their first language or a second language they are learning) and a small range of visual and written materials to promote the product. (Luke et al. 2000, p. 60)

Each Rich Task is intended to help teachers and schools select ‘valued knowledges’ and ‘cognitive and cultural, linguistic and social skills’ needed for task completion (Luke et al. 2000, p. 38). The New Basics and the Rich Tasks together constitute the ‘core curriculum’, and Luke et al. (2000, p. 38) argue that, ‘Successful completion of the Rich Tasks will verify that students have demonstrated mastery of the New Basics at the requisite level to contend with new cultures and economies’.

Luke et al. define ‘Productive Pedagogies’ as the ‘array of classroom strategies’ that teachers can combine in different ways, according to the ‘different groups of students’ and the different ‘skills and fields’ they are teaching (2000, p. 39). The ‘20 strategies’ that constitute the Productive Pedagogies derive from the School Reform Longitudinal Study (Luke et al. 2000, p. 39). Education Queensland (Department of Education and the Arts 2002a) describes the focus questions for these 20 strategies as follows:

Higher-order thinking: Are students using higher order thinking operations within a critical framework?

Deep knowledge: Does the lesson cover operational fields in any depth, detail or level of specificity?

Deep understanding: Do the work and response of the students provide evidence of depth of understanding of concepts or ideas?

Substantive conversation: Does classroom talk lead to sustained conversational dialogue between students, and between teachers and students to create or negotiate understanding of subject matter?

Knowledge as problematic: Are students critiquing and second-guessing texts, ideas and knowledge?

Metalanguage: Are aspects of language, grammar and technical vocabulary being foregrounded?

Knowledge integration: Does the lesson integrate a range of subject areas?

Background knowledge: Are links with students' background knowledge made explicit?

Connectedness to the world: Is the lesson, activity, or task connected to competencies or concerns beyond the classroom?

Problem-based curriculum: A large problem has been set requiring engagement by students over a number of lessons.

Student direction: Do students determine specific activities or outcomes of the lesson?

Social support: Is the classroom characterised by an atmosphere of mutual respect and support among teacher and students?

Academic engagement: Are students engaged and on task during the lesson?

Explicit quality performance criteria: Are the criteria for judging the range of student performance made explicit?

Self regulation: Is the direction of student behaviour implicit and self-regulatory?

Cultural knowledges: Are non-dominant cultural knowledges valued?

Inclusivity: Are deliberate attempts made to increase the participation of the range of students?

Narrative: Is the style of teaching principally narrative, or is it expository?

Group identity: Does the teaching build a sense of community and identity?

Active citizenship: Are attempts made to encourage active citizenship within the classroom?

The New Basics Project challenges teachers to:

- 'reconstruct educational outcomes' in line with 'major contextual, economic and philosophic imperatives';
- design '3-year, transdisciplinary curriculum plans around the Rich Tasks';
- implement 'authentic assessment and moderated teacher judgement at Years 3, 6 and 9' around the Rich Tasks; and

- select from and use ‘the array of classroom strategies’ referred to as the Productive Pedagogies (Luke et al. 2000, pp. 40-41).

As noted above, the CORS researchers acknowledged the distinction between correlation and cause. They recognised that describing standards of pedagogy for observation purposes is a different matter to the question of how to improve pedagogy (Newmann, Marks & Gamoran 1996, p. 306). Luke et al. do not appear to make this distinction. The 20 strategies of Productive Pedagogy, formulated for classroom observation in the SRLS, are explicitly promoted as the basis for teacher dialogue and practice. Despite certain non-viable emphases in the Productive Pedagogies and New Basics Project, which emerge because ‘knowledge is seen as socially constructed’ (Department of Education and the Arts 2002a, p. 6), the 20 strategies of the Productive Pedagogies do have the potential to provoke significant teacher thought and dialogue about the practices they engage in to support student learning. However, the only criteria offered for selection and use of the Productive Pedagogies are in the form of a suggestion (Luke et al. 2000, p. 39) that teachers:

- ‘read’ the students’ backgrounds, capabilities and contexts;
- ‘read’ and assess the target repertoires and operational fields to be taught;
- assess and apply appropriate strategies from own teaching repertoires.

