INVESTING IN INTELLIGENCE
AN INQUIRY INTO EDUCATIONAL PARADIGM CHANGE

by

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Note regarding language
Every effort has been made in this thesis to use language respectful of gender equity. However, direct quotations of other authors remain faithful to the language used in the source.
The greatest idolatry is the worship of the letter.  
Sarvepalli Radhakrishnan

As the UN as we know it – and thus the forces of internationalisation, of world governance – collapsed, what the world began debating so imperfectly were the greatest, deepest and most confronting questions of all... No one has “the truth” any more. We all know it, in our hearts, though so many of us pretend not to, for fear of what that means, and the consequences that might follow for our careers if we dropped our pretence... Left and right. Black and white. Good and evil. All or nothing. These binaries are methods of escape from the need to examine who we are and where our society is failing us, with clear, honest eyes.  
Margo Kingston

Respect meaning, but do not imagine it can be taught.  
Herman Hesse

We must become the change we wish to see in the world.  
Mohandas Gandhi
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Summary of Thesis

In this philosophical and practical-critical inquiry, I address two significant and closely related problems – whether and how those involved in the enterprise of education conceptualise a need for educational change, and the observed resistance of school cultures to change efforts. I address 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.

Based on a meta-analysis of numerous theories and perspectives on human knowing, learning, intelligence, agency and change, I synthesise a ‘Dynamic Paradigm of Learning and Change’, characterised by fifteen Constructs. I argue that this more viable Paradigm 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.

The Dynamic Paradigm of Learning and Change contrasts with the assumptions reflected in the prevailing culture of institutionalised education, and I argue that dominant views of knowledge and human agency are both theoretically and practically non-viable and unsustainable. I argue that the prevailing culture and experience of schooling contributes to the formation of assumptions, identities, dispositions and orientations to the world characterised by alienation.

The Dynamic Paradigm of Learning and Change also contrasts with the assumptions reflected in some educational reform efforts recently promoted at system level in Queensland, Australia. I use the Dynamic Paradigm as the reference point for a formal critique of two influential reform programs, Authentic Pedagogy and the New Basics Project, identifying significant limitations in both the conceptualisation of educational ends and means, and the implementation of these reform agendas.
Within the Dynamic Paradigm of Learning and Change, knowledge and learning serve the individual’s need for more adaptive or viable functioning in the world. I argue that students’ attainment of knowledge of major ways in which others in our culture organise experience (interpret the world) is a legitimate goal of schooling. However, it is more viable to think of the primary function of schooling 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. Through the practical-critical components of the inquiry, undertaken in the context of the ferment of pedagogical and curricular discussion and exploration in Queensland between 1999 and 2003, I develop the Key Abilities Model and associated guidelines and resources relating to forms of pedagogy, curriculum organisation and assessment consistent with the Dynamic Paradigm of Learning and Change.

I argue 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, and their identities, dispositions and orientations to the world, as things that might need to change, in order to realise the intent of educational change focused on transformational student outcomes serving both the individual and collective good.

A recommendation is made 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, as an important investment in the development and expression of ‘authentic’ human intelligence.
1.1 THE PROBLEM OF EDUCATIONAL CHANGE

There is widespread interest, discussion and exploration globally, regarding school improvement in one form or another. One of the most often cited reasons for school reform is the need to prepare the young for participation in new economic and work environments, where the basis of employment is more flexible, the required skills tend to be higher order, more diverse and continually changing, and team work is more common (e.g. Atkin 1999; Australian Council of Deans of Education 2001; Beare 2001; Blackmore 1999; Board of Teacher Registration 2002; Delors 1996; Department of Education 1999a; Elliott 2000; House 2000; Queensland School Curriculum Council 1997; Seltzer & Bentley 1999; Townsend, Clarke & Ainscow 1999).

A country’s economic performance is often seen to be correlated to levels of student achievement in schools and/or to school completion rates. Townsend (1999, p. 3) notes that, as various countries distributed reports that linked the quality of education provided to students with status in the global economy, ‘so the focus of education moved towards one that saw education as fulfilling national goals rather than providing for either the individual student or local communities’. Education came to serve the function of ranking and selecting not only individuals, but also states and nations.

However, critics of school effectiveness research driven by such priorities argue that ‘school effectiveness research “findings” not only neglects [sic] but also negates [sic]’ (Elliott 1998, p. 101) the vision of education as a set of highly personal transactions addressing individually purposeful knowledge and involving complex considerations of curriculum and pedagogy. A recent UNESCO report (1998, pp. 63-64) acknowledges the tension between these educational concerns, noting that:
…global trends in teacher education can be broadly interpreted as a shifting balance between a concern mainly to prepare teachers who can implement effectively their school systems’ mandated curricula and a concern mainly to prepare teachers who can respond effectively to the diversity of students’ learning needs and interests generally. In practice, this distinction is not a hard and fast one, but is mainly a question of orientation; it echoes to some extent other distinctions which are often made in education, for example, between socially utilitarian and humanistic educational purposes, or between subject-centred and learner-centred approaches to teaching.

More recently, Thomas (2002) and others describe dilemmas and prospects associated with this same tension.

A ‘new learning’ agenda, for example, seeks to ‘grasp what is rhetorically or genuinely new in our times’, and to leverage contemporary public discourse about a ‘new economy’, a ‘knowledge economy’, a ‘knowledge society’, in order to position education and educators at the heart of things (International Journal of Learning n.d.). This ‘heart’ may be economic, argue proponents of new learning, but it ‘must also surely be a place of open possibilities, for personal growth, for social transformation and for the deepening of democracy’ (International Journal of Learning n.d.).

Elliott (2000) argues that the relationship between education and economic performance is mediated by the way in which the cultural context of schooling shapes the educational process. Fullan (2001, pp. 268, 271) suggests that, where educational change can be guided by ‘a deep theoretical understanding of the first principles of learning… [and] the first principles of change’, society will be stronger as education ‘serves to enable people to work together to achieve higher purposes that serve both the individual and the collective good’.

Peter Drucker, a respected authority in the field of management globally, explains that, in what he refers to as the current knowledge economy, ‘unless it is seen as the
task of the organisation to lead change, the organisation – whether business, university, hospital and so on – will not survive’ (Drucker 2002, p. 73). However, as Fullan (2001, p. 9) points out, there is a great deal of evidence that many educational change initiatives are ‘poorly thought out and unconnected to the stated purposes of education… [and the] main difficulty is how to achieve coherence’. A significant problem exists, then, in whether people perceive a need for educational change, and if so, how individuals conceptualise that need.

As Macklin (1976) points out, ‘seldom does any reality seek to transform itself’. Thompson and Zeuli (1999, pp. 345-346), for example, observe that perhaps the most striking thing about teachers’ efforts to learn and put into practice current reform ideas is that ‘it is possible – indeed, fairly common – to get a great deal right and still miss the point… of the reforms’. Similar conclusions have been drawn by other researchers (e.g. Ball & Cohen 1999, pp. 3-4; Goodlad, Klein & Associates 1974, pp. 72-73; Oakes et al. 1999, p. 242; and Stigler & Hiebert 1999, pp. 106-107). Closely related to the problem of whether and how individuals conceptualise the need for educational change, then, is a second significant problem, namely, that the history of curriculum change is a history of little change (Cuban 1984; Deal 1990; Fullan 2001, p. 10; Gerstner et al. 1994, p. 3; Glatthorn & Jailall 2000, p. 97; Hargreaves 1994a, pp. 43-44; Hood 1998, p. 3; Sarason 1990), or, as Woodrow Wilson (quoted in NCREL n.d.) put it so eloquently, ‘It is easier to change the location of a cemetery, than to change the school curriculum’. Sungaila (1992, p. 69) argues that there is ‘an urgent need to understand better the process of educational reform’, evidenced by the observation that, despite billions of dollars being spent on education reform every year around the world, the quality of teaching and learning remains largely unaffected.

Hodas (1993, p. 28) suggests that schools are technologies and that there is a close relationship between schools-as-a-technology and, ‘...the institutional and organizational values of knowing, being, and acting on which the school itself is founded: respect for hierarchy, competitive individualization, a receptivity to being
ranked and judged, and the division of the world of knowledge into discreet units and categories susceptible to mastery’. These values, along with other reductionist and mechanistic conceptual and methodological schemes employed to ‘furnish an understanding of the present (and past) in order to predict and/or control the future… and control human beings’ (Ryan 1988, pp. 17, 19), have long dominated the field of educational administration, and remain central (Ryan 1988). Efforts to engage with change of schools-as-a-technology must address cultural, and ultimately individual assumptions and values regarding human knowing, being and acting. As Hill (1988, p. 249) argues with regard to innovation and the social shaping of technological systems, ‘the most essential project of research is to delve beneath the surface of the text that is being read and written in discourse to the grammar that lies beneath’.

These two closely related problems – whether and how individuals conceptualise a need for educational change, and the observed resistance of school cultures to change efforts – represent a most significant challenge. Recognising the significance of ‘the grammar that lies beneath’, Drucker (2002, pp. 3, 5) argues that,

BASIC ASSUMPTIONS ABOUT REALITY are the PARADIGMS of a social science, such as management. They are usually held subconsciously by the scholars, the writers, the teachers, the practitioners in the field. Yet those assumptions largely determine what the discipline – scholars, writers, teachers, practitioners – assumes to be REALITY. …Yet, despite their importance, the assumptions are rarely analysed, rarely studied, rarely challenged – indeed rarely even made explicit. …[The assumptions underlying the theory and practice of management] are now so far removed from actual reality that they are becoming obstacles to the Theory and even more serious obstacles to the Practice of management. Indeed, reality is fast becoming the very opposite of what these assumptions claim it to be. The same could certainly be said of the related field of education. In sum, then, in the field of education a significant problem exists in 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.

1.2 THE RESEARCH CONTEXT
Practical-critical aspects of this inquiry focus mainly on the Queensland, Australia, public education context, and my participation in it, during the period from early 1999 to late 2003.

For some years, Education Queensland has been promoting a variety of reforms ranging widely across all levels of state education. From 1998, the program of reform included a shift to school based management, and began with the initiation of the *Leading Schools* program. Teachers were seen as ‘central agents’ in this ‘significant change process’, which was said to amount to ‘a cultural shift requiring new ways of thinking, behaving, teaching, learning and being’ (Department of Education 1998a, p. i).

At the ‘heart’ of this reform agenda in 1998 was Newmann’s notion of authentic pedagogy (Department of Education 1998a, p. ii), which was characterised 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’ (Newmann 1995, cited in Department of Education 1998a, p. ii. Note: I cannot find justification in the original reference for citing this list of characteristics as a set, or for items 5, 6, 7 and 9 specifically, a matter I explore in Chapters 2 & 5). Schools were encouraged to ‘begin to address challenges and construct models around which change can occur’ (Department of Education 1998a, p. ii).

During 1999, Education Queensland promoted extensive consultative processes for development of a long-term vision, which was to become the *Queensland State*
Education - 2010 (Department of Education 1999b) vision statement. In an early document defining the challenge, Education Queensland (Department of Education 1999a, p. 19) asserted that, ‘The magnitude of the changes… calls for a new paradigm for teaching and learning’. It was suggested that elements of this ‘new paradigm’ may include a re-examination of the eight Key Learning Areas, a shift from content to process driven learning, strengthening of relationships between students and adults, and curriculum planning and delivery arrangements that can provide ‘essential competencies… [including] communication, teamwork, information literacy, innovation, personal integrity and flexibility’ (Department of Education 1999a, p. 19). It was also noted that, ‘The frustration and difficulty that school teachers face today is that the new paradigm often proves elusive – and there’s not too much time available to go looking for it!’ (Department of Education 1999a, p. 19).

At the same time, Education Queensland was promoting the Schooling 2001 (Department of Education 1998b) policy on Information and Communication Technology (ICT) integration, and the trial and staged implementation of the eight Key Learning Area outcome-based syllabuses being developed by the Queensland School Curriculum Council (now Queensland Studies Authority). In addition, they launched programs for discussion, promotion and trial of the New Basics Project (Department of Education c1999, 2000a), and the Productive Pedagogies (Department of Education and the Arts 2002a). A large number and variety of policies and position statements has followed, including, amongst others:

- Education Queensland Strategic Plan 2000-2004 (Department of Education 2000b)
- New Basics – Curriculum Organisers (Department of Education 2000a)
- Literate Futures: Report of the Literacy Review for Queensland State Schools (Department of Education 2000c)
- Draft Policy and Guidelines for Core Curriculum for Years 1-10 in Education Queensland Schools (Department of Education 2000d)
• Years 1-10 Curriculum Framework for Education Queensland Schools: Policy and Guidelines (Department of Education 2001a)
• Report of the Assessment and Reporting Taskforce (Department of Education 2002b)
• School Improvement and Accountability Framework: Helping Schools Focus on Student Achievement, Quality Improvement and Enhanced Accountability: Policy and Guidelines (Department of Education 2002c)
• Professional Standards for Teachers: Guidelines for Professional Practice: Pilot 2002 (Department of Education 2002d)
• Productive Pedagogies: Classroom Reflection Manual (Department of Education and the Arts 2002a)
• ‘Newsflash: Curriculum planning, assessment and reporting one-page guide’ (Department of Education and the Arts 2002b)
• Queensland the Smart State: Education and Training Reforms for the Future (Department of the Premier and Cabinet 2002)
• See the Future: The Middle Phase of Learning State School Action Plan (Department of Education and the Arts 2003).

In the latter part of 1999, and throughout 2000, I held the secondment position of Education Advisor – Learning Technology / Effective Learning and Teaching. My role involved assisting school leaders and teachers across a District of just over forty schools in North Queensland in the achievement of the Minimum Standards for Teachers – Learning Technology, and the effective integration of ICTs across the curriculum using principles of student-centred learning and teaching, in accordance with the Schooling 2001 (Department of Education 1998b) policy.

In 2001, I was appointed to a new secondment position as Education Advisor – Curriculum Outcomes, again assisting schools and teachers across a District of just over forty schools (this time South of Brisbane). My broader brief in this position
was to assist schools in a school renewal process through the development of initiatives in pursuit of reform of curriculum, pedagogy, assessment and reporting, with an emphasis on higher order/critical thinking, approaches to integrated curriculum, New Basics/Productive Pedagogies, and ICTs.

In the latter part of 2001, and through most of 2002, I held the position of Deputy Principal at a newly established high school, and in the latter part of 2002, and throughout 2003, I held the position of Deputy Principal (Acting) at a large, established primary school. Since 2001, I have also written coursework for Queensland University of Technology, taught and conducted research for Griffith University, and taught at the University of Southern Queensland, as well as providing private consultancy services at school and system level in Queensland, New South Wales, Tasmania and the Northern Territory. In June 2004, I took up a full-time position as Lecturer (New Learning) at RMIT University in Melbourne.

During the period of my research, the above-mentioned Education Queensland policies and statements regarding school reform, amongst others, have repeatedly, if inconsistently, emphasised: exit outcomes (prospering in the real world); active learning for intellectual quality (constructivism); real life purposes, roles and contexts (integrated curriculum); individual meaning and relevance (one-size-does-NOT-fit-all); personal responsibility for learning and behaviour (genuine engagement); and extension of pedagogical repertoires (teachers becoming more often a ‘guide on the side’ than ‘sage on the stage’). In particular, pedagogy has remained a priority change issue, as emphasised in this 1999 statement by, then, Deputy Director-General, Professor Alan Luke, referring to the QSE-2010 long-term vision:

2010: It’s about pedagogy, that’s all it could and should be about… The main game is pedagogy. It’s about having curriculum conversations, about authentic assessment, about expanding and sharing our professional pedagogical repertoires for improved student outcomes… As a system, we need to commit to pedagogy – to understand that our job is to read these
new communities, these new forms of poverty and disadvantage, and assess
our students, their communities, their lifeworlds in light of 2010, to assess
what kinds of curriculum goals, knowledges, skills, practices will be suited
for them in these brave new and old worlds – and then to jiggle, adjust,
remediate, shape and build our classroom pedagogies to get quality,
educationally, intellectually and socially valuable outcomes. That’s our
business, that’s our job, that’s teachers’ work. We need to put it on the
the table, talk about it in staffrooms – not make excuses for our schools,
ourselves, our systems, our bureaucracies. And we need to get worked up
when people tell us that our business is anything but pedagogy. EQ, at every
level, needs to be focused on this. (Luke 1999a)

The 20 Productive Pedagogies strategies being promoted in Education Queensland
(Department of Education and the Arts 2002a) have strong parallels with the
Principles of Effective Learning and Teaching (ELT) (Department of Education
1994), which Education Queensland had been promoting since 1994, particularly
through the employment of Education Advisors – Effective Learning and Teaching,
such as myself, through Effective Learning and Teaching audits of schools, and
through inclusion of the Student-Centred Learning section of the Minimum
Standards for Teachers – Learning Technology within the Schooling 2001 policy
(Department of Education 1998b). Despite this promotion, the Queensland ‘School
Reform Longitudinal Study’ (SRLS) found, after 462 classroom observations, that
‘most of these things [the 20 Productive Pedagogies] do not occur all that often in
schools’ and that ‘student-centred... practices are among the MOST rare of all’
(Ladwig 1999).