The Productive Pedagogies nevertheless represent a collection of strategies or ‘technologies’ that are likely to be adopted in ways which mirror teachers’ minds, or, in Perceptual Control Theory terms, in ways determined, perhaps unconsciously, by higher levels of teachers’ perceptual control hierarchies.

The challenge of designing and implementing a curriculum plan to prepare students for rich assessment tasks on a 3-year cycle is a very, very open one, offering huge scope for practices that mirror existing mindsets. The Project designers suggest, for example, that the amount of class time to be spent on Rich Task preparation is at the school’s discretion, though they suggest that ‘on average, between 40 and 60% of class time would typically be spent’ (Department of Education c1999, p. 7). No

recommendation is made regarding how the balance of time might be spent. It is even argued that, ‘while the Rich Tasks themselves are derived from the New Basics... [teachers and schools are able to] map back to their current or revised organisation of curriculum’, and such ‘operational fields’ could be New Basics, Key Learning Areas, traditional disciplines, UNESCO pillars of learning (Delors 1996), epistemic areas (Phenix 1964), multiple intelligences (Gardner 1983), or any other way of organising fields of knowledge that teachers and schools have adopted (Luke et al. 2000, p. 97).

Luke et al. (2000, p. 33) emphasise the need for ‘a philosophical vision and practical plan linking parts of the message system’. The lack of such linkage was a weakness I identified above in the CORS work on Authentic Pedagogy. The CORS researchers argued, for example, that Authentic Pedagogy was compatible with narrow concerns with abstract, formal knowledge (Newmann, Marks & Gamoran 1996, p. 308), with traditional subject areas (Newmann & Wehlage 1995a, p. 2), with traditional techniques (Newmann, Marks & Gamoran 1996, p. 306), and with traditional classrooms (Newmann, Marks & Gamoran 1996, p. 286). The highlighting of the *need* to coordinate the three message systems is an important contribution of the New Basics Project. Nevertheless, claims that the New Basics Project has ‘its own philosophy of learning’ (Luke et al. 2000, p. 41) notwithstanding, the Productive Pedagogies do not represent, nor are they or the other two message systems explicitly informed by, a coherent and viable theory of learning that might adequately guide teachers in addressing the above curricular, pedagogical and assessment challenges. Moreover, the New Basics Project lacks clear and coherent theorising of the kind of person that might justifiably become the guiding goal of reformed school education, which is provided by the Dynamic Paradigm of Learning and Change (especially by Constructs 13, 14 and 15).

5.2.5 The Professional Learning Community Premise

Luke et al. (2000, p. 40) suggest that teachers’ strategies are produced ‘through their pre- and in-service training, through professional exchanges and mentoring’.

They state, rather simplistically in view of the Dynamic Paradigm of Learning and Change, that teachers in New Basics trial schools will ‘experience in-service’ that will help them ‘expand and exchange their array of strategies’ and select strategies that are ‘appropriate for preparing students for the Rich Tasks’ (Luke et al. 2000, p. 40).

The inadequacy of the learning and knowledge theory offered for guiding teachers’ engagement with the curricular, pedagogical and assessment challenges described above is also found in the ‘broad implementation principles’ for a ‘systems emphasis on pedagogy’ and the creation of Teacher Professional Learning Communities (Luke et al. 2000, p. 40). Luke et al. (2000, p. 41) argue that these principles should include ‘shared dialogue about philosophy, aims, communities, and school differentiation’; ‘trailing, development and ownership by teachers in the field of Rich Tasks, curriculum materials and moderation processes’; and ‘establishment of online communities for the exchange of curriculum and pedagogic resources’. They also mention ‘coaching of productive leadership’ through a ‘forum for principals’ (Luke et al. 2000, p. 41), though they do not articulate what they mean by such leadership.

Luke et al.s’ social constructivist view of teacher learning as taking place merely through dialogue, sharing and trialling of tasks and materials is the basis of their optimism regarding the finding of the SRLS that, despite the low incidence of Productive Pedagogy among ‘exemplary’ teachers, nevertheless ‘there is a great deal of quality teaching occurring. In this sense, the professional development resources and expertise for a systemic focus on pedagogy are in the schools’ (Luke et al. 2000, p. 19). However, the Dynamic Paradigm of Learning and Change shows the inadequacy of this view of teacher learning and change. No mention is made by Luke et al. of the need, nature or means of teacher and school leader learning focused on conceptual/action scheme/theory change, of the kind suggested by the Dynamic Paradigm.