It became increasingly clear to me through my work roles from 1999, that teachers,
schools and systems were, and are, having great difficulty understanding and
resolving some of the contradictions and lack of alignment between and within
policies, discourse/rhetoric, the literature, the pressures of accountability, and the
inertia of traditional school culture. I saw that there was, and is, a great need for a
significant cultural change, and that teachers, schools and systems are, indeed, finding the new paradigm ‘elusive’, in terms of conceptualising it, of appreciating the need for it, and of implementing it. I saw a need for a clear and coherent articulation of a new educational paradigm that might inform an alignment of policies and school culture, and for models that might make significant change more achievable.

1.3 THE RESEARCH QUESTIONS
This inquiry asks the following 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?

The inquiry aims to synthesise and articulate a coherent conceptual framework for learning and change relating to the ends and means of education, to generate critical insights from the perspective of that framework, and to generate practical models, resources and texts consistent with it that could assist academics, policy makers and education practitioners in the design and interpretation of, and response to, educational change.

1.4 METHODOLOGY & METHODS
One of the main aims of this research is to formulate a clear, coherent and viable ‘theoretical’ perspective on learning, agency and change, and this ‘theory’, detailed in Chapter 3, provides the fullest rationale for the form of research itself. Some brief comments on research methodology will be made here, along with an outline of the method used in this particular inquiry.

1.4.1 Methodology
Conventional ethnography ‘situates itself as a disinterested, scientific activity, committed to modes of inquiry that are conducted by experts…’ Belying its
apparently radical programme, this is an essentially conservative project, camouflaged in the very fashionable discourses of postmodernity and world-systems theory’ (Jordan & Yeomans 1995, pp. 403-404). However, an emergent theme within the diverse range of methodologies influencing contemporary ethnography has been a concern with reflexivity. Reflexivity asserts that the researcher, the research act, and its product are constitutive of, and not separable from the everyday world, and it ‘represents ethnography’s attempt to resolve the dualisms of contemporary social theory i.e. object/subject, theory/practice, action/structure and so on’ (Jordan & Yeomans 1995, p. 394). Thus, we see the emergence and exploration of new forms of research based on ‘performative notions’, which see ethnography as ‘always caught up in the invention, not representation of cultures’ (Jordan & Yeomans 1995, p. 394).

Laing (1971, p. 16) argued that, ‘I cannot experience your experience. You cannot experience my experience… Experience as invisibility of man to man is at the same time more evident than anything. Only experience is evident. Experience is the only evidence’. Thus, humans are storytelling beings, and the study of narrative is ‘the study of the ways humans experience the world’ (Connelly & Clandinin 1990, p. 2). Eisner’s (1988) review of the study of experience from the perspective of education aligns narrative with researchers working with experiential philosophy, psychology, critical theory, curriculum studies, and anthropology. For Richardson (2000, p. 931), autoethnographies are ‘highly personalized, revealing texts in which authors tell stories about their own lived experiences, relating the personal to the cultural’. Such writing is not just a ‘telling’ about the world, but ‘a way of “knowing” – a method of discovery and analysis’ (Richardson 2000, p. 923), so that, ‘Writing is validated as a method of knowing’ (Richardson 2000, p. 929). In autoethnographic texts, ‘concrete action, dialogue, emotion, embodiment, spirituality, and self-consciousness are featured, appearing as relational and institutional stories affected by history, social structure, and culture, which themselves are dialectically revealed through action, feeling, thought, and language’ (Ellis & Bochner 2000, p. 739).
Formal kinds of narrative research need to have a ‘critical’ component, so that they can serve to clarify understandings of context and concepts that help us to answer questions of what we should do. Despite the fact that it does not appear to generate ‘data’, systematic philosophical inquiry is an important component in any research design, since it has the potential to ‘scrutinise and identify terms and concepts, to draw attention to assumptions, and to clarify language and logical connections’ (Nicholson 1995, pp. 20, 22).

Philosophical inquiry includes not only the analysis that has the capacity to establish ‘conceptual common ground’, but also the synthesis that can create a synoptic view, and such synthesis is ‘creative’, to the extent that ‘it promotes the exploration of innovative, theoretical relationships, leading to an entirely new (albeit synthetic) theory product’ (Nicholson 1995, pp. 23, 25). The philosophical method of research may result in ‘clarification of meaning, and the highlighting of the logical implications of concepts and theories’ (Nicholson 1995, p. 22). But herein lies a significant limitation of philosophical inquiry as a research method on its own. Its tools are linear, abstract, symbolic representations of phenomena, actions and experience, and its implications remain merely logical. I will argue in Chapter 3, that meaning is the significance or purpose underlying objects, concepts, ideas, speech or events. The meaning of these things cannot be separated from actions and contexts, and the interpretation of all these depends on the individual subject’s purposes or perception of a problem.

Jordan and Yeomans (1995, pp. 401-402) argue that,

Rather than providing expert knowledge, the role of the critical ethnographer should be oriented to facilitating the production and dissemination of really useful knowledge within the research site… making the everyday world problematic for ourselves is not enough; making it problematic for those we leave behind in the field should be the point.
Elliott (1991, p. 116) argues that in practitioner-researcher inquiry the ‘ambiguities, conflicts and tensions’ contained within teacher self-understandings make possible the emergence of a ‘self-generating, reflexive and critical pedagogy’. Whitehead (2000, p. 93) makes a similar argument, ‘placing ‘I’ as a living contradiction… [as the nucleus of] an epistemology of reflective practice’. Jordan and Yeomans (1995, p. 403) suggest that, while critical theory may have a place in developing teachers’ understandings of hegemonic processes, the methodology of action research should focus on teachers’ investigations of their own forms of really useful knowledge.

1.4.2 Method selection for this inquiry

William Powers (1990) relates a “fish scale” metaphor of scientific progress proposed by Donald Campbell, late Professor of Psychology at Lehigh University, USA. Each knowledge worker constructs one small scale that overlaps those laid down by others. Working within their specialisation, and focusing on fitting a new little scale to the ones previously laid down by others, each worker is likely to have a very narrow view of the problem at hand. The fish may eventually be completely covered, but what if the fish is a ‘red herring’? Many diligent knowledge workers will devote their lives to covering the wrong fish. It may appear that progress is being made, but it is unlikely that a single worker will notice that certain assumptions underlying the whole design are flawed. We might often have the diligent application of fish scales to a giraffe.

In the ‘theoretical’ perspective synthesised in Chapter 3, such a reductionist view of the world is seen as problematic. Consistent with my perspective too, the new science of ‘chaos’ insists that complex, non-linear, dynamical systems are ultimately ‘irreducible into parts’ and that effects can never be traced to particular causes, because ‘the parts are constantly being folded into each other by iterations and feedback’ (Briggs & Peat 1989, p. 147). This is not to suggest that more narrowly empirical research has no value, but that it is not appropriate to the context of this inquiry, or to the questions addressed in it (Fullan 2001, pp. xi, 78). Accordingly, the scope of this inquiry is broad, addressing diverse, though
intimately interrelated issues of theory, culture, policy, practice and change relating to curriculum, learning, pedagogy, assessment, reporting and school organisation. It constitutes these matters as a ‘whole’ situation in a particular (state) context, rather than focusing on an abstracted fragment, since the lived experience of the researcher/practitioner – as of all players practically involved in schooling who face the problems addressed in this research – involves all these facets in a complex matrix within which no meaningful separation is possible. This inquiry constitutes a form of action research, so that, recognising the complexity, the subtlety, and the interdependence of human learning, action, relationships and culture, I could, as Burns (1997, p. 353) put it, both study and achieve ‘the improvement of the educational practices in which [as a practitioner-researcher I was] engaging’.

While this research addresses some of the challenges of educational change at classroom, school and system levels, it nevertheless embraces the pedagogy proposed by McLaren (1998, p. 217), which ‘takes the problems and needs of the students themselves as its starting point’. The concern, then, is not just with certain processes of change, but with the substantive nature of change, particularly in relation to learning and other significant impacts of schooling on students. I have sought throughout this thesis to contextualise the research as being essentially related to ‘the problems and needs of the students’.

The inquiry aims to examine, critique and synthesise a variety of significant perspectives on learning and change in order to generate a coherent conceptual framework that will constitute a reference point for the critical analysis and construction of contributions to the field of educational change. From the perspective of that framework, the inquiry generates critical insights and develops practical models, resources and texts that may assist academics, policy makers and education practitioners in the design and interpretation of, and response to, educational change.
In brief, the research involved ‘re-entering into’ culturally endowed concepts, definitions and practices by questioning them and either authenticating or reconstructing them through purposeful, practical-critical activity in the social world. The inquiry began with the perception of a situation as problematic in relation to my purposes, as well as the expressed purposes of others. The problem was then formulated in coherent terms, conditions were observed, ideas (meanings) in the literature, policies and discourse relating to solutions were critically examined and sometimes challenged. Habitual patterns of thought, feeling and behaviour were transcended as creative connections were sought and made, especially through intuitive and/or paralinguistic means, between previously unconnected matrices of thought or experience, and action schemes were reconstructed. Solutions suggested by this critical examination and creative category-shifting were subjected to evaluation and authentication, to the extent that was practical, all in a complex, dynamic, iterative, dialectical interplay producing a continual evolution of understanding, expression and action.

In seeking to address the two research questions identified above, the substantive contribution of this research consists in:

1. philosophical analysis and synthesis, and
2. the generation, discussion and evaluation of data in three main forms:
   a. field journal extracts, autobiographical notes, discussion list contributions, and recollections
   b. critical analysis of selected literature, policies, documents and discourse associated with:
      i. the Queensland State Education – 2010 vision and change agenda (Department of Education 1999b)
      iii. implementation of the outcomes-based Key Learning Area Syllabuses (Queensland Studies Authority n.d.)
   c. personally constructed models, guidelines, resources and texts.
This philosophical and practical-critical inquiry generates insights that have direct bearing on how we might conceptualise the need, substantive nature and means of learning and change in students, teachers, schools and systems.

1.4.3 Quality criteria

In the ‘theoretical’ perspective synthesised and adopted in this inquiry, the function of cognition is adaptive, serving the individual subject’s organisation of the experiential world, not the discovery of an objective ontological reality. In the context of purposeful philosophical and practical-critical activity, meanings are reconstructed and evaluated in terms of fit or viability in the material or social world and consistency with the subject’s conceptual system as a whole. Such new epistemologies require different or reformulated quality criteria. Accordingly, the quality criteria for the meanings generated by this kind of research have nothing to do with ‘truth claims’, but rather with viability and usefulness.

It should be noted that, as will be argued in Chapter 3, the first reference point for evaluating the quality, viability, or adaptive value of the meanings or ‘new knowledge’ generated in an inquiry is the experience and conceptual system of the person who engaged in the inquiry. Then, since, as Laing (1971, p. 16) was quoted above as saying, ‘you cannot experience my experience’, in a formal written thesis it is only through discursive practices that the practitioner-researcher can attempt to ‘share’ those meanings with others. As I also argue at length in Chapter 3, however, that process is by no means a mere transfer of meaning. It is one in which each ‘other’ who engages with the findings of an inquiry, articulated with the cumbersome tools of language, constructs their own meanings from and about them and necessarily evaluates the inquiry and its findings, as they interpret them, in terms of viability, usefulness or fit with their own inevitably different (to a small or larger extent) experience, interests/purposes and conceptual system. This is not to suggest that human learning and knowing are essentially subjective, arbitrary or relative, but that they are essentially individual.
Richardson (2000, p. 937) argues that ethnographic researchers ‘ought not be constrained by habits of other people’s minds’. The potential ‘catch 22’ here, of course, especially when an examiner evaluates a doctoral thesis, is that the habits of other people’s minds do, in some way, need to be satisfied. And yet, it is only when some aspect of articulated research findings challenges an aspect of the current understanding of some ‘other’ who engages with them that the potential exists for those findings to contribute to a reconstruction or extension of understanding, that is, to new knowledge, to learning. It is appropriate, then, to have some quality criteria that move readers of this kind of research beyond simply asking (perhaps unconsciously) the question, ‘Does it fit with my current view of the world?’

Kaplan (1964, pp. 311-322) identifies three norms of validation as the correspondence, coherence, and pragmatic norms. With regard to the correspondence norm, the validity of a theory is established in proportion to the heterogeneity of well established facts and evidence that the theory takes into account. Kaplan (1964, p. 313) recognises that ‘how we conceptualize facts in turn depends on the theories that play a part in their cognition’. He argues, however, that while progress in understanding sometimes requires thrusting aside assumptions, complete scepticism is as sterile as uncritical acceptance of endowed meanings (Kaplan 1964, p. 313). Appeals to “the facts” rest on a ‘bedrock of common sense’, he argues, and ‘What counts in the validation of a theory, so far as fitting the facts is concerned, is the convergence of the data brought to bear upon it, the concatenation of the evidence’ (Kaplan 1964, pp. 313-314).

As facts ultimately sit within theories that give them meaning, so the need for a theory to correspond with its own set of facts is associated with a need for the theory to have some relation to other contexts, frames of reference, or well established theories. Thus, the coherence norm proportions validity to the ‘pattern of relatedness, …the feeling of wholeness’ that can be identified, as ‘widely different and separate phenomena’ are integrated or synthesised, and ‘the fragments have come together and form a whole body’ (Kaplan 1964, p. 314).
Finally, Kaplan (1964, p. 319) argues that, because there can be a variety of intervening variables which are beyond the researcher’s control, demonstration of actual successful application in a practical situation is not a necessary condition of validity. This is not to say that valid theory need not bear any relation to experience or practice. A central argument throughout this thesis is that the separation of theory and practice, even their separation by definition, can be deeply problematic. Kaplan (1964, p. 322) argues that a ‘theory is validated, not by showing it to be invulnerable to criticism, but by putting it to good use’ in solving problems. Thus, the pragmatic norm establishes validity to the extent that a theory has practical use, which includes contributing to meaning-making, or that it has clear implications for more effective practice (Kaplan 1964, pp. 319-322).

My own evaluation or critical analysis of theories, policies, discourse and practice within this inquiry applies these correspondence, coherence, and pragmatic norms, in order to establish greater or lesser degrees of validity or viability.

Another perspective on evaluation, of particular relevance to the practical-critical aspects of the current inquiry, is suggested by Richardson (2000, p. 937) in the form of five possible criteria for what she calls Creative Analytic Practice Ethnography:

1. Substantive contribution: Does this piece contribute to our understanding of social life?…
2. Aesthetic merit: …Does this piece succeed aesthetically? Does the use of creative analytic practices open up the text, invite interpretive responses? Is the text artistically shaped, satisfying, complex, and not boring?…
3. Reflexivity: …How did the author come to write this text?… How has the author’s subjectivity been both a producer and a product of this text? Is there adequate self-awareness and self-exposure for the reader to make judgements about the point of view?…
4. Impact: Does this affect me? Emotionally? Intellectually? Does it generate new questions? Move me to write? Move me to try new research practices? Move me to action?

5. Expression of reality: Does this text embody a fleshed out, embodied sense of lived experience? Does it seem “true” – a credible account of a cultural, social, individual, or communal sense of the “real”?

This last criterion, ‘expression of reality’, has been identified as appropriate by several writers, and variously termed ‘plausibility’ (Connelly & Clandinin 1990), ‘verisimilitude’ (Maanen 1988), and ‘naturalistic generalisation’ (Stake 1994). Richardson’s ‘impact’ criterion is also important, since criticalists’ goal is ‘not merely to spotlight inequitable societal conditions, but to change them’ (Gall, Gall & Borg 1999, p. 372).

1.5 THESIS ORGANISATION

I have sought in this chapter to describe in broad terms the issue addressed in this inquiry, suggesting that a significant educational problem consists in the apparent lack of a clear, coherent and viable theory of learning, agency and change, which would be capable of making explicit the need, substantive nature and means of educational change. I suggested also that there exists a need for models and guidelines consistent with such a theory, that might assist systems, schools, teachers and students to engage with learning and change. I identified the Queensland state education system from 1999 to 2003 as the primary context for the practical-critical components of the inquiry. Finally, I made some brief comments regarding research methodology, outlined the particular combination of methods selected for this inquiry, and discussed some issues relating to the evaluation of such research.

In Chapter 2, I relate aspects of the story of the extended, in-context, practical-critical inquiry I engaged in during the period of this inquiry, particularly from 1999 to 2003. This chapter consists substantially of public domain discourse and
extracts from my own field journal, autobiographical notes, discussion list contributions, recollections and annotations. I trace the evolution of my own thinking and action, and the development of models, guidelines and resources, in relation to supporting teachers, schools, systemic personnel and others in making sense of, and responding to a diverse set of change agendas, policies and discourses. Each of these models, guidelines, resources and discussion contributions, along with the other writings and presentations mentioned in Chapter 2, represents aspects of my engagement with the discourse, the literature, and the intellectual and practical challenges associated with my roles in support of educational change.

In Chapter 3, I review a considerable number of perspectives on human knowing and related notions of human intelligence, creativity, emotion, agency, action and learning. On the basis of this review, I synthesise and formulate a deep and coherent framework for understanding desirable ends and means of education and of change – a framework which I argue 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. This framework, or set of constructs, constitutes a different paradigm, the ‘Dynamic Paradigm of Learning and Change’, which contrasts with the assumptions reflected in the prevailing culture of institutionalised education and in some current reform efforts.

In Chapter 4, I bring into sharper relief the need for educational change. I review literature relating to the currently dominant paradigm, that is, to the prevailing culture of institutionalised education, to the prevailing kind of social character and society, and to the dynamic relationship between the two. From the perspective of the ‘Dynamic Paradigm of Learning and Change’ characterised in Chapter 3, I highlight the problematic nature of the mutually reinforcing cultures of schooling and broader society.
In Chapter 5, I engage in a formal critique of two major educational reform programs, Authentic Pedagogy and the New Basics Project, both of which have been very influential in Queensland and further afield. From the perspective of the ‘Dynamic Paradigm of Learning and Change’ formulated in Chapter 3, I identify limitations in both the conceptualisation and implementation of these reform agendas.

In Chapter 6, I identify some key conclusions emerging from this inquiry, and identify some of its limitations. I make some recommendations on the basis of these insights and outcomes, and close with some final observations regarding the significance of the inquiry.
Chapter 2

PRACTICAL-CRITICAL INQUIRY INTO CHANGE IN
QUEENSLAND STATE SCHOOLING 1999-2003

2.1 THE LEAD UP TO 1999

In 1996, I participated in a major professional development program in the use of information and communications technologies (ICTs) in education, called ‘Connecting Teachers to the Future’. I came to see ICTs as a valuable resource for implementing the Principles of Effective Learning and Teaching (Department of Education 1994) that Education Queensland had been promoting since 1994. However, I soon came to agree with then Assistant Director-General (Education Services) of Education Queensland, Brian Rout, who recognised that ‘the interconnection of all elements of the educative process – curriculum, pedagogy, assessment, and organisational structures – means that to realise the potential of learning technologies to maximise student learning outcomes we need to bring about a paradigm shift’ (Rout 1997, p. 9).

I became aware, in my Master of Education studies, of Wellington’s (1990, p. 62) observation that the influence of IT on pedagogy is relatively small in primary schools, while in secondary schools, ‘the effect of IT upon the content and structure of the curriculum has been negligible’. Pea and Sheingold (1987, p. x) suggest the reason:

…we have continually found that educational technologies serve as mirrors of minds and the cultures in which they “live”. Rather than radically amplifying or transforming the processes of teaching and learning, as many predicted, they instead reflect the expectancies represented in classrooms and the knowledge and skills of individuals using them.

In 1998, I published a refereed article which I adapted from a paper I wrote as part of my Master of Education. It was titled, ‘Opening school doors to the real world: A review of literature on computer mediated communication and its role in the
The creation of constructivist learning environments (Seaton 1998). The review covers some theoretical perspectives on constructivist learning (reflecting my reading of those perspectives, and the meaning I associated with constructivism at the time), the nature of learning environments, constructivist applications of computer mediated communication (CMC) in primary and secondary schools, and the role of CMC in curriculum and school restructuring. I observed in the conclusion of my review (Seaton 1998, p. 21) that, ‘Perhaps the issue which has come to stand out most clearly for me, as a result of conducting this literature review, concerns the need for the development, promotion and discussion of first principles of learning’.

2.2 YEAR 1999

I soon had the opportunity to begin assisting teachers to clarify principles of effective learning that might guide exploration of pedagogy change and effective use of ICTs. In 1999, the new principal of the school where I taught found the funds to take me off class to teach and support other teachers in the integration of ICTs across the curriculum. One of my main tasks was to lead a whole-staff professional development and curriculum innovation program to support student-centred integration of learning technology, consistent with the Schooling 2001 (Department of Education 1998b) policy on ICTs.

Encouragement for curriculum innovation to accompany ICT integration was coming from the highest levels of Education Queensland. Then Director-General of Education, Terry Moran, argued, for example, that:

We cannot simply adopt the new technologies as a supplementary resource to keep doing the same things in the same ways... Within our schools we need to engender a culture of innovation and creativity which transforms outdated systems and practices in response to the individual needs, interests and abilities of our students... In terms of curriculum design, the capacity to recognise and generate patterns, connections and relationships from vast quantities of information is driving us towards project and issue based multidisciplinary learning... (Moran 1999, emphasis added.)
Elsewhere, Moran (1998, p. 15) characterised the challenge of ‘shifting the teaching/learning paradigm’ as a shift to this student-centred, outcomes-based approach, coupled with the provision of the necessary technology infrastructure… [and as] an opportunity for educators today to redesign the schooling system so that is [sic] more finely tuned to the needs of individual learners… [W]e must concentrate our efforts on developing self-directed learners who understand and manage their strengths and weaknesses as learners, who take responsibility for organising their own learning experiences and display motivation and persistence… The generation of knowledge requires the application of selected, disciplined techniques… [the] “invisible technologies” [of the disciplines] to authentic issues and projects. …[This involves] a profound challenge to the traditional ways we go about our business – a challenge to the curriculum, to the structure and organisation of the school day and to the teaching methods we use and indeed the professional role of the teacher [while we] hold tight to what we know works.

The principles of ‘student-centred learning’, which were equated with ‘principles of effective learning and teaching’ and specified within the ‘Minimum standards for teachers’ outlined in the *Schooling 2001* (Department of Education 1998b) policy, included the following:

- [A teacher] Accommodates the learner as an individual and independent learner and as a member of a group…
- [A teacher] Uses open-ended software and open-ended tasks to promote problem solving
- [A teacher] Uses the technology to extend the learning environment beyond the walls of the classroom (Department of Education 1998b, p. 26)

Within that context, I initiated and coordinated involvement of ten teachers and about 200 students in a community research project, showcased as a website (Ayr
East State School 1999), as part of the International Schools CyberFair ’99. I wrote an article (Seaton 1999a) describing some of the issues associated with that project.

The organisers of the CyberFair competition provided rubrics for student use in evaluating other schools’ project websites. I think this was my first exposure to rubrics as an assessment/evaluation tool, and we found them very useful for this purpose. I found, however, that they also assisted in some of the most significant learning by students. Later, I was to see and advocate a significant role for rubrics in teaching and learning. The rubrics worked for us in a third way, too, since our school won 5th place in the world in our category. This created a greatly improved climate regarding educational change and the use of ICTs amongst the school community (teachers, students and parents), and prompted very positive, tongue-in-cheek media coverage in the local paper (see Figure 1).

*Figure 1: Press coverage of East Ayr State School’s International Schools CyberFair ’99 success (Harry’s View 1999, p. 2)*
Also during 1999, I gave thought to how I might more explicitly address the challenge of organising for student engagement in open-ended problem solving activities, and how I might meet the pedagogical challenge of moving beyond the ‘content-based instruction’ of the out-dated ‘current model of schooling…[wherein] learning is controlled and organised by teachers’ to a more ‘relevant’ model in which ‘teaching will no longer be the transfer of information, learning no longer the retention of facts and education no longer the exclusive responsibility of teachers’ (Department of Education 1999a, p. 15). I developed some guidelines and resources to support this effort, which I published on my website as ‘KidSolutions: Guidelines and resources for problem-based learning’ (Seaton n.d.[a]) . A couple of years later, I wrote a short article titled, ‘Getting off the stage’ (Seaton 2001a), about the development of those online guidelines and resources.

Following my own first experience with engaging a class with this kind of activity, I jotted down some of the difficulties I felt I would need to reflect upon and address before and during subsequent use of this pedagogy. Here they are, just as I jotted them down at the time:

1. Difficulty with too many activities.
2. Some didn’t understand process of self and peer assessment.
3. Some didn’t use genre models carefully.
4. Some got stranded on “trying to find information”.
5. Variable ability to work in groups.
6. Variable ability to put and keep self on track.
7. Some people in groups hogging computer time.

Moreover, the generally positive student responses notwithstanding, a couple of students who were used to receiving very high ‘marks’ for their school ‘projects’, expressed to me their resentment of the dynamic and intellectually challenging nature of these problem-based learning activities. Significant pedagogy change, I concluded from these observations, could not reasonably be seen simplistically, either in terms of what it demands of teachers and of students, or of the responses it might receive from both.
I had long been in sympathy with Coleman’s (1972, p. 7) concern that, at present, ‘...the student role is not a role of taking action and experiencing consequences... It is a relatively passive role, always in preparation for action, but never acting’. I had a conviction that we learn through experience, through purposeful action, and realised that this implies an epistemology that has far reaching implications for school curriculum. The important role of experience in learning was recognised, in principle, in curricula being introduced in Queensland government schools since the early 1990s, such as the English Language Arts Syllabus (Department of Education 1991a) and Further Literacy Inservice Project (Department of Education & Brisbane Catholic Education Office 1990). The different language structures which characterise different disciplines or forms of knowledge, that is, distinctive forms of purposeful, cultural activity, were thought of as distinct genres, which derive their character, meaning and purpose from their contexts. A genre was defined as, ‘Any purposeful activity that is characteristic of a cultural community; has a characteristic staged generic structure...’ (Department of Education 1991b, p. 18).

Despite the emphasis in those documents on genres as vital cross-curricular and real life forms of language-in-use, and the provision of some rather technical and complex genre deconstructions in the associated materials, I (and others) found it difficult to locate straightforward, accessible genre guides. I felt it was important to have such guides available to students for the kind of problem-based activities supported by KidSolutions, so I developed a basic range of genre guides myself (Seaton n.d.[b]), and built these into the Resources section of the KidSolutions website. Guides were initially provided for the following genres:

<table>
<thead>
<tr>
<th>Email</th>
<th>Letter of Persuasion</th>
<th>Recount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interview</td>
<td>Letter of Thanks</td>
<td>Review</td>
</tr>
<tr>
<td>Investigation Report</td>
<td>Letter to the Editor</td>
<td>Scientific Experiment</td>
</tr>
<tr>
<td>Letter of Complaint</td>
<td>Press Release</td>
<td>Survey/Questionnaire</td>
</tr>
<tr>
<td>Letter of Invitation</td>
<td>Proposal Submission</td>
<td>Written Discussion</td>
</tr>
</tbody>
</table>
Each genre guide includes a brief description of the purpose of the genre, its typical structure, characteristic language features and conventions, and a simple example. One example of these genre guides can be seen in the collection of resources reproduced in the Appendix.

In all, the guidelines and resources contained within KidSolutions website totalled around 45 separate web pages. The resource has attracted a great deal of interest and acclamation. An Assistant Director-General visited the school where we had won the International Schools CyberFair award. He was shown the award winning website entry, ‘Fishing North Queensland’ (Ayr East State School 1999), and the KidSolutions website I had developed (Seaton n.d.[a]). He asked who owned it and was told that I did. He concluded his visit with the comment that, “You are one of only a few schools across the state integrating learning technology in the way EQ wants them to”.

Education Queensland’s *Curriculum Exchange* contained for some years a review of the KidSolutions resource, which stated in part:

This well-organised site provides the framework and resources for a ‘problem-based curriculum’ designed to cater both to individual student needs and to assessable outcomes... This is a well-designed and logically developed site which provides a great deal of useful information for teachers. The suggested structure is flexible enough to be adapted to local needs, and the resources which have been developed will prove invaluable for busy teachers.

Part of the original review, some additional comments, and a link to my KidSolutions website, remain within the online resources section of the *New Basics Project* (Department of Education and the Arts 2002c).

In the latter part of 1999, and throughout 2000, I held the secondment position of Education Advisor – Learning Technology / Effective Learning and Teaching in a
North Queensland district of Education Queensland. My role involved assisting school leaders and teachers across a District of just over forty schools in achievement of the Minimum Standards for Teachers – Learning Technology, and effective integration of ICTs across the curriculum using principles of student-centred learning and teaching, in accordance with the *Schooling 2001* (Department of Education 1998b) policy.

In a discussion with my supervisor after about a month in the advisory role, I mentioned a number of issues relating to broader issues of the change agenda than just use of ICT (Field Journal: 12 October 1999). I referred to a concern that some principals lacked a clear vision of change for their schools, and effective leadership was lacking as a result (for example, Field Journal: 24 August 1999; 30 August 1999; 4 October 1999; 6 October 1999; 11 October 1999). I mentioned a concern that, amongst those teachers who were making increased use of ICT, many were teaching students ICT skills *as skills* in isolation, rather than in the context of authentic, engaging and intellectually challenging learning tasks and activities. And I noted that ‘the enemy of the best is the good’, as a way of giving expression to my concern that so many teachers were feeling good about the fact that they were making much greater use of ICT in teaching and learning, even though they were using ICT for relatively low level learning outcomes (such as having students use a wordprocessor to make a ‘presentation copy’ of their stories, for example).

During 1999, following a change of state government, Education Queensland promoted an extensive consultative process for development of a long-term vision, which was to become the *Queensland State Education - 2010* (Department of Education 1999b) vision statement. As indicated in Chapter 1, this was an ambitious initiative, which envisioned a ‘new paradigm for teaching and learning’ (Department of Education 1999a, p. 19).

When I first heard about the development of a new vision statement, I wrote to the Minister for Education to express my concern that a new vision statement would
have the effect of dispersing the momentum that had been developed around the major *Leading Schools* reforms, including their focus on authentic pedagogy. In the context of the development of ‘a new curriculum/pedagogy/assessment framework in line with the 2010 framework’, Luke (1999b) commented on his observation of related concerns in schools, noting that,

…people in the field had a real case of ‘change fatigue’ – that they had been quality assured, curriculum reformed, SPSed, LOTEd, Leading Schooled and so forth to the point where they weren’t listening. But as importantly, having visited dozens of schools and observed over 300 classroom lessons as part of the Longitudinal School Restructuring Study – Lingard and I felt strongly that there was quite literally no passion or belief in the system – that people didn’t know where the system was going… and what to believe in.

There was an irony in the fact that the new vision statement focusing on addressing misalignment between policies, was itself contributing to the derailment of a major reform agenda. Nevertheless, the Queensland State Education - 2010 vision was certainly a large scale and, to me, inspiring change agenda, and its general thrust seemed to me to have much in common with the reform agenda it replaced.

In October 1999, I made several postings to Education Queensland’s “2010” online discussion forum, and recorded these in my Field Journal. In the first, I raised issues of assessment and relationships as being central to a paradigm change in school culture.

*[Field Journal Extract: 19 October 1999]*

> Terry Moran said [in a paper prepared for this discussion – see also a reworked version, Moran 2000, p. 2]:
> ...3. And yet the Year 11-12 curriculum is still dominated by a rigorous study program designed to facilitate tertiary entrance procedures.
> ...4. We need to... transform the way learning occurs.
> ...5. Teachers that make the best use of contemporary learning theory.
The “hickory stick” that does still exist, and which drives what happens (and doesn’t happen) in schools, is the application of ‘industrial age’ assessment/evaluation/accountability demands. These demands contradict contemporary learning theory and militate against the adoption of a new student-centred learning & teaching paradigm... Point 3 identifies this problem for Years 11 & 12, but it applies at every level from P to 12.