Luke et al. (2000, p. 101) cite the observations of Fullan (1992) and Hargreaves (1994b) that confusion, ambiguity and conflict are likely to result 'where top-down structural reforms are implemented too rapidly or with insufficient foresight'. In addition, they observe that a 'climate of change fatigue' is reported by many people in schools, partly resulting from a widespread perception by teachers that educational restructuring is typically politically motivated and impacts adversely on their work (Luke et al. 2000, p. 101). Accordingly, their Professional Learning Community Premise argues that 'the problems facing schools can only be addressed through the engagement with high levels of teacher professionalism and ownership of reform' (Luke et al. 2000, p. 40), where 'top-down initiative and support [are] integrated with bottom-up will towards continuous improvement in the core educational business of teaching and learning' (Luke et al. 2000, p. 101). The onus is placed on teachers in the trial schools to 'provide curriculum planning and classroom instructional solutions around the new basics and rich tasks', with a moderation system providing teachers with 'feedback data on the efficacy of their curriculum and teaching choices in improving student outcomes' (Luke et al. 2000, p. 101).

Luke et al. (2000, p. 102) emphasise that their implementation strategies are considered within the context of an effort to bridge the opportunity presented by greater devolution of control through school-based management, and the aspiration to enhance student outcomes. The New Basics Project implementation design is based on the assumption that more sustainable and profound educational change is likely to be achieved where teachers and school leaders 'begin working and thinking in new ways and discover for themselves that existing school structures and procedures are ill-fitted to the new orientations, and therefore require changing' (Luke et al. 2000, p. 102).

Some more specific 'possible implementation implications' are 'extracted' from Fullan's (1993b) review of educational reform initiatives. Luke et al. (2000, pp. 102-103) suggest that, in his review, Fullan has integrated 'key features of both

cultural and structural dimensions of educational change' by identifying 'eight basic lessons', as follows:

1. You can't mandate what matters
2. Change is a journey not a blueprint
3. Problems are our friends
4. Vision and strategic planning come later
5. Individualism and collectivism must have equal power
6. Neither centralisation nor decentralisation works
7. Connection to the wider environment is critical for success
8. Every person is a change agent.

Each of these 'lessons' is consistent with the Dynamic Paradigm of Learning and Change. However, just as, from the perspective of the Dynamic Paradigm, the New Basics Project lacks a coherent and viable theory of learning, knowing, agency and action to characterise significant student learning, so too do its implementation design and Fullan's (1993b) identification of eight key features of educational change, lack recognition of the need, nature and means of teacher and school leader learning focused on conceptual/action scheme/theory change.

In his more recent book, *The New Meaning of Educational Change*, published since the initial design work for the New Basics Project was completed, Fullan (2001) addresses these matters, most explicitly in relation to what educational change means for the teacher. Fullan (2001, p. 39) notes that educational innovations have at least three dimensions: 'the possible use of new or revised *materials*'; 'the possible use of new *teaching approaches*'; and 'the possible alteration of *beliefs*'. Fullan (2001, p. 39) argues that, for a change to have a chance of influencing outcomes, it 'has to *occur in practice* along the three dimensions'.

Consistent with the Dynamic Paradigm of Learning and Change, Fullan (2001, p. 45) acknowledges that *changes in teachers' beliefs and understandings are essential* to achieving deep and sustained reform. He quotes McLaughlin and Mitra (2000, p. 10) as follows:

The experiences of these three theory-based reforms underscore the point that the relevant “it” that needs to be embedded in practice is not the particular activity structures, materials, or routines of a reform but rather the first principles. The problem for implementation then, is not only teachers “learning how to do it”, but teachers learning the theoretical project ...absent knowledge about *why* they are doing what they’re doing; implementation will be superficial only, and teachers will lack the understanding they will need to deepen their practice or to sustain new practices in the face of changing context.

However, even more deeply than changes in teachers’ understandings and action schemes regarding ‘why’ they might adopt certain practices, or put another way, at still higher levels of teachers’ perceptual control hierarchies, the Dynamic Paradigm of Learning and Change makes clear the nature of what Education Queensland (Department of Education 1998a, p. i) referred to as a new way of ‘being’ required of teachers for them to be ‘central agents’ in ‘a cultural shift’. Constructs 9, 12, 13, 14 and 15 characterise the changes in identity, dispositions and orientations to the world and others required of educators in order for them to be able to assist young people to achieve similar transformational outcomes.