Beyond this, I believe we need to change school culture and the quality of relationships that exist within schools. Do kids enjoy school? Do they find it interesting and meaningful? Do they feel respected and valued as individual, autonomous people? I don’t think using the jobs argument is going to keep a lot more kids at school. They need to feel it’s a satisfying place to be.

[End Field Journal Extract: 19 October 1999]

[Field Journal Extract: 22 October 1999]

I was delighted that one of Education Queensland’s policy development personnel made an open invitation for suggestions on how the relationship issue could be addressed. I took the opportunity to elaborate on my thinking, and sent this message to the discussion list.

[An Education Queensland curriculum policy officer said:] “I wonder whether anyone will chance their arm and suggest how, precisely, this (improved quality of relationships in schools) might be accomplished. I agree that it is one of the great challenges for us at this time.”

The most crucial factor determining the quality of relationships is the way in which power operates in them, and schools are still environments with rigid structures of power and authority. We still dictate to kids for at least ten of their formative years what they should know and what they should do (or should not do). As Alan Luke said, the “schools
are right because they embody mainstream culture, and all the kids who fail are just deficient in mainstream culture and should be fixed argument – That’s got to be avoided at all costs”.

The policy of student-centred learning needs to be appreciated and interpreted broadly and deeply as having implications not only for some minor learning decisions we allow kids to make or contribute to, but also for the broader decisions. As Jenny Galligan said [in this forum], “how much respect do we show for them and their creativity and understanding when we do not give them opportunities to lead us into the unchartered waters of their future? Their participation in decision making is a key and a gift.” Most importantly, a student-centred approach and a concern for quality, productive relationships in schools, also has implications for the ways we speak to kids, organise them, evaluate them, and otherwise seek to influence their behaviour. In short, teachers and the department need to show kids a lot more genuine respect at every age level...

If we are looking to significant educational changes that will keep pace with and anticipate changes in society, we surely must address the issue of the megatrend toward the dissolution or restructuring of hierarchical and bureaucratic institutions, and the social justice/equity trends of increasing respect for, and empowering of, individuals and minority groups. Issues of power and control are recognised as central to current changes in society, and to unlocking the creative and productive capacities of individuals and organisations.

[End Field Journal Extract: 22 October 1999]

[Field Journal Extract: 26 October 1999]

In response to these comments, a teacher participant in the online discussion asked how we could address the abovementioned megatrends when we need a system to manage funding and numbers of people. I responded as follows:
In answer to Z’s question, a big organisation like EQ needs to make a genuine shift from an emphasis on control and accountability to an allowance for autonomy and responsibility. The department needs to concern itself more with supporting schools, teachers and students, and less with controlling them. There is clearly a fundamental contradiction here, for an organisation beginning to espouse the principles of student-centred learning. The rhetoric of student-centred learning alone will not change reality.

Some of this contradiction is reflected in Bob McHugh’s [Assistant Director-General Education Services] focus paper. While predicting that schools will be, for students, a “centre of peace, order and stability”, he affirms the view that “once the curriculum is decided... [teachers must] be explicit in informing students about what is intended, what outcomes are being sought, the learning experiences to be engaged in and what is non negotiable”.

In short, to bring about significant change from the student’s point of view, we need to overcome the huge inertia of the culture of control and accountability, to make room for some significant degree of trust, of autonomy, of empowerment of schools, of teachers, and especially of students. School Based Management has been a beginning, but an extremely minimalist one.

[End Field Journal Extract: 22 October 1999]

A major reform project, or more correctly, a major school-based ‘trial’, coming under the umbrella of Queensland State Education – 2010 was the New Basics Project, which sought to confront ‘the challenges of these dramatically changing times’ by focusing on a coordinated ‘triad’ of New Basics curriculum organisers, ‘authentic assessment’ Rich Tasks, and Productive Pedagogies (Department of Education c1999, pp. 2-3). In October 1999, Education Queensland began hosting an online discussion forum to support the development of the New Basics Project.
The archives of that ‘Framework’ discussion forum are maintained online in the public domain (Department of Education and the Arts n.d.). Inspired by the potential of the Queensland State Education – 2010 vision and of the New Basics Project to facilitate the realisation of significant positive changes in the way students experience schooling, and the impacts of that experience, I participated actively in the online Framework discussions, especially during the last two months of 1999. (Quotations provided below from that online discussion are cut-and-pasted directly from the archives, so that language technicalities are as per the original postings.)

The New Basics trial came at a time when Queensland state schools were beginning to trial and implement the first (Science and Health & Physical Education) of the Outcomes Based Education syllabuses for all Key Learning Areas, being developed by the Queensland School Curriculum Council (QSCC) (now Queensland Studies Authority). The following comments by Assistant Director-General Education Services, Bob McHugh, are indicative of the philosophical and political misalignments characterising curriculum policy in Education Queensland at that time. The authoritarian tone of these comments (McHugh 1999, p. 2) about the nature of new approaches to curriculum contrasts starkly with the tone of Director-General Moran’s comments, quoted above.

The start of Semester 2 [1999] marks an important turning point in the history of curriculum for Queensland schools...
Three key beliefs underpin the implementation of the new syllabuses in state schools:
• There are certain things that all our students need to know.
• We should be able, as a system, to state clearly and publicly what these things are.
• We should be accountable for ensuring our students achieve them.

Notwithstanding McHugh’s declaration of an historic turning point, the New Basics and QSE-2010 agendas arrived with such fanfare, there was widespread interest in
them, and an assumption by many that the New Basics would soon become the framework for all state schools. This perception was encouraged and/or reinforced by statements, such as Herschell’s (1999), that the New Basics Project was about ‘development of Education Queensland’s Curriculum/Pedagogy/Assessment and reporting framework’, and by Queensland State Education – 2010 (Department of Education 1999), the guiding strategic document for state education in Queensland. With regard to ‘curriculum for the future’, for example, that document states that,

A framework is needed: one that coordinates curriculum, pedagogy and evaluation in providing an effective service to schools and teachers … one that optimises students’ opportunities for achievement of relevant and powerful skills and knowledge… The framework should be based on the New Basics required for work and social life of the future… (Department of Education 1999, p. 10)

The ‘conflict’ of agendas – the new OBE syllabuses, and the New Basics Project – was a source of considerable misalignment. For example, Roberts (1999), an Education Queensland District Director, commented on the Framework online discussion forum that:

Schools are keen to push at the boundaries of what is often described as an overcrowded curriculum. However in order to do so they risk "losing" the public who are only now beginning to come to terms with the language of KLA’s. The challenge is to bring not only individual school communities along with [New Basic trial] project schools but also the broader communities. Schools who appear to be “tinkering” with the established KLA organisation for “new basics” risk being tagged as “dumbing down” their curriculum.

Nevertheless, within the early discussions regarding the precise ‘shape’ the New Basics Project might take, the issue of alignment between curriculum, assessment and pedagogy internal to the New Basics Project was central.
I addressed this issue in my first contribution to the online Framework discussion (mistakenly attributing a quoted statement to Deputy Director-General Professor Allan Luke, instead of its actual author, Neville Grace [1999a]):

Allan [sic] states that “If the ultimate reality is that outcomes are mandated, and pedagogy is the best response teachers can make, then assessment should reflect pedagogy.” I believe there is a crucial error in causal sequence here. The “ultimate reality” is that assessment will always reflect and serve the mandated outcomes (this is what we want, let’s check that it’s happening), and it is well established by research and the common experience of teachers that assessment drives pedagogy, not the other way around (if they’re gunna check that this specific thing is happening, we better do our darnedest to make sure we can demonstrate that it is, even if we achieve nothing else). It’s not that “...if students experience poor pedagogical practices then they should logically expect these to be mirrored in inadequate assessment practices”, but rather the reverse.

The bottom line is that, if “…the ultimate reality is that task outcomes are mandated, non-negotiable expectations”, it makes no sense at all for us to talk about student-centred pedagogies. The only way in which it might begin to make sense is if those task outcomes are made broad, generic kinds of skills, abilities and knowledge, each of which gives genuine scope for mastery through a wide variety of activities/experiences. We can’t be specific outcome-centred and student-centred at the same time. Such an attempt is just another manifestation of the prevalent one size fits all, closed-ended philosophy that de-centres the student. (Seaton 1999b)

A recurring theme in the Framework discussion focused on the tension between a perceive need for common tasks on the one hand, and ensuring student relevance and engagement, on the other. Gale (1999) made the following comment:
Medical pedagogy has for some time included a ‘problem’ based approach to learning, others have adopted similar things like ‘situation-based learning, etc. What these enable, it seems to me, is to focus on meaningful tasks or cases from which tasks are generated.

I liked the implication in Gale’s comment, that it would be important to ensure flexibility within the New Basics Project, rather than having all Rich Tasks mandatory. Hoping to give people further food for thought on this point, I responded with information about the resources for problem based learning I had put in the KidSolutions website:

Those interested in Trevor’s comments might like to look at one possible approach to this kind of learning - guidelines and resources for teachers and students I’ve put on the web at... (Seaton 1999c)

Luke posted a response to a contribution I had made (Seaton 1999d) regarding the need to reconcile mandatory rich tasks to student-centredness. Luke (1999d) stated:

personally, andrew. I’m for ‘student-centreness’ in the Deweyian sense that the curriculum should be geared to the background knowledge, contexts and relevant to the lifeworlds of students. I’m not in favour of ‘negotiating assessment outcomes’. I believe that teachers have or should have legitimate epistemological authority as ‘knowers’, as mentors, and as master of the technologies of communications and research that are required by these tasks. My sense is that we should mess around with the ‘rich tasks’. They should be tough, difficult, and assessed with rigor. The student-centredness can occur by giving teachers the flexibility in pathways, pace, materials, etc. - how they might construct the varied zones of proximal development - to get there. But the judgement needs a hard edge.

The Rich Tasks did seem to me to be a rich and potentially flexible basis for learning activities. I felt that the bold attempt of the New Basics Project to move
away from the atomisation of curriculum to active engagement of students with ‘whole’, purposeful situations and ‘problems’ held great promise. Much would depend on the pedagogy adopted by individual teachers. My dominant concerns throughout the online discussions of late 1999 were twofold. The mandatory nature of the tasks was likely to render them less meaningful for many students. Secondly, despite the frequent reference to student-centredness, recognition of individual construction of meaning was consistently absent from discussion and policy statements, let alone emphasised as a ‘new’ guiding principle or theoretical underpinning. I agreed with Luke (1999c) that the Rich Tasks and New Basics materials that had been produced up to that time reflected the principles he identified from his interpretation of Vygotsky, Dewey and Freire. However, I felt then (and feel with greater conviction now, as I argue in Chapter 5) that it was too narrow an interpretation, and that what was left out is crucial.

In the context of the late 1999 online Framework discussion, without having thoroughly thought through a coherent theoretical framework myself until some time later, I endeavoured to grapple more with the issue of student-centredness in the following posting (Seaton 1999e), in response to the previous two from Luke.

I agree with much of what you say, Allan, but what if some/all of the non-negotiable assessment outcomes are not relevant to the background knowledge, contexts and lifeworlds of some/any students (ie. the kids don’t think they are)? We can’t talk of student-centredness where all “legitimate epistemological authority” remains with teachers (or those who decide, without negotiation, what assessment outcomes the student must master).

As you say Allan, teachers (and curriculum policy makers) have that epistemological authority now, but while the rhetoric of building on students’ background knowledge and notions of relevance have been around for quite a while, and teachers have had some “flexibility in pathways, pace, materials, etc.”, schooling has not been and is not remotely
student-centred. Ask the students. I don’t see student-centredness as letting the kids do what they want. But the “tough, difficult and rigorously assessed” tasks they undertake as education must be perceived by them as purposeful. This constructivist principle was expressed well in the Years 1-10 English Language Arts Handbook [Department of Education 1991b, p. 6], “Worthwhile learning activities are purposeful in two senses. First, they involve students in using language for genuine personal and social purposes. Second, they help students learn. In both cases, it is the learners’ purposes which are important. Unless they are committed to both purposes, they are unlikely to achieve either”. Do we think we should decide what another person’s interests and purposes should be? Do we think we could do so? We can’t. And the heart of the problems in schools is lack of student engagement.

I think the idea of true respect for young people is quite foreign to our culture (both educational and social), but it is here that I think the potential for real progress lies.

Luke (1999e) responded with this:

i agree with your point about engagement and like the ELA materials you’ve cited, Andrew. But a question: how do we do with the problem of ‘dumbing down’ that occurs in ‘negotiated curriculum’. need it? and how would you deal with the difficult technical problems about getting accountability around outcomes and standards?

I felt encouraged by this response. I felt that my efforts to focus some thought and discussion on the issue of engaging individual learners were bearing some fruit, particularly since I felt the ‘technical problem’ to which Luke referred could be resolved.

Before I had opportunity to reply, Gray (1999) commented:

Allen - I disagree with your assumption that a negotiated curriculum is necessarily a dumbed down curriculum. To
negotiate requires some self knowledg and an ability to translate intended learning outcomes into a particular context... It is not without academic rigour.

I formulated the following response, to suggest how, at the time, I felt student-centredness and accountability could best be reconciled (Seaton 1999f).

Allan, I think the problems of avoiding dumbing down in negotiated curriculum, and of getting accountability around outcomes and standards, have the one solution.

There are two elements to consider. The activity, and what’s learned through it. Accountability is concerned with 'what’s learned'. It doesn’t need to be concerned with mandating the activity, so long as through it some mandated things are learned. The actual activity can be negotiated by teacher and student so that the student sees it as meaningful and purposeful, and the teacher is satisfied that through it some non-dumb, mandated things can be learned and demonstrated (rigorously and all the rest).

It has already been acknowledged that content is not the crucial thing. But nor is requiring every student to perform the same task. So what are the crucial things we want young people to learn (to know, to do, to be)?

Over the past decade there’s been a lot of discussion of the notion of genres – not limited to the traditional, narrow idea of literary genres, but genres understood as “any purposeful activity that is characteristic of a cultural community; has a characteristic staged generic structure...” (ELA Handbook [Department of Education 1991b, p. 18]).

Just like with genres, MacIntyre (After Virtue: a study in moral theory, 1981 [p. 175]) explains that we develop skills, and qualities of mind and character by participating in 'practices’ which he defines as “...any coherent and complex form of socially established cooperative human activity through which goods internal to that form of activity are
realized in the course of trying to achieve those standards of excellence which are appropriate to, and partially definitive of, that form of activity... (For more on this see http://www1.tpgi.com.au/users/aseaton/services/curric.htm [No longer available online])

Describing the same sort of idea, Morrison and Collins (1995 [p. 43]), use the term ‘epistemic fluency’ to describe the ability to participate in different culturally patterned ways of constructing knowledge, “…to recognise and practice a culture’s epistemic games, with their associated forms” (For more on this see http://www1.tpgi.com.au/users/aseaton/services/review.htm [now available at http://www.andrewseaton.com.au/review.htm]).

The cross curricular Further Literacy Inservice Project (FLIP) [Department of Education & Brisbane Catholic Education Office 1990] materials used the term genres also, and emphasised the fact that, regardless of the curriculum area you are thinking about or working in, the genres describe the typical ways of knowing and doing.

So, it seems to me that what we think young people should master are all the key genres/practices/epistemic games of national and global culture. Our curriculum framework should identify these, and accountability demands focus on their acquisition/mastery. But most of these genres/practices/epistemic games can be used/experienced in very many different activities/contexts. For example, if the scientific experiment is an important genre for me to master, there is no need to mandate a particular task involving an experiment, simply to mandate that some activity be undertaken that the student sees as meaningful and purposeful, and that involves use of an experiment (with all the standards, etc).

In other words, the essential learnings can mostly be generic (same root as genre), allowing the student and teacher to
negotiate the specific activities/tasks. This will enable a genuinely student-centred approach to schooling, while satisfying society’s legitimate expectation that the education process will assist the young person to function effectively within society, and fulfilling reasonable demands for proof that this is happening (accountability).

The first response to these comments came from an interstate teacher educator. I found them most encouraging, because they echoed my twin concerns of sufficient flexibility to address individual engagement and meaning, and lack of a clear, coherent and viable set of guiding principles or theoretical constructs.

...A final comment I would like to add to this great online discussion is that I like Andrew Seaton’s comments. I particularly like the use of the concept of ‘generic skills’. In NSW teachers are overwhelmed with outcomes and indicators from the 6 KLAs. What many are struggling to do now is find a common generic set that students can demonstrate in their learning. I will end my ‘two bits worth’... by suggesting that unless the changes suggested by Luke and others are supported by effective professional development in the theoretical and practical underpinnings of a qualitative evaluation paradigm, teachers and others will overlay their old paradigm bell curve, right/wrong understandings of assessment and evaluation over all they do. It will be like trying to force a nut onto a bolt that has a different thread. The results - it wont work. (Turbill 1999)

I had been looking forward to a continuation of the exchange between Luke and myself – to hearing Luke take up discussion of my answer to his question regarding how to avoid dumbing down and accountability problems. However, I felt the response (Luke 1999f) was rather tangential and dismissive:

great exchange between andrew and jan. and i was about to get worked up over 'genres', having been a veteran of the genre-wars of the last decade (like jan). i take her point about the professional development needed... Remember Mike Apple’s explanation: that ‘deskilling’, the separation of conception
from execution, of thinking from pedagogy, occurs when teachers are reduced to ‘paint by numbers’ technocratic curriculum (lots and lots of atomised outcomes, and standardised tests to check them)… The rich tasks require ‘teaching as intellectual work’ - as requiring critical ‘readings’ of kids and communities, effective use of diagnostic data, staffroom dialogue, engagement with new ideas, pedagogical experimentation, professional exchange, new thinking and theory...

p.s. can’t stand ‘generic skills’ - it’s the old competency language. and, after a decade, found a good definition of ‘genre’ from Janet Giltrow at Simon Fraser University - ‘stabilised-for-now social action’

I agreed with Luke’s (Apple’s) comments about technocratic curriculum. However, I felt annoyed at his disengagement with our line of discussion, and in my next posting (Seaton 1999g), I allowed it to show, while hoping to remain professional. Then I introduced some discussion of issues relating to the third aspect of the New Basics ‘three-message-system’, pedagogy.

Allan, your response to my solution to dumbing down and accountability problems was nicely handled. How can anyone pursue reasonable debate with “a veteran of the genre-wars of the last decade” who “can’t stand (“the old language of”) ‘generic skills’”? A few words of response came to my mind, but I didn’t dwell on them. Let this suffice. Call them what you will, we will be teaching genres/epistemic games (in the senses I defined), regardless. They will be the processes students engage in to grapple with (“the Deweyan - state of the art, 1902”) tasks set for them by those with “legitimate epistemological authority”, and later, if they’re lucky, to function effectively in society.

On a different tack, I’d like to make some comment about the Productive Pedagogies workshop held in Townsville over the weekend. I was disappointed and disturbed by it. I think the current change agenda in Queensland is potentially the most
exciting and beneficial the world has seen on a large scale. But it only has that potential, there is no inevitability about it. Historically, few educational innovations have given rise to significant, sustained changes, and there are disturbing signs that the current one might not either.

Repeated reference was made during the workshop to research by Newmann et al which, it was said, showed that authentic pedagogy with a focus on standards for intellectual quality gave rise to significant improvements in learning outcomes, especially for underachieving students. I found this puzzling. My own review of Newmann’s study (Newmann, F., et al. [1996] “Authentic Pedagogy and Student Performance”, American Journal of Education, Vol 104, No 4, pp.280-312) found his research to be deeply flawed (see http://www1.tpgi.com.au/users/aseaton/services/innovate.htm [now available at http://www.andrewseaton.com.au/innovation.htm]). Newmann makes quite a few loose and contradictory statements. But a significant statement is this: “Limitations in the design of the study may cast doubt on the extent to which we have established a clear causal relationship; we have not shown that interventions that deliberately set out to use these standards will boost student performance” (p.305).

Why do I raise this point if I am for authentic pedagogy and for intellectual standards, which I am? Because Newmann’s research does not study authentic pedagogy as it purports to. In their preliminary discussion and review of literature, Newmann et al. identify five constructivist/student-centred principles of teaching. It is highly significant that, in defining the standards for authentic pedagogy which form the basis of their study, they include only two of the five principles. The neglected principles are the very principles that would make the pedagogy authentic or student-centred. On top of that, they neglect to gather any data from students!
Okay, what’s this got to do with what’s happening in Queensland? Just this. Productive Pedagogies is an attempt to encompass more than Newmann’s study of authentic pedagogy, that is, more than his emphasis on intellectual quality. Fine. But I think we are in danger of being distracted from the central issue, as Newmann et al. were. I’m not convinced that what the School Reform Longitudinal Study found and studied really included authentic pedagogy or student-centred, social constructivist [I understand that term differently in 2005 than I did at the time this was written] learning and teaching. The list of twenty characteristics of productive pedagogy includes categories for the key elements of constructivist/student-centred learning and teaching. However, by being summarised in an observation checklist and applied in short, isolated lessons they have trivialised/superficialised the issues they set out to measure. In such a narrow context, trivial and insignificant manifestations would qualify for recognition. Put another way, a highly qualitative issue is described by a crude and highly quantitative instrument.

Of even greater concern than the use of such an instrument to measure manifestations of productive pedagogies in research, is that much of the workshop consisted of practice in the use of the observation sheet in ten minute microteaching segments and role plays, further reinforcing the assumption that the characteristics of student-centred/social constructivist learning and teaching can be meaningfully built in to isolated traditional lesson contexts with traditional subject content and traditional student learning outcome expectations. An invitation was made for a few participants to give a mini lesson to demonstrate what they thought productive pedagogy might look like. When I offered to describe an activity that might reflect the characteristics of productive pedagogies, I was refused. “We just want people to role play a teaching situation so workshop participants can practice using the classroom observation sheet.” (If you want to check out the activity I was going to outline, see
If productive pedagogy continues to be promoted as something teachers can do by making some minor adjustments to what they’ve always been doing, then hope for significant, sustainable change is lost. Put another way, to apply Allan’s paraphrasing of Michael Apple to a slightly different issue, “It’s safe and easy to ‘paint by numbers’ [in terms of teachers’ own pedagogy], but ultimately can be extremely educationally counter-productive”. Moreover, with 20 characteristics of productive pedagogy on the checklist, teachers will see that they are already satisfying many of them, and the likelihood of confronting the challenge of the remaining, perhaps more fundamentally student-centred/constructivist characteristics, will be much reduced. Evidence the fact that EQ’s formulation of the Principles of Effective Learning and Teaching, which include most of the principles identified in the productive pedagogies characteristics, and which have been around since 1994, have not lead to significant changes in pedagogy in the vast majority of schools.

An illustration of what I mean is provided by a discussion by a teaching staff of what could be done to reduce the incidence of bullying at school. “Let’s start by listing everything we’re already ‘doing’”, someone suggested. Twenty minutes of brainstorming produced a full whiteboard. How much serious discussion do you suppose followed, regarding what new strategies should be adopted?

I believe we need to focus on a few pedagogical fundamentals that need to be done differently, and that they should be in the areas of relevance and student direction of activities. Why? Because we can forget about intellectual quality and inclusivity benefits if students are not engaged. Which brings me back to where I started, so I’ll stop.
I was aware that I was raising quite a number of issues that leaders of the New Basics Project and others might find very challenging. I was encouraged, however, by feedback that suggested people appreciated the discussion and saw it as positive. One such piece of feedback appeared as a Framework posting (Satterthwait 1999) following the above:

Andrew, I had a quick look at the Kids Solutions pages that you referenced in your thoughtful commentary. I really like it! It clearly identifies the different dimensions to tasks that need to be considered in the design of ‘authentic’ assessment. I use similar dimensions when teaching preservice secondary science teachers about how assessment can work—with considerable potential to be a pivotal learning experience. It also empowers the teachers; they do not have to test in the way it was done to them. Giving license to have the audience assess the product (peer-assessment in oral presentations), opens doors to more imaginative and relevant types of tasks that can be used as part of a portfolio. Nothing teaches reflection or self-evaluation like an assignment that requires a self-appraisal questionnaire to be completed in examination conditions. Thank you for directing my attention to this website.

The discussion about issues of student-centredness, and the tension I had begun to sense it was creating in the online discussion, was making it clearer to me that the deep issues of learning and pedagogy are inextricably bound up with the issue of agency and its two polar components, autonomy and control. I had read something about this polarity in the context of QSE-2010, written by either the Queensland Minister for Education or the Director-General of Education. I had forgotten which it was, and no longer had the reference, but I decided to bring the matter to the fore in my next posting to the online forum (Seaton 1999h):

I mentioned earlier that, following their review of literature on constructivist learning, Newmann et al. [1996] described five essential components of constructivist pedagogy (1, 4 and 5 are the ones they left out of their study.) The five are: (1) "teachers must be familiar with,
respect, and actively use students’ prior knowledge” (2) “teachers must emphasize opportunities for higher-order thinking and in-depth understanding” (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” (5) “participants in the social setting for learning - students and teachers alike - must exemplify norms of collaboration, trust, and high expectations for intellectual accomplishment”.

Xiaodong and his team also identify five key principles that can be used as we attempt to design and develop efficient, constructivist learning communities (1995, “Instructional design and development of learning communities: An invitation to a dialogue”). They suggest such communities would 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.

You’ll notice, not surprisingly, that Xiaodong’s principles are very similar to those identified by Newmann. You’ll notice also, that they constitute issues of relevance and student direction of activities.

But we have reached an impasse - the conversation has ceased. Why? Because we have come up hard against the underlying issue - who has the power? The ultimate concern for answering to the political powers and for ranking students (which is
driving the need for common tasks, and most recently, concern for defining common, assessable sub-tasks) is very telling. Who owns the young in our society? The politicians, education policy makers, teachers, parents, or young people themselves? This is a key issue raised in the 2010 consultation as reported by Dean Wells (? Terry Moran?): respect for individual autonomy Vs ‘society’s’ demand for conformity and stratification.

For example, Hodas (1997 [should be 1993], “Technology Refusal and the Organisational Culture of Schools, 2.0”) suggests that schools are technologies and that there is a close relationship between schools-as-a-technology and, “…the institutional and organizational values of knowing, being, and acting on which the school itself is founded: respect for hierarchy, competitive individualization, a receptivity to being ranked and judged, and the division of the world of knowledge into discreet units and categories susceptible to mastery”. (Also see Hodas’ [sic – should be Cuban 1993] article, “Computer Meets Classroom: Classroom Wins”.)

The most powerful forces operationalising these values in schools are assessment and evaluation practices (see Eisner [e.g. 1991, p. 81], heaps of others, your own experience and the content of this online discussion). In the 2010 online discussion, Pat Heenan wrote about our tendency to overlay the new paradigm on the old, and how we really need to make a quantum leap to the new. Yessiree.

Now, here is a historic, make or break moment. Can we (and do we want to) make a quantum leap to find a creative new way to make respect for and empowerment of students the defining value and characteristic of schooling, instead of control and evaluation? To do so, our greatest need is for creative new ways for describing each student’s learning. The assessment issue is the bottom line, and if we fail to actualise a fundamentally different philosophy of assessment and
reporting, the new framework won’t be a new framework. If we are concerned with teachers exploring new ways of knowing, doing and being (Ed Views, 1998 [Department of Education 1998a, p. i]), and, as Terry Moran says we should be, with teaching students new ways of knowing, doing and being (the four pillars stuff [Delors 1996]), then we must think outside the square. Lucky you, Allan. It’s in your hands.

This posting prompted a posting that included a request for assistance in ‘developing an inclusive curriculum framework’ at a Special Education Unit, and some words of encouragement: ‘I love reading your contributions Andrew!!! I keep finding myself nodding through all your key points you make.’ (Poletto 1999)

The next response to my contributions took us closer to the heart of the question about whether the vision of the New Basics Project amounted to the paradigm shift that so many of the sources cited above, both within Education Queensland and beyond, were calling for. Ladwig (1999) made a lengthy commentary on some of the points I had made in my posting regarding misgivings about the formulation of Productive Pedagogies. My response was also quite a substantial one (Seaton 1999i). (The sections beginning with an asterisk * and further indented are where I reproduce parts of Ladwig’s [1999] original comment.)

...Last year EQ promoted Newmann’s definition of ‘authentic pedagogy’ in Ed Views 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.” [Newmann 1995, cited in Department of Education 1998a, p. ii]

My purpose in raising the issue of Newmann et al.’s research was to point out how far removed the focus of their study was from THAT definition of ‘authentic pedagogy’. (It seems many, including Newmann, now use the term to refer almost exclusively to issues of intellectual quality – a huge shift!)
Are we not talking student-centredness in a clear and direct way in the ABOVE definition of 'authentic pedagogy'? EQ promotes the principles of student-centred, constructivist learning and teaching across the state through Education Advisors - Effective Learning and Teaching. In EQ the term ‘student-centred’ is actually used to describe principles of effective learning and teaching in the Minimum Standards for Teachers - Learning Technology checklist, and in other curriculum documents.

* If, however, Andrew is looking for his more student-centred vision, then he is correct, that’s not the central concern of either the CORS work nor the QSRLS.

It’s not MY vision, James. I support the Newmann and EQ perspectives described above (and by others in many other places). It IS a shame that, as you say, they are not the central concern of QSRLS.

*...it is very important to keep it very clear that Newmann and Associates DO NOT CLAIM that AP is ‘constructivist’...

Newmann’s report DOES describe an intimate connection between authentic pedagogy and constructivism/student-centred learning and teaching: “Resistance to student-centred teaching may be due in part to teachers and parents who have already sensed this problem [participation in activities regardless of the intellectual quality of students’ work - what Allan calls ‘dumbing down’]....The standards of intellectual quality for authentic pedagogy and evidence of a link between authentic pedagogy and student performance should advance research and practice on student-centred, or constructivist, teaching.” ([Newmann et al. 1996] pp.281-282) So, it would seem that a student-centred vision IS (or WAS) integral to the research concerns of Newmann.
* On the question of whether or not teachers are already doing most of the things measured [on the productive pedagogies checklist]...

Whoops! My word was ‘many’ not ‘most’. And even then, I’m suggesting that with a superficial application of a crude checklist, it would be easy for teachers to PERCEIVE that they were doing many of the things to a satisfactory degree.

* Actually, I’ll simply have to disagree on this last point [that we can forget about intellectual quality and inclusivity benefits if students are not engaged]. Schools and teachers can make all the relevance and allow all the student direction in the world without actually improving what it is that students walk away with from schooling.

Of course, James. I’m saying engagement is a necessary, not a sufficient, condition of effective learning.

* Andrew is exactly correct that seeing such an agenda come to reality would mark a massive revolution in schooling (QSRLS found that student-centred practices are the MOST rare of all).

Yeeeppp!!! THAT’S my point! THAT’S why I think it’s so important for EQ to make issues of relevance and student direction of activities a clear priority in a new framework of pedagogy/curriculum/assessment. Anything else will be “fudging around the edges”.

*I question the realism of anyone who really believes (a) schooling could ever be conducted without some imposition...

Agreed. We are not talking about students doing whatever they want. We are talking about respecting relevance and purposefulness from their perspective, and the value of
significant levels of student direction and control of learning and action (with all the intellectual quality, etc).

*(b) [I question whether] any centralised education authority that currently exists is about to end its regime...

Agreed. But substantially restructure its mode of operation in response to social changes and social pressure? I believe we WILL see that happen. Many large, centralised organisations nationally and globally are restructuring in major ways. Fundamental restructuring of education is being explored in a number of places. One example of substantial recognition of the inconsistencies between conventional school environments (including one-size-fits-all assessment) and student-centred, constructivist learning environments is California Senate Bill 1448, passed by the California House of Representatives in 1992, enabling the state to grant special charters to individual schools, waiving the requirements of the education code (especially mandated assessment requirements), in order to experiment with new methods of teaching (see, for example, San Carlos Charter Learning Center at http://scclc.sancarlos.k12.ca.us [San Carlos Charter Learning Center 2004]).

*(c) [I question whether] any general population born and raised in such a regime will be all that thrilled about it disappearing... really a very large philosophical, sociological and political question, and not one that will be settled in the near future.