Consistent with the Dynamic Paradigm of Learning and Change, Fullan (2001, pp. 267-269) argues the need for a ‘nonlinear’, iterative process of educational change involving two ‘phases’. In one phase, the ‘incentive system of accountability and professional development’ should focus on priorities, which include educators acquiring ‘a deep theoretical understanding of the first principles of learning’. In the other phase, ‘a capacity-building strategy’ should prepare educators for exploring ‘context-based solutions, which by definition require local problem-solving’. It is a significant weakness of the New Basics Project that the relevant “it” that it seeks to embed in practice and in professional learning is not coherent and viable theory of learning, knowing and acting, but tasks, materials and strategies.

The Dynamic Paradigm suggests that it is this pattern of dynamic interaction between authentic constraints and autonomous meaning making that should characterise students' learning and action, teachers' facilitation of students' learning and action, school leaders' facilitation of teachers' professional learning and practice, and systemic facilitation of school leaders' learning and management of school operations. This approach specifies crucial aspects of a notion of productive leadership. Those aspects are suggested by many of the Constructs within the Dynamic Paradigm and by the Constructs as a set, but are made clear especially by Constructs 9 and 14. The Dynamic Paradigm of Learning and Change makes clear why approaches to school-based management that do not reflect that paradigm are likely to be ineffective in making a positive and significant difference to student learning and development outcomes.

Chapter 6

CONCLUSION: INVESTING IN INTELLIGENCE

6.1 INTRODUCTION

I started out in this inquiry to address two closely related educational problems – whether and how we conceptualise a need for educational change, and the widely observed resistance of school cultures to change efforts. I sought to investigate the apparent lack of a clear, coherent and viable theory of learning, agency and change, capable of making explicit the need, substantive nature and means of educational change, of reconciling *apparent* dichotomies such as society and individual, control and autonomy, and of explicitly informing policies, planning models, professional learning, and new pedagogical practices. In particular, my inquiry sought answers to two questions:

1. What is a viable way to theorise learning and change?
2. What models and guidelines could be constructed, consistent with such theory, that would breathe greater coherence into a diversity of challenges, policies and reform agendas faced by schools, and assist them to engage with change?

6.2 THESIS CONCLUSIONS

In Chapter 2, I have related aspects of the story of my in-context, practical-critical engagement with the discourse, the systemic policies, the literature, and the intellectual and practical challenges associated with my roles in support of educational change, particularly from 1999 to 2003. I have traced the evolution of some of my own thinking and action, which led to the eventual formulation of the Dynamic Paradigm of Learning and Change. In response to the second research question, I have addressed the *pragmatic* norm of validation in Chapter 2 by tracing my in-context development of the Key Abilities Model and associated guidelines and resources, intended to support teachers, school leaders, systemic personnel and others in making sense of, and responding to a diverse set of change agendas, policies and discourses. I have shown in Chapters 2 and 5 how this complex set of

change agendas, policies and discourses lacked a consistent or coherent form or theoretical rationale for the ends to be pursued or the means to be adopted. They did not make clear what was to be changed, why it was to be changed, how it was to be changed, or how apparent contradictions were to be reconciled. Accordingly, in attempting to answer my two research questions within my Education Queensland work/research context, my effort has been to identify defensible, compatible and practical perspectives on educational ends and means where I could find them within that context, and to go beyond that context or generate new ones as necessary.

In a more formal response to the first research question, I reviewed and summarised in Chapter 3 a considerable number of theories, studies and perspectives on human knowing and related notions of human intelligence, creativity, emotion, agency, action and learning. On the basis of this review, I synthesised and formulated a framework for understanding desirable ends and means of education and of change. I have called this framework the Dynamic Paradigm of Learning and Change. It is described on pages 190-196. The Dynamic Paradigm has substantial depth and coherence, according to Kaplan's *correspondence* and *coherence* norms of validation, which I outlined on page 17. In further addressing Kaplan's *pragmatic* norm of validation, which I described on page 18, I argued that the Dynamic Paradigm of Learning and Change is capable of informing both design and critique of systemic curriculum and assessment policies, school organisation and planning models, professional learning and pedagogical practice, and student learning and action.

Having described the Dynamic Paradigm of Learning and Change in Chapter 3, and established its viability according to the *correspondence* and *coherence* norms of validation, in Chapter 4 I built upon this foundation to bring into sharper relief the *need* for educational change. I used the Dynamic Paradigm as a framework to give greater validity, coherence and focus to perspectives in the literature which problematise the prevailing culture of institutionalised education and the prevailing

kind of social character and society. Specifically, the Dynamic Paradigm of Learning and Change, and the literature reviewed in Chapter 4, make it clear that 'old paradigm' views of knowledge and of agency are both theoretically and practically non-viable and unsustainable. Typical assumptions, identities, dispositions and orientations to the world that are largely formed and reinforced through young people's experience of 'old paradigm schooling' are characterised by alienation.

Next, I argued that the Dynamic Paradigm of Learning and Change contrasts with the assumptions reflected in some educational reform efforts recently promoted at system level in Queensland, Australia. In Chapter 5, I used the Dynamic Paradigm as the reference point for a formal critique of two influential reform programs, Authentic Pedagogy and the New Basics Project. From the perspective of the Dynamic Paradigm of Learning and Change, I identified significant limitations in both the conceptualisation and implementation of these reform agendas. In conceptualisation, neither program gives adequate recognition to the problematic nature or causes of conditioning and alienation, to the individually constructed nature of knowledge, to the purposeful nature of meaning making, to the relationship between knowledge and action, to the ongoing processes of intelligent action and knowledge authentication/reconstruction in response to authentic limits, to the nature of human agency, or to the nature of individual identity as potentially transcending definitions, texts and contexts. In implementation, both programs lack recognition of the need for professional learning that is *focused on teachers' and school leaders' conceptual/action scheme change* regarding the constructs within the Dynamic Paradigm, including aspects of their identity, disposition and orientation to others and the world highlighted in Constructs 9, 12, 13, 14, and 15.

The Dynamic Paradigm of Learning and Change clarifies a number of highly significant issues. It makes clear that knowledge is not an objective entity, but a way of making sense of our experience and making viable our action in the world. Learning serves the individual's need for more adaptive or viable functioning in the

world. Accordingly, the primary function of school comes to be understood as providing for the young inspiration, opportunities and support for purposeful doing, and for assisting them in understanding the processes of action scheme change to make such doing more viable. It ceases to be understood as a place for learning *per se*, that is, for learning as an abstract, accumulative process divorced from purposeful action. The Four Curricular Forms, and other elements of the Key Abilities Model, contribute to growth in ‘authentic’ intelligence and enable a dialectical, experiential resolution or transcendence of ‘logical’ opposites, which have kept us bound in unsustainable identities, dispositions and orientations to each other and the world.

The Dynamic Paradigm of Learning and Change also makes clear that ‘adoption’ of new policies, of new models of curriculum organisation, of new learning and assessment tasks, and of new teaching strategies will not, in itself, lead to deep and sustained changes in the ways students experience schooling. The Dynamic Paradigm highlights the need for appropriate kinds of teacher learning experiences that focus on coherent and viable theory, *and on action scheme change* regarding the constructs within the Dynamic Paradigm. It highlights the non-viability of the simplistic approach, implied, for example, in the identification of transformational outcomes and the promotion of new pedagogical strategies, to the achievement of a so-called ‘shared vision’ of quality student learning and teacher pedagogy. It suggests the importance of showing teachers *why* and *how* their existing visions and conceptions of learning and teaching may be inadequate, and of emphasising teachers’ *conceptions* of learning, knowing, agency and teaching as things that might need to change, in order to realise the intent of educational change focused on transformational student outcomes. More deeply, Constructs 9, 12, 13, 14 and 15 of the Dynamic Paradigm of Learning and Change characterise the new way of ‘being’, the changes in identity, dispositions and orientations to the world and others, required of educators, in order for them to be able to assist young people to achieve similar transformational outcomes.