Those who’ve been emailing me and approaching me (people “born and raised in such a regime”), say THEY’VE been nodding their heads. Many would agree with the need for the kind of change emphasis I’ve been advocating (especially the students!). When enough people do, it’ll happen...
Two additional points of interest in Ladwig’s (1999) posting warrant comment from my current perspective. The first relates to his comments about ‘the imposition of an epistemic authority’ and about ‘very old, very unresolvable, binary curriculum divides’. My synthesis of a Dynamic Paradigm of Learning and Change (Chapter 3) has led me to a clearer appreciation (1) that ultimate epistemological authority *does* lie with the individual, since the individual is the ultimate agent in meaning making, (2) that perception of authentic constraints, whether external (experiential evidence of non-viability) or internal (logical inconsistency), plays a vital role in learning (revision of our action schemes or internal reference standards), (3) that some understanding of major ways in which others in our culture organise experience (interpret the world) *is* important, and (4) that the assistance and inspiration of ‘educated’ educators, as a secondary source of epistemological authority, is vital for people to problematise assumptions and real situations.

Secondly, it is most interesting to note Ladwig’s (1999) statement that a student-centred vision of the kind I identified in specific quotations from Newmann and Education Queensland are ‘not the central concern of either the CORS work nor the QSRLS’, in stark contrast to Education Queensland’s position in 1998 that precisely that definition of student-centred learning (authentic pedagogy) was at the ‘heart’ of the reform agenda (Department of Education 1998a, p. ii). In connection with this issue of desirable pedagogy, I note two other comments. Ladwig (1999) suggested the problem-based learning pedagogy I had proposed to share at the workshop could not be coded for elements of Productive Pedagogy, because nowhere within it could a ‘specific lesson’ be found. He went on to suggest that many of the reasons the Productive Pedagogies were observed so rarely in the QSRLS research ‘relate to how school [sic] organise their work’. These comments served to clarify in my mind the need in a more viable educational paradigm to move beyond limiting assumptions/constructions/contexts such as the notion of an isolated lesson being the likely context for enabling and observing meaningful learning. It also confirmed my sense of a need to develop different curriculum
It was apparent that others participating in the online discussion forum were also concerned about issues of flexibility with the Rich Tasks. One possible solution, proposed by McKeown (1999), involved the notion of a task-o-rama, wherein students could make up a Rich Task by selecting one item from a group of processes/tasks, one from a list of topics, and one from a list of output formats. McKeown’s (1999) posting received several supportive responses. I was keen to support moves in this direction, and posted the first response the same day (Seaton 1999j).

Yes, let’s think along the lines Lindy suggests. Some or all of the process and presentation format items could even be mandated, and be the focus of assessment, but their order of coverage and the task context/topic could be left to negotiation between teacher and student. I wouldn’t like to see topics mandated though. Hopefully, a wide variety of topic options would be offered, or preferably, the choice of topic would be left entirely open to negotiation.

Lindy’s suggestion would address Allan’s concern with “how we’d get flexibility but maintain intellectual engagement and depth” and “recapture the accountability agenda back from standardised testing”, without fixing the actual tasks apriori, just some of the sub-tasks (process and presentation items).

Another challenge to the viability of the thinking guiding the New Basics framework came in the form of a posting from education consultant, Joy Schultz (1999).
attributes of the life-long learner”, which can be found in the Rationale of each of the new QSCCC syllabuses - ie knowledgeable person with deep understanding, complex thinker, creative person, active investigator, effective communicator, participant in an interdependent world, reflective and self-directed learner...

The benefits that I see of schools working with the seven attributes rather than the New Basics are: (1) The attributes would put the emphasis on the learner and on the pedagogy required for students to demonstrate the attributes and the overall outcomes, rather than what I see as four rather disparate ‘things’. Along with Andrew Seaton, I believe that the revolution we need to have is a pedagogical revolution rather than yet another reorganisation of curriculum structures...

Might I suggest that a parallel trial of using the seven attributes as a framework be conducted along with the trial of the New Basics?...

Being an integrationist from way back, what really excites me is the idea of rich tasks. However, I would like to see these based around the QSCC overall learning outcomes of the attributes, rather than characteristics which come from - where?. I agree with many of the misgivings of Ray Land about the tasks, and I also wonder how adequately the KLA perspectives and skills were mapped in coming up with the tasks - considering that not all KLA syllabuses are completed. ...The KLAs exist because they have distinctive ways of looking at the world and distinctive ways of generating new knowledge. These “ways of knowing” need specific emphasis before students are capable of adequately using those different world views in an integrated task...

These comments drew a quick response in support of the New Basics framework from a member of the New Basics team (Grace 1999c).
I do not want to be seen as a “New Fanatic” who thinks that these New Basics and Rich Tasks will provide a simple answer to complex curriculum and pedagogical questions... [But] I believe that [in schools addressing the outcomes based syllabuses] the attributes [of a Life Long Learner] will rapidly be forgotten in the process of grappling with key learning area outcomes, strands, level statements and core and discretionary learning outcomes. I refer in particular to the report by Junn Kato that the seven attributes are the very things that do NOT get addressed in the professional development – and that they are the things that teachers tend not to read in coming to grips with new syllabuses. The outcomes, i.e. questions about what the clients are supposed to learn? are more likely to drive curriculum planning.

Support for this view regarding the difficulty of keeping the attributes of life long learners in the foreground and guiding pedagogy came in a posting from Grauf (1999).

Now that we have reached a point in the discussion where the 7 attributes have entered the debate I need to respond from what I believe is a fairly unique perspective. Having been a part of the very small team writing the QSCC P-10 Curriculum Framework and specifically the ‘7 valued attributes of a lifelong learner’, I hold them dear. Their intention in my mind was always to make a difference to pedagogy. To have something stand up and shout loudly for teachers that there is a mandate to spend time/effort/planning/money on doing the big important stuff. The ‘stuff’ that every parent and teacher will tell you is important. Yet, the position of these attributes within the syllabus material does not necessarily facilitate, lead or even support any significant change in pedagogy.

When I then had the opportunity to work in a new school I found that the staff and community readily held these attributes as a covenant about teaching and learning. It was what they wanted to do.
However as many contributors to this discussion have pointed out, there is still much to be done to make the attributes breathe at an implementation level. ...We did a good job of implementing outcomes based syllabuses.

What did get difficult though, was holding on to the covenant (remember the 7 attributes?), whilst sliding down the slope of syllabus implementation with a focus on outcomes.

We (as a school) had to find ways of ensuring that the attributes had a life. It was only our determination and belief in these attributes which allowed them to continue to raise their heads above the detail of the core outcomes. It remains a difficult thing to do.

...To my mind it doesn’t really matter whether it is new basics or the 7 attributes. What matters is that someone seriously gives teachers a serious mandate to be serious about the really serious stuff.

A fellow Education Advisor (EA) pursued this issue further (Agnew 1999).

...When the EAs of this State first began to learn of the new Queensland Curriculum Syllabi, we were led to believe that there WAS a starting point for the development of ALL of the new Syllabi......the Overall Outcomes ie the 7 Valued Attributes of the Life-long Learner! ...Essentially, we were told that there are certain attributes we would like ALL students to have so that they have skills which enable them to continue learning OUTSIDE the school environment and into their ‘life-outside-school’. This makes a lot of sense to me, and certainly has made a lot of sense to teachers that I have spoken to! They can see the value in developing these attributes in a learner...

...I agree with Ezette [Grauf] that the Valued Attributes are not directly ‘teachable’ things, however, this is not a bad thing if we want to move the dinosaurs of classroom pedagogy along. With the 7 Valued Attributes being the framework,
teachers are FORCED to consider what sort of learning experiences they can give a student to enable them to DEVELOP these attributes...

It was clear to me after a couple of months participating in the New Basics framework online discussion that a particular, centrally driven formulation of the New Basics framework had a great momentum of its own. However, it was also clear to me that, despite this, there was also considerable momentum to the discussion concerned with a more flexible approach. With the year nearly over, I wanted to draw my thinking around some of the critical discussion threads together. I attempted to give them some ‘form’, in the hope that thereby they might have greater, if still limited chance of adoption. To that end, I posted the following comments (Seaton 1999k).

We are considering a new curriculum, pedagogy and assessment framework, but I think (with Eric Wilson [1999]) much of the discussion has blurred the lines between these. I for one, have often found myself caught up thinking of the Rich Tasks as learning tasks (to which purpose they are, in many respects, well suited). Some recent comments have reminded me that the Rich Tasks are being developed for assessment purposes, “a fairly straightforward bid to put in ‘teacher moderation’ systems at years 3, 6, 9”. If so, what exactly are we wanting to assess? And if the Rich Tasks have been developed for the purpose of assessment, why are we asking how we assess them? My understanding of authentic assessment (I hesitate to use the term ‘authentic’ any more, since it has clearly been shown to mean quite different things over time and to different people) is that assessment should take place within the context of a student’s participation in an activity that is meaningful to them (as learning itself should). The performance of the activity itself is not necessarily being assessed, but the activity provides a non-artificial (authentic) context, “an actual doing, a social practice” within which the assessment of particular skills, knowledge and/or processes can take place.
Allan has pointed out that a constantly recurring theme in this discussion has been the need to reconcile relevance and accountability, student engagement/ownership and 'one-size-fits-all', common assessment. As some have pointed out, the Rich Tasks themselves appear to have no clear rationale as assessment tasks, and there has been wide agreement that we need some sort of assessment criteria WITHIN Rich Tasks (that is, something to assess). As I said some time ago, accountability is concerned with 'what’s learned’. It doesn’t need to be concerned with mandating the task, whether it be learning task or authentic assessment task, so long as through it some valued things (common criteria of assessment) are learned or demonstrated respectively. Several contributors have put forward the 7 Attributes of a Life-Long Learner, described in the new outcomes syllabuses as the overall valued outcomes of all KLAs, as worthy candidates for common assessment criteria. If these seven attributes describe our most valued educational outcomes, surely we should make them the direct focus of student assessment.

Moving the focus of assessment from the knowledge/skills acquisition appropriate to the industrial age, to an assessment focus on learner attributes for a post-modern age would seem entirely appropriate. This raises the matter of the term ‘New Basics’ again. We don’t want to simply add new basic skills and knowledge, or new basic ways of dividing the curriculum, to the old basic skills and knowledge, or we’re still really talking in the old paradigm. We need something that focuses on what’s important in and for the young person who is developing, a person-centred term rather than a content-centred term. Something along the lines of ‘key attributes’ (of a life-long learner) would seem appropriate. The community recognises that the accelerating rate of the acquisition and availability of information makes ridiculous the idea of a content-based education. They recognise that the old basics are not adequate to the needs of the young in today’s world, and they are unlikely to be enamoured of ‘New Basics’. (As Ray Land [1999] points out, they are also not
likely to be enamoured of a top-down, mandated list of tasks that do not provide for their children the sort of “choice and negotiation [that are] such a feature of (post) modern (adult) life”. Surveys of parental priorities for schooling have shown that narrow academic attainment rates well below concern for the development of personal qualities, including confidence and self-efficacy, and social and general coping skills. Industry also seems more interested in personal attributes such as creativity, self-management capacity, problem-solving ability and resourcefulness than in traditional scholastic grades.

A focus on the 7 attributes would be helpful in the area of pedagogy also. As Allyson Agnew [1999] points out, such a focus would help teachers make a shift from being sage on the stage to guide on the side. In short, it would facilitate a shift to greater levels of student control, ownership and engagement, while maintaining the most valued assessment anchors for accountability purposes.

I’m not one who believes there is a ‘right’ formulation of curriculum. Nor, however, do I believe that all formulations are of equal merit. In summary, the advantages of making the 7 Attributes of a Life-Long Learner (or very similar formulation) the core focus of our new curriculum, pedagogy and assessment framework would seem to include:

- provides scope for critical social research and a wide variety of activities in real life social and cultural contexts
- can allow for inclusion of learning and assessment tasks that have either a specific or integrated KLA orientation, or a specific ‘New Basic’ orientation
- provides generic elements for ‘rich’ (negotiated) learning and assessment tasks which (the generic elements) can serve as reference points for learning and teaching, and for assessment
• provides linkage between traditional, KLA focused and New Basics approaches to curriculum
• provides a new paradigm “hickory stick” (assessment framework) to drive pedagogy and other aspects of school life which support rather than contradict contemporary (constructivist) learning theory (one of the four philosophical assumptions underlying the new outcomes based curricula) and the associated student-centred learning and teaching paradigm
• brings issues of pedagogy to the fore (Neville Grace’s [1999c] doubts notwithstanding – as he (and Junn Kato [1999] and Ezette Grauf [1999]) points out, “the attributes will rapidly be forgotten in the process of grappling with key learning area outcomes…”). Ezette [Grauf 1999] put it so beautifully: “What did get difficult though, was holding on to the covenant (remember the 7 attributes?), whilst sliding down the slope of syllabus implementation with a focus on outcomes”. The 7 attributes WOULD become powerful if THEY were made the focus. Unjustifiably mandated outcomes and tasks again get in the way.
• makes feasible negotiated learning activities (around the mandated assessment anchors - 7 attributes), and so, much greater levels of student self-direction, relevance, engagement and ownership, and indirectly, much improved quality of relationships in schools
• reconciles need for significant levels of student control and direction of activities with need for intellectual quality
• compatible with portfolio assessment, self-assessment and peer-assessment methods considered by many as appropriate to ‘authentic assessment’
• focusing on generic elements of learning and assessment tasks would go some way to averting the equity problem raised by Ray Land [1999] of schools in “disadvantaged contexts”, and the logical/equity problem of generalizability raised by Kath Glasswell [1999] “that
'tasks' are social constructs that will be interpreted differently by different people”
- assists the professional development issue raised by Ray Land [1999] by putting forward the 7 attributes as a clear linkage that shows “their pedagogy and assessment practices are being supported - while simultaneously being enhanced and change -, via an initiative which also unequivocally assists more students”...

In signing off the discussion forum for the year, I wanted to express my appreciation for the opportunity of participation in such a stimulating discussion, and to convey some sense of what I felt might be achieved through such rigorous debate:

Thanks EQ, for the open discussion forum. I love this quote from a colleague’s pinboard:

Excellence can be attained if you...

- care more than others think is wise
- risk more than others think is safe
- dream more than others think is practical
- expect more than others think is possible.

However, I was not content to leave the discussion without any tangible outcome, if I could help it. In mid December, I prepared a proposal for a school trial of a pedagogy/curriculum/assessment framework focused on generic abilities and the QSCC’s Attributes of Life Long Learners, to parallel the New Basics trial. The proposal rationale contained basically the points contained in my last substantive posting to the Framework online discussion forum (Seaton 1999k). The proposal was for two interested schools within the one area to be involved in the trial, a primary school and a secondary school, with the most significant additional resource being the appointment of myself as a facilitator shared by the two schools. Project evaluation was to consist of research conducted by myself and focused on study of the school climate, pedagogical practices, curriculum guidelines,
assessment and reporting procedures, student, parent and staff perceptions of the 
learning environment, and student learning outcomes, and any research Education 
Queensland might wish to undertake or commission. I emailed the proposal to then 
Director-General, Terry Moran.

2.3 YEAR 2000
Early in 2000, I received a reply to my proposal from Professor Allan Luke, then 
Deputy Director-General of Education Queensland. It stated, in part:

I refer to your proposal dated 17 December 1999, forwarded by email to the 
Director-General of Education. The proposal referred to a trial in schools of 
a pedagogy, curriculum and assessment framework based on the seven 
attributes of a lifelong learner identified in Queensland School Curriculum 
Council syllabuses.

…I believe that such a plan could operate now within a school or cluster of 
schools as a way of fulfilling the requirements of schools to implement the 
QSCC syllabuses currently being rolled out. The framework of seven 
attributes appears in each of the syllabuses and could be used easily as an 
organising framework to promote cross-disciplinary curriculum delivery, be 
a basis for rich negotiated learning and assessment tasks and to drive 
pedagogy.

Resources are available in schools and funds are being distributed to assist 
in the implementation of syllabuses, including those for Science and Health 
and Physical Education, and for others as they become available. While 
extra funding is always welcome within schools, I do not see that extra 
ystemic funds would need to be injected to make your proposal possible 
within the existing context of syllabus implementation.

I thank you for your significant contribution to the Framework discussion 
list and for the thought that you have put into your proposal. While system
funds are not available to support what you suggest, I feel sure some schools would be interested in using your ideas as a basis for syllabus implementation. I am sure there would be much to be learned from the activity and wish you well if you are able to collaborate with one or more schools and use the experience as part of doctoral action research. (Luke 2000, pers. comm. 2 March)

I was disappointed not to be given any resourcing for a facilitating role. However, I was excited that Education Queensland had at least given approval for a school based trial. I hoped I might be able to facilitate such a trial from within my role as an Education Advisor. However, at a local level I was not allowed to do so.

I pressed ahead, in the hope of being able to facilitate the trial and conduct research outside my working hours. I sent letters of invitation to principals of schools in the area, secured commitments from several principal’s and their staffs to participate, and secured ethics approval from Deakin University Ethics Committee and Education Queensland for a research study, framed as The General Abilities Framework: A Student-Centred Approach to Curriculum, Assessment & Pedagogy: A Multi-Case Study. The research proposals read, in part:

The General Abilities Framework trial and research project focuses on the importance of grappling with the essence of a student-centred approach to teaching and learning, namely, the empowerment of, and genuine respect for, each student. The project involves the implementation of a student-centred framework for curriculum, assessment and pedagogy, relatively free of mandatory content, outcomes statements or tasks. The aims of the research are to describe and evaluate:

1. the impact of the General Abilities Framework on teachers’ pedagogical beliefs and practices
2. the impact of the General Abilities Framework on student attitudes to learning and the learning environment
the impact of the General Abilities Framework on the quality of student learning.

The hypothesis is that the framework will enable a shift in teacher beliefs and practices in the direction of learner-centredness, and that it will lead to improvements in student engagement in learning and in the quality of student learning.

I struggled for much of the year 2000 to get the trial/research project off the ground, but it was proving to be impossible without any time, funding or systemic endorsement beyond in-principle approval for the trial.

Meanwhile, though the New Basics online discussion forum continued to function, it did so with a much reduced membership and greatly reduced intensity. The New Basics school based trial was now underway, and discussion was less around the formulation of the New Basics Project and more about practicalities. Occasionally, though much less frequently now, I made a contribution to the discussion, where I felt I could address some clear need. I made one such contribution (Seaton 2000a) in response to a request for assistance regarding the Productive Pedagogies (Mostert 2000).

Willemina said:

i.e what does deep thinking (as one e.g.) [of the Productive Pedagogies] look like in my classroom? How do I embed this in my teaching? We are also involved with the IDEAS project focussing on authentic pedagogies and want to dovetail the New Basics and OBE into this. Any feedback would be appreciated.

Here are some insights and guidelines I’ve found useful, from two different sources. First, brain research tells us of four levels of knowledge:

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, and 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, The Human Brain: An ASCD Professional Enquiry Kit, Association for Supervision and Curriculum Development, Alexandria, Va., f.5, a.1, pp.10-13).

So true higher order thinking and deep learning require that experiences have personal meaning for the learner. This means that learning activities must be relevant to their interests, values and purposes, and the context of their own lives. What is most essential is that students are truly engaged in the activities through which they are learning, that they have a clear sense of ownership and personal or social purpose. Xiaodong and The Cognition and Technology Group at Vanderbilt University recognise these constructivist principles and attempt to identify their implications for what deep thinking would look like in our classrooms. We must provide students opportunities to:

- plan, organize, monitor, and revise their own research and problem solving
- work collaboratively and take advantage of distributed expertise from the community to allow diversity, creativity, and flexibility in learning
- learn self-selected topics and identify their own issues that are related to the problem-based anchors and then identify relevant resources
- use various technologies to build their own knowledge rather than using the technologies as "knowledge tellers", and
• make students’ thinking visible so that they can revise
their own thoughts, assumptions, and arguments.

(Xiaodong, L., Bransford, J., Hmelo, C., Kantor, R.,
Hickey, D., Secules, T., Petrosino, A., Goldman, S. & The
Cognition and Technology Group at Vanderbilt 1995,
‘Instructional design and development of learning
communities: An invitation to a dialogue’, Educational
Technology, September-October), p.59.)

While all the discussion about the New Basics Framework was going on, all state
schools in Queensland, apart from the 38 New Basics trial schools, were obliged to
be engaging with implementation of the outcomes based syllabuses being
progressively developed and rolled out by the QSCC. Education Queensland was
endeavouring to formulate a policy and guidelines regarding how it would require
schools to respond to those OBE syllabuses. There was great confusion about the
twin agendas of New Basics and OBE syllabuses. As an Education Advisor, and
would-be manager of the General Abilities Framework trial, I was also grappling
with how to be clear about systemic requirements and latitude. I posted the
following comments (Seaton 2000c) to the New Basics online discussion forum, in
the hope of prompting some clarification.

The Draft Policy and Guidelines for Core Curriculum for Years
1-10 in Education Queensland Schools [Department of Education
2000d] raises some important questions for schools trialing
new frameworks. The Policy is written in such a way as to
suggest it is binding on New Basics trial schools. The
implication is that the New Basics cannot function as a new
framework, but rather merely as a possible form of school
curriculum program within the “core curriculum... based on
the key learning area outcomes (and subject area outcomes for
subject area syllabuses) and level statements” [Department of
Education 2000d, p. 2]. Can someone confirm that this is so?

If it is, there are some difficult issues to resolve.
1. The draft Policy and Guidelines state that “The school curriculum program should ensure that learnings related to all key learning area outcomes are developed progressively over Years 1-10 [and] ...must identify the student learning outcomes [which] ...will allow students to demonstrate understandings in the level statements” [Department of Education 2000d, pp. 5, 2]. How are the New Basics and the Rich Tasks correlated with the level statements? If they are not correlated, how can schools adopt them, and satisfy the guidelines?

2. The draft Policy and Guidelines state that “Assessment [and] reporting on core curriculum must be based on the learning as described by level statements...” [Department of Education 2000d, p. 3]

I’m interested in hearing what New Basics project managers think, and what trial schools think about these questions, because in its current form, the Draft Policy and Guidelines for Core Curriculum for Years 1-10 in Education Queensland Schools [Department of Education 2000d] places severe constraints on curriculum innovation, and appears incompatible with the intent and the implementation of the New Basics Framework, and indeed of the General Abilities Framework, both approved for trial by EQ.

It was quite some time before those issues received any clarification. The following month, however, there were further official statements emphasising a student-centred focus as characterising the needed paradigm change. Education Minister, Dean Wells, stated that ‘a student-centred focus to education was the way of the future’ (quoted in Fitzgerald 2000, p. 1). Wells emphasised that:

School should be structured in the future so that it’s never a blow to students’ self-esteem… We’re not going to achieve a maximum completion rate, as required by the 2010 strategy, if we still have a school system which is daunting or which students see as being of dubious relevance to their lives. …By necessity we need a system that meets the particular needs of individual students… Less and less it will be about trying to broadcast a
single message to an undifferentiated mass of 25 students. (Quoted in Fitzgerald 2000, p. 1)

These views were endorsed by Parliamentary Secretary, Darryl Briskey:

What we need to do is provide a more flexible system that will enable students who are now leaving the system to come back to school, or to remain at school because it is relevant to their lives now and in the future. (Quoted in Fitzgerald 2000, p. 1)

Briskey emphasised that the ‘intense pressures placed on students, as evidenced by drop-out rates and increasing levels of depression and youth suicide, needed to be addressed’ (Fitzgerald 2000, p. 1).

Meanwhile, I continued to be concerned with how schools could make sense of the complex and rapidly fluctuating policy environment and make coherent and purposeful response to educational reform. I wrote a proposal titled, “Smart State or Slave State? Curriculum for a Learning Society”, and sent it with an accompanying letter to the Federal Minister and Shadow Minister, and State Ministers for Education. Part of the argument I made in the proposal is reproduced below.

| The most essential revision of curriculum policy across Australia involves removal of the requirement to assess and report on student performance levels for separate strands within eight Key Learning Areas. The second required revision is a focus on general abilities. There are two key elements in learning - the activity, and what is learned or demonstrated through it. Accountability is concerned with what is learned. It does not need to be concerned with making a specific activity or task mandatory, whether learning or assessment activity, so long as through the activities that are undertaken, some valued things are learned or demonstrated respectively. It is possible to achieve a reconciliation between the need for respecting relevance and purposefulness from the individual student's perspective and the value of significant levels of student direction and control of learning and action on the one hand, and the need for intellectual quality, deep learning, and appropriate assessment and accountability mechanisms on the other. This can be achieved by making general abilities, |

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genres, activities and practices, including those identified from traditional subjects and Key Learning Areas, the substance of curriculum and the focus of assessment and pedagogy.

I received very positive responses from Ministers in several states, though no response from the Queensland Minister.

Towards the end of the year 2000, it became clear to me that it was impractical to implement the school-based trial of my General Abilities Framework. In fact, I came to accept that, despite periodic rhetoric at all levels regarding a shift to a more flexible and student-centred paradigm, it was not realistic to anticipate any future circumstance where a whole set of curricular 'givens' would not be imposed 'from above'.

Instead of promoting a different form of curriculum as an alternative, I began to think in terms of accepting but limiting the influence of mandated, atomised, closed-ended syllabus content, objectives or outcomes, and their associated pedagogies of control. I began to think in terms of four, related but distinctive curricular forms. (1) We could make mandated curriculum content/outcomes as relevant and meaningful as possible by integrating and contextualising them, where it seems meaningful to do so. (2) Where it makes more sense to address them directly, without contextualising them, so be it. But if we could address all or most mandated curriculum in those two kinds of learning activities, we could then devote some regular curriculum time to two other kinds of learning activities. (3) Students could have some time to pursue their own problem- or purpose-based investigations, and (4) we could provide them with opportunities to ‘be of use’ by participating in tangible, practical projects, with consequential, public outcomes.

About this time also, the Queensland School Curriculum Council made it clear to me that they did not intend the Attributes of a Life Long Learner to be used as the basis of a performance continuum, as I had proposed doing in the General Abilities Framework, and they did not want them used for that purpose. Accordingly, I
ceased using the terminology of Attributes of a Life Long Learner, both to refer to
the set and to refer to individual attributes. Instead, I formulated my own cluster of
attributes or general abilities that people need for productive life and living.
Wanting to keep terminology plain and simple, I called them Key Abilities, and
they included Multiliteracies, Problem Solving, Creativity, Self Management and
Community Participation. In addition, I wanted a category to refer to mastery of a
broad range of ‘subject matter’. I initially used the phrase ‘Knowledge of Self,
Others and the Environment’. Later, however, as I came to appreciate more clearly
the nature of knowing and learning, I chose to call the sixth Key Ability
‘Understanding’, to distinguish it from the mere ‘acquisition’ or ‘functional
mastery’ of endowed meanings.

In December 2000, I exchanged some emails with Professor Frank Crowther of the
University of Southern Queensland, regarding the IDEAS Project and possible
involvement in doctoral research relating to it (Field Journal Extract: 14
December/2000). I decided not to get involved in IDEAS, because I was not
satisfied that it was grounded in, or concerned with promoting an explicit, coherent
and adequate theory of learning.

2.4 YEAR 2001
My role as an Education Advisor specialising in curriculum integration of ICT was
feeling more and more limiting. At the end of 2000, I successfully applied for a
position as Education Advisor – Curriculum Outcomes, in a District immediately to
the South of Brisbane. My new brief was much broader: to assist schools in a
school renewal process through the development of initiatives in pursuit of reform
of curriculum, pedagogy, assessment and reporting, with an emphasis on higher
order/critical thinking, approaches to integrated curriculum, New Basics/Productive
Pedagogies, and ICTs. This account of my practical/critical inquiry into change in
the Queensland state education context will now consist largely of extracts from
my Field Journal, the start and end of which will be indicated, in addition to
recollections, reflections and several more extracts from the public domain archives
of the New Basics ‘Framework’ online discussion forum (Department of Education and the Arts n.d.).

[Field Journal Extract: 30 January 2001]
I read a special centrefold article in Education Views [Department of Education 2001b] which sought to clarify the relationship between the eight Key Learning Areas (KLA) and the New Basics Framework project. I found the article disturbing in a number of ways… [I have referred to some of these concerns in Chapter 5.]

Another disturbing thing was that the article stated three times that schools must plan for and assess core learning outcomes in each strand in each KLA. One such statement was in the form of a direct quote from the draft Policy on Core Curriculum.

I wanted to raise these matters on the Education Advisor Curriculum discussion list, which I have just joined, and I felt like writing to the Director General to urge him to allow more flexibility in curriculum policy. I decided (with a little gentle persuasion from my wife overnight) that discretion was the better part of valour, but still sent a ‘moderated’ comment to the discussion list. Some of that message is reproduced below.

The special KLA/New Basics liftout in Ed Views is interesting’. While ‘The aim of this paper is to clarify…’, it contains a number of puzzling statements. In three places it states that the draft policy on core curriculum requires that schools must plan for and assess core learning outcomes. One of those statements (in the paragraph under the picture on page ii) is made as a direct quote from the draft policy. I can’t find the quote in the draft. On the contrary, I read in the draft that ‘Schools have discretion to decide if they wish to use the core, discretionary and/or school based learning outcomes…’ (There IS a statement in the article that ‘The outcomes to be assessed are those deemed by the school to be appropriate…’).
I think the article’s emphasis on core learning outcomes is unfortunate. If we are going to have any success in balancing the traditional atomising and ‘one-size-fits-all’ tendencies of curriculum with sufficient flexibility to respond to the individual needs, interests and purposes of learners to ensure relevance, genuine intellectual engagement, and deep and lifelong learning, then general outcome statements that offer maximum scope for discretion and negotiation are important. I think we (EQ) could give impetus to pedagogical change and the 2010 agenda by emphasising that sort of curriculum flexibility in as many forums as possible.

My comments elicited no comments to the list, but one directly to me. It was a somewhat rambling and confused reflection on aspects of my comments. However, the author did make a very interesting comment, that the traditional approach to outcomes, that is, specifically defined, core (mandatory) outcomes, reflected in the QSCC syllabuses, came from feedback from trial schools and the expressed needs of many teachers for more support in guiding planning than general outcomes could give. And last year, I remember, the team of four AAA High School teachers involved in my aborted General Abilities Framework trial, despite having formal license to adopt open-ended and student-centred pedagogies, immediately decided that the whole cohort of students would embark on a ‘unit on Antarctica’. This made the teachers feel safe and in control.

This suggests to me that in bringing about reforms of what students experience as schooling, it is most important to work first on getting teachers comfortable with new approaches to pedagogy (getting off the stage), before new curriculum policies can have any impact. The centrality of this challenge was echoed by Ross Kimber, then Acting General Manager, School Programs and Student Welfare Division, Victorian Department of Education, Employment and Training who, in a letter in reply to my proposal to the Minister (‘Smart State or Slave State?’), stated that …the intent of the Victorian Curriculum and Standards Framework (CSF) is consistent with your proposal. I believe that there is sufficient flexibility in
the CSF to allow the curriculum model you propose to be implemented. The challenge for the Department is to ensure that teachers see the flexibility within the CSF and use it [to] be more creative in their endeavours to meet the learning needs and extend the skills of all students. (Kimber 2000, pers. comm. 8 December)

This notion of focusing on changing teacher practice first is further validated by the research (Gusky 1986, cited in Ingvarson 1987, p. 28) which showed that teachers change practices after they see direct evidence of benefits to kids (tapping in to teachers’ sense of moral purpose).

I also received some feedback from a fellow Curriculum Education Advisor, after I phoned him on another matter. He warned me that I would definitely be ruffling the feathers of people in the Queensland School Curriculum Council (which is developing the KLA syllabuses) by suggesting that the core learning outcomes would make other educational aims difficult to achieve. I reflected again on my comments, and on the fact that similar observations had been made by quite a few people on the New Basics Framework online discussion in late 1999. I felt completely satisfied that my comments were justified, and if they ruffled some feathers, so be it…

[End Field Journal Extract: 30 January 2001]

Now that my role officially involved assisting schools to make sense of the policy environment in a coherent, whole school reform process, I set about trying to emphasise some common themes in a diversity of policy agendas. I prepared and ran a seminar for school leaders within the District, titled ‘Aligning for Valued Outcomes, or, How to Make the Most of New Knowledge, Policies and Resources Without Going Crazy or Opting for Early Retirement!’

[Field Journal Extract: 8 February 2001]

…Prior to preparing my presentation for district principals and deputy principals, I read the recently released Literate Futures: Report of the Literacy Review for
Queensland State Schools [Department of Education 2000c] (review panel chaired by Professor Allan Luke). I found it re-affirmed many of the principles that Education Queensland’s QSE 2010 reform agenda promotes. ‘A critical starting point to improve literacy education within schools is to focus in our planning, in our policies, and in our classroom approaches on life worlds and literacies outside of schools. The continuous development of students’ literacy capabilities should be both a condition and an outcome of engagement in …a broad repertoire of experiences with purposeful tasks… Cross disciplinary projects are required, beyond stand-alone discipline-based traditions… [along with] Improving the integration of computer technology into daily literacy practices.’