When understood deeply, experientially, the Dynamic Paradigm of Learning and Change brings a liberating realisation that our identity is not fused with particular definitions, texts and contexts, but transcends them. And along with that realisation comes the conviction that, as individuals, we can express and transform ourselves through *creative action* and *conscious selection* of those thoughts, feelings and actions we find viable. This is a most significant insight regarding both the ends and the means of educational change.

6.3 LIMITATIONS OF THE INQUIRY

On page 18, I noted Kaplan's argument that, because there can be a variety of intervening variables in the practical situation which are beyond the researcher's control, demonstration of actual successful application is not a necessary condition of validity of a theory. I referred on pages 63-64 to my proposal to then Director-General of Education Queensland, Terry Moran, for a school trial of a 'Valued Attributes Pedagogy/Curriculum/Assessment Framework' (referred to in the research proposals that soon followed as the 'General Abilities Framework'), which had much in common with, and a few significant differences from the Key Abilities Model into which it eventually evolved. I also reproduced, on pages 64-65, part of the response to my proposal, and noted on pages 65-66 that, despite being given in-principle approval for the school trial, lack of any other form of systemic support made both the trial and the proposed associated research impractical. There certainly were, then, intervening variables in my researcher/practitioner situation which were beyond my control and which prevented demonstration of full scale successful application of my evolving insights.

In retrospect, this seems in some ways to have been fortunate. I believe the outcomes of the present inquiry constitute a vital *foundation* for the design, implementation and empirical study of educational reforms. Nevertheless, when people approach me about the Key Abilities Model, they usually ask, 'Where can we see it in action?' Many schools, particularly in Tasmania, are 'implementing' aspects of the Key Abilities Model. However, they are mostly doing so with no

support from myself, with no professional learning focused on action-scheme and identity change related to the Dynamic Paradigm of Learning and Change, and with no research monitoring.

While the Dynamic Paradigm of Learning and Change and the associated Key Abilities Model are built upon many studies and theories with a rigorous and, in many cases, empirical research basis, there is now a need for implementation of a fully funded and supported school-based trial, with associated research. This is important in order to realise in implementation the *intent* of the Key Abilities Model, and to provide tangible evidence of the outcomes of an educational experience that reflects the character and form of the Dynamic Paradigm of Learning and Change. I have begun consultancy work with the Northern Territory Department of Employment, Education and Training, which is interested in the Key Abilities Model. But as Dallas Glasby, Manager of Layer 2 Support Materials with the Department put it so plainly, ‘If you have any information/research to prove that KAM works, that would help greatly eg schools successfully using it with demonstrated improvement in outcomes etc.’ (Glasby 2004, pers. comm. 16 November).

6.4 THESIS RECOMMENDATIONS

The outcomes of the present inquiry suggest the need for implementation and research of a school-based trial of the Key Abilities Model, informed by and reflecting the Dynamic Paradigm of Learning and Change. Since the Dynamic Paradigm and the central features of the Key Abilities Model are universal, such a school-based trial could take place in any jurisdiction. This inquiry has established a compelling argument that educational change consistent with the Dynamic Paradigm of Learning and Change is vital to the achievement of a sane, evolutionary and truly democratic human society. Any educational jurisdiction seriously concerned to invest in developing the authentic intelligence of its young people will find attractive the opportunity to partner with a University and sponsor such a fully-supported school-based trial.

Such a trial might be styled as the Key Abilities Model Longitudinal Implementation and Research Project. It should include the following:

- Systemically supported implementation in several clusters of schools (high schools with main feeder primary schools; urban and rural; higher and lower socioeconomic demographics)
- A 5 year implementation and research period
- High profile promotion of the Project as a highly significant, research-based education reform, in relation to both the ends and means of education
- School selection by Expression of Interest and school leader interview, with provision made for transfer of individual teachers strongly disinclined to be involved
- Funding provided for secondment of the Project designer as Project Leader, with responsibility for:
 - providing schools with Project parameters, and guidelines for reconciling these to systemic accountabilities
 - providing and brokering professional learning experiences for school leaders, teachers, school-based and academic facilitators, and associated personnel and stakeholders focused on conceptual/action scheme change regarding the Constructs of the Dynamic Paradigm, and on addressing issues of identity, disposition and orientation to others and the world. This will include opportunities for experiential learning and engagement in an action-learning cycle involving Presentations, Models, Readings & Observations → Guided Critical Reflection → Supported Planning & Preparation → Exploratory Practice & Authentication → Presentations, Models, Readings & Observations...
 - providing timely guidelines and support for capacity building and development of context-based solutions, including revision of structural and organisational arrangements for curriculum 'delivery' and school management

- resource development
- research coordination
- project promotion (local; state; interstate; international) and community education
- Funding provided for secondment of one or more University-based project facilitators, in addition to Project Leader (number dependent on scale of trial)
- Research to gather data focused on describing and evaluating:
 - the extent of implementation/realisation of the intent of the Project
 - the effect of the Project on school leaders' pedagogical beliefs, and their identities, dispositions and orientations to others and the world (comparative data from trial schools and control schools)
 - the effect of the Project on teachers' pedagogical beliefs and practices, and their identities, dispositions and orientations to others and the world (comparative data from trial schools and control schools)
 - the effect of the Project on student attitudes to learning and the learning environment, and their identities, dispositions and orientations to others and the world (comparative data from trial schools and control schools)
 - the effect of the Project on the quality and nature of student learning, in terms of both conventional learning outcomes and transformational outcomes or Key Abilities (comparative data from trial schools and control schools; transformational outcomes in terms of school-based measures and psychological assessment measures)
 - issues associated with mentoring of pre-service teachers (comparative data from trial schools and control schools)
- Collection and publication of exemplary practices and artefacts associated with both student and teacher resources, activities and 'products'
- Funding for periodic in-house conferences for Project participants

- Provision of an email discussion list for Project participants
- Provision of sufficient policy ‘space’ to explore new practices consistent with the Key Abilities Model and the Dynamic Paradigm of Learning and Change.

6.5 FINAL REMARKS

The Dynamic Paradigm of Learning and Change clarifies in a coherent way understandings of such a fundamental nature, that it does, in my view, warrant the term ‘paradigm’. The implications of the Dynamic Paradigm for thinking and practice in many domains of human activity are great indeed. Even within the field of formal school education, the implications are many and varied, and it has been practical within this thesis to address only a few of these.

In this thesis I have argued the need for a ‘new’ educational paradigm. We have seen, however, and we could show by innumerable quotations from ages past, that the understandings reflected in the Constructs of the Dynamic Paradigm of Learning and Change are not new. They are consistent, too, with the notion of a knowledge economy that values creative intelligence as a potentially abundant means of production and wealth creation, that envisions ‘the end of scarcity’ (Open University 1997), and that accepts responsibility for, and stresses the interdependence and measurement of the ‘triple bottom line’ of economic, social and environmental value (Elkington 1980; Suggett & Goodsir 2002, pp. 1-16). The point of the ‘new’ lies in suggesting the possibility that the Dynamic Paradigm may become the *dominant paradigm informing human action*. According to my knowledge of history, that *will* be something new.

To understand a culture, we must be immersed in it. Yet, at the same time, in order for the features of the culture, especially its basic assumptions, to be recognised and placed within broader social contexts, as well as broader theoretical contexts, the change leader must be in some sense an outsider. The challenge for the change

leader, *as for each of us*, is to be *in* the culture, but not *of* the culture within which he or she seeks to prosper and bring about adaptive change.

The solution to the challenge of change within organisations has two primary elements, the first being a pre-requisite for the second. Firstly, it is crucial to the success of transformational change efforts that the change leader or agent has a thorough grasp of the principles, values, concepts and procedures underlying the change, as well as a strong personal conviction of their viability and value. Secondly, the primary strategy for facilitating transformational change must be managing meaning, that is, promoting conceptual/action scheme/identity change as an *authentic* form of learning within the organisation. It is in this regard that an external partner may be of value, supporting organisation-based change leaders.

According to Drucker (2002, p. 74), 'The change leader puts every product, every service, every process, every market, every distribution channel, every customer and end-use, on trial for its life. And it [sic] does so on a regular schedule'. Any educational jurisdiction willing to partner with an academic/university with a thorough grasp of the Dynamic Paradigm of Learning and Change, in order to engage seriously with articulating and applying defensible theory relating to education in a knowledge economy, and to put that theory and practice 'on trial for its life' through quality research, will open to itself an immense opportunity for marketing and promotion of its knowledge and services.

More importantly, it will have made a substantial and much needed investment in the development and expression of human intelligence.