[End Field Journal Extract: 8 February 2001]

In my presentation, in order to identify a set of related messages that might guide coherent whole school reform, I drew upon quotes from a diverse range of Education Queensland policies, Director-General statements, and learning/pedagogy theory (e.g. ASCD 1999, Department of Education 1994, 1998b, 1999b, 2000a, 2000b, 2000c, 2000e, c1999, n.d.; Luke 1999a; Moran 1999; Queensland Studies Authority n.d.; Xiaodong et al. 1995). That set of common messages, taken directly from my PowerPoint presentation, was as follows:

- The most valued outcomes are transformational ones (ALLL [Attributes of a Life Long Learner]), not specific KLA ones
- A shift from passive to active learning (constructivism – learning to learn – higher order thinking – computers as mind tools, not ‘knowledge tellers’)
- Tasks and assessment characterised by real life purposes and contexts which integrate curriculum (including computer access to the real world)
- Individual needs, interests, life-worlds and learning styles are catered for – meaning and relevance are vital for engagement and deep learning
- Students take more responsibility for their own learning and behaviour
• Teachers act more as guide on the side than sage on the stage –
community of learners, characterised by trust, mutual respect, and
 collaboration.

This set of messages, I argued, represented a vision of the purpose and method of
schooling that many would support.

I concluded the seminar with discussion about the inertia of school cultures, and the
need in any effective change process to also address issues of teacher skills,
resources and development of clear but flexible action plans. I spoke at some length
about each of these aspects of the change process. When talking about resources, I
mentioned school curriculum programs. I recorded in my PowerPoint notes, and
emphasised in my presentation, that ‘The school’s curriculum program is also a
resource, and it will make a big difference whether or not it provides scope for
curriculum integration through collaborative real-life projects, and individual or
small group problem- and purpose-based projects, as well as more directed skill
and knowledge focused learning activities in KLA specific areas, or general cross-
curricular areas like multiliteracies.’ I made only very brief mention, here, of my
developing Key Abilities Model.

Written evaluations of the seminar reflect two main themes, both of which I was
very pleased with. The first was that the information I had shared was very well
received, and was seen by many as ‘valuable’, ‘useful’, ‘worthwhile’ and
‘practical’. The second theme was that many felt their whole school staff needed to
hear it and that issues of ‘what we do about it’ now needed to be addressed. I
emailed the PowerPoint presentation to my supervisor, and his emailed response
was also extremely positive:

Your work is excellent. This presentation is the best I’ve
seen in a long long time. I love your messages. I am really
glad to have you on board, we are very lucky to have someone
of your intellectual calibre. Hope you stay a while. (Sherry
2001, pers. comm. February)
With these two forms of validation of the value of my efforts to breathe some sort of workable and defensible coherence into reform challenges, I felt encouraged to pursue my efforts to develop and articulate viable curriculum delivery models.

[Field Journal Extract: 16 February 2001]

Wrote this email in response to a comment on the Education Advisor Curriculum list. It shows some development in my thinking regarding the need for a variety of explicit curricular forms:

I share X’s concerns. I haven’t yet looked in detail at all the sample units that have been shared, and I like some of the ideas in the ones I have looked at closely. But I’m not sure that they greatly change the usual pedagogical mindset of content -> outcomes -> teacher-directed activity/unit plan. I’m trying to develop models that put flexible, student-negotiated, contextualised tasks up front, and allow the mapping of outcomes to become a secondary process (one example is the KidSolutions resource that Y mentioned on this list last year - see website in my signature).

I think the old mindset of grading outcomes will also tend to “promote in its own way a return to content-driven education but under a different name”. This mindset is further reinforced when our planning assumes all students in a particular class are (should be) working on the same level outcome(s). It’s quite a different approach in OBE to say that the student has either achieved a particular outcome, or is still working toward it. It’s from the perspective of the overall Years 1-10 profile or developmental continuum of outcomes that indications of performance level become appropriate. At what performance level (outcome level) is child X achieving in Strand Y?

It was great to see Z’s ‘Oil Spillage Investigation’ include an attempt to profile attainment of the Attributes of a Life Long Learner. QSCC has told me they did not intend, and do not want the Attributes of LLL to be used in this way. I
think it’s important though, to keep these sorts of transformational outcomes up front in planning, assessment and reporting. So I developed my own formulation, and have begun developing a model that brings consideration of what I call Key Abilities to the fore (see Key Abilities Model on my website) [Seaton n.d.[c]].

Finally, I think one solution to this on-going question of whether teachers focus on the particulars (skills, knowledge content...) or on ‘rich’, purposeful, contextualised activities, would be to make explicit provision in school organisation and the school curriculum program for (1) directed, skill/knowledge/outcome focused learning activities in KLA specific areas, or general cross-curricular areas like multiliteracies, (2) curriculum integration through collaborative real-life projects, and (3) individual or small group problem- and purpose-based projects. The hip-bone is connected to the thigh-bone is conn... That’s why I like the idea of a whole-school renewal process as a context for implementation of new syllabuses, and have been encouraging schools in my district to consider going this way.

[End Field Journal Extract: 16 February 2001]

[Field Journal Extract: 22 February 2001]
My seminar for school leaders was attended by about twenty people representing about 14 schools. A couple of people felt they did not get anything out of it, but most feedback was very positive. A couple of people approached me immediately to arrange visits to begin working with their staffs on whole school renewal. Following the seminar I faxed out to all schools a Fax Back Service Request form, and over the past week have received about seven or eight requests. I have made preliminary visits to some of those schools already. I have been struck by the difference in situation of the schools I’ve talked with already, and the different kinds of needs and requests... Some need help with staff awareness and commitment to a new vision. Others... want help with extending practice to further reflect the desired ‘richness’ of tasks, connectedness to the real world, and cross-
curriculum integration… Some want help with translating curriculum policy into a school curriculum program and appropriate school organisation. Others want help with translating a school curriculum program into practice… Some want advice on specific teaching methods, others on authentic assessment…

Most schools so far are asking for support of a broader nature than just advice on the nature of the new outcomes based syllabuses. I doubt that most Education Advisors would have the diversity of experience, or the level of formal post-graduate studies in education to be able to respond adequately to the kinds of needs being expressed.

[End Field Journal Extract: 22 February 2001]

[Field Journal Extract: 1 March 2001]
…I attended the first meeting of a committee with responsibility for developing the curriculum and ‘educational brief’ for a new P-12 education program to be offered in one or more new schools from 2002. I made some comments in the discussion about the importance of flexibility in a new curriculum program to ensure differentiation for individual students and attention to the sorts of abilities that would prepare students for new social and work worlds rather than trying to decide on focusing on an ‘academic or trade’ focus, and was enthusiastically supported by two or three other members in particular. Moreover, I had supplied some materials (as requested by one of my supervisors) for all committee members (the Aligning for Valued Outcomes presentation printout, and copies of the main pages from my Key Abilities Model and KidSolutions websites). I was asked to talk a bit about them at the next meeting, and the documents were given a resounding recommendation by one of the committee members as worthy of close consideration.

[End Field Journal Extract: 1 March 2001]

[Field Journal Extract: 8 March 2001]
I was really happy with yesterday’s teaching staff workshop.
• I was glad I didn’t use a PowerPoint presentation. I am now convinced that for these sorts of meetings they only serve to disconnect presenter and audience. I was doubly glad I didn’t use PowerPoint yesterday ‘cos it was a small school and only a group of about a dozen teachers I was talking with.

• The principal gave a short introduction, indicating that I had been invited along to talk with staff about issues/values the school was currently focused on. I thought it was very effective and helped to give a sense of school ownership to the issues I raised and discussed.

• The small group really made interactive discussion possible, and involvement of all. I will aim to make this ‘belly-to-belly’ (Anita Roddick’s phrase) kind of discussion the mode of workshop whenever I’m talking with teachers about issues and new approaches to curriculum and pedagogy, as distinct perhaps from highly skill focused workshops.

• Teachers again raised the issue of time. They don’t have any time in which to even talk with peers about educational innovation issues.

• Teachers again raised the issue of whether they should bother grappling with a change agenda that may be yet another political bandwagon that won’t last. I usually make the point that the principles underlying current reform agendas are deeper and more permanent than the latest politically motivated policy. In future I will include in the handouts a sheet with quotes reflecting the change agenda, but taken from varied periods in ancient and modern history. I’ll also continue to emphasise the point that these principles embody a professional and ethical imperative much more than a political imperative.

• Feedback was all positive this time. Five of the seven feedback sheets contained a request (under suggestions for improvement) for practical examples of integrated curriculum tasks they could do in their own classrooms. I must address this, but will also continue to emphasise that responding to the interests, needs and purposes of their own students will be more important than taking an activity that some other class has done, and just ‘doing’ that activity. In our discussion, several people expressed
interest in visiting classes to see these sorts of activities in progress. I shall explore that too, but one way this might be practical and not incur the enormous expense of teacher release time, would be to produce and/or find video observations of such activities being implemented…

- Teachers were concerned at the very limited support and resources made available to them by Education Queensland to support their learning and acquisition of new skills. In future workshops, I’ll include in the handouts a list of such resources for learning and development.
- Someone raised the issue of teachers needing to be allowed to make mistakes and to fail as they try out new approaches to teaching and learning. This needs to be made clear to principals, and they need to make it clear to teachers that they support risk taking.
- Another valid issue raised by teachers was that any internal accountability and/or teacher appraisal mechanisms that conflict with the reform agenda should be revised. The specific example raised was the allocation of a set number of hours each week for particular Key Learning Areas or subjects, leaving no room for development of cross-curricular activities. Again, this needs to be made clear to principals, and they need to make it clear to teachers that previous expectations are revised to support exploration of new approaches to curriculum organisation, assessment and reporting, and pedagogy.

[End Field Journal Extract: 8 March 2001]

[Field Journal Extract: 21 March 2001]

…I read an article about assessment rubrics [Andrade 2000], which reminded me of my long term intention of writing rubrics for the Key Activities [later, I come to refer to these as Generic Curriculum Elements] (including the genres in KidSolutions) with four performance levels, to sit within the six level performance descriptions for the Key Abilities. The article made the good point that the kids learn a lot by being involved in developing descriptions of varying levels of performance in relation to particular criteria for a task or genre.
Had a good discussion a couple of days ago with a high school principal, a deputy and two HODs. They want to restructure the school for more relevant, rich task type learning, but are wondering how to go about it, how to overcome some staff resistance, and how to satisfy curriculum and assessment policy. The principal asked for my comments on the draft policy and guidelines on curriculum. I later emailed her the comments below:

The latest draft policy and guidelines for core curriculum requires that a school curriculum program formally schedule delivery of all core learning outcomes for each strand and KLA, and that assessment address student demonstrations of the core learning outcomes scheduled. Such a cluttered and restrictive approach to curriculum (what is referred to in the literature as traditional outcomes based education) is incompatible with the guidelines for pedagogy contained in the draft document which have been borrowed from the New Basics Framework/Productive Pedagogies. The reason for the New Basics Framework and trial, is the widely acknowledged need to unclutter the atomised curriculum to provide room for the Productive Pedagogies to become practical. Most elements of the Productive Pedagogies are incompatible with traditional outcomes based education. For example, the document recognises that: “Pedagogy should be of demonstrable relevance to the immediate worlds of the students and should enable them to analyse, theorise and intellectually engage with that world. Authentic and powerful pedagogy focuses on the identification, analysis and resolution of immediate challenges in learners’ worlds.” This will prove a vain hope within a formally scheduled program of many compulsory core learning outcomes.

The use of software to record student demonstrations of outcomes is no solution. It may make things more ‘manageable’ for teachers, but it will only encourage a ‘paint by numbers’ approach to curriculum delivery, moving teaching further away from flexible responsiveness to “immediate challenges in
learners’ worlds”. Technology will not solve the problem of employing productive pedagogies within inflexible curriculum. The educational issues need to be worked out first, then tracking software may be of administrative assistance.

In my view, reporting is not the issue. We can easily enough report whatever we assess. The issue is what we are required to assess. If we must teach for and assess mastery of outcomes, then we must report that particular, described outcomes have been achieved, or possibly, have not yet been achieved. If that is not what “the system” wants to know, or what parents want to know, we should define differently the substance of curriculum and assessment. Development of the Attributes of a Life Long Learner, and flexible learning, performance and assessment of activities, genres and processes from KLAs which indicate those attributes, would be an example.

Principal X, …I can’t help feeling cross when I consider this policy proposal. It militates against what so many feel is most important for us to encourage and facilitate in students, and is incompatible with the values and principles underlying QSE 2010 and the Smart State agenda. Principals and teachers are regularly saying to me that their challenge is how to do what makes good sense, and still be able to satisfy the policy! Surely we can get a better alignment between sense and policy in this day and age!

…Today I spoke with another primary school principal and one of his staff about implementation of new outcomes based education syllabuses, in particular the Science syllabus. They showed me a model for planning, and asked for feedback as to whether they were on the right track. They had identified a few related core learning outcomes, and identified existing books and resources that might have activities that relate to those outcomes. They also included a long list of specific processes/activities from the science syllabus, as a stimulus to teachers’ thinking as they plan. I asked whether there had been any discussion about productive
pedagogies, about integrated approaches to curriculum implementation, or about transformational outcomes as distinct from specific core learning outcomes. Very little. The comment was that many teachers were older, more experienced teachers who were rather set in their ways, and they didn’t want to ‘frighten’ them. The two I was speaking to were sympathetic to the issues I raised, but it was plain to see how in most schools, the current outcomes based syllabuses are going to end up as business as usual under a different name.

[End Field Journal Extract: 21 March 2001]

For the schools required to address the OBE syllabuses and follow the *Draft Policy and Guidelines for Core Curriculum for Years 1-10 in Education Queensland Schools* [Department of Education 2000d], the task of developing a viable curriculum delivery model was a hugely complex one. My observation was that schools were finding it very hard to make sense of a complex and changing change agenda and to resolve some of the contradictions between the principles and practices of the new ‘vision’ on the one hand, and pressures of accountability and traditional school culture on the other. In March 2001, I attended a meeting of most of the Education Advisors Curriculum in the South East corner of the state. Below is some feedback I sent to the whole Education Advisor – Curriculum discussion list a few days later.

[Field Journal Extract: 26 March 2001]

...Over the weekend I’ve been reflecting on what [a senior Curriculum Branch representative] told us about the latest policy draft, realising... that it is still a draft! :-). I found that discussion frustrating in a couple of ways. I am concerned that if schools have to plan for and assess every core learning outcome, they will end up delivering a traditional OBE program, especially given the inertia of school culture. I was concerned too at the assumption that it makes little difference whether students experience this kind of curriculum or a more transformational one focused on exit outcomes and attributes – that they are simply multiple
pathways with equal merit. Largely traditional approaches will not fulfill the hopes of QSE2010.

I guess that in a nutshell my frustration was this, that in order for schools to make a really beneficial interpretation of the new policy, it will be imperative for them to undergo a whole school reform process. I think that is necessary anyway, but there is little evidence in the history of curriculum change (anywhere), or in recent developments that this will be achieved through ‘innovations’ that leave many aspects of school culture, organisation and practices unchanged. Anyway, that led me to begin to think through some of the implications of the latest draft policy over the weekend, and jot them down to clarify my own thinking. I’ve attached those brief notes, and would welcome anyone’s comments. The Key Abilities Model referred to in the notes is a work-in-progress of mine...

[End Field Journal Extract: 26 March 2001]

The first section of the attachment is reproduced below, in order to briefly suggest the complexity and impracticality of the implications of particularly the assessment component of the revised draft policy, as it was at the time.

[Field Journal Extract: 26 March 2001]

### Implementing the Curriculum Framework for Years 1-10 in Education Queensland Schools: Policy and Guidelines

#### Thoughts on the Draft Policy

**Summary of (Draft) Policy Requirements**

Schools must plan for all core learning outcomes, and must assess all core learning outcomes planned for in a particular reporting period (half-yearly semester). In each reporting period students get a ‘grading’ in each Key Learning Area (KLA), according to how many of the planned outcomes they have achieved at the targeted level. Only when they’ve achieved all core learning outcomes in a KLA at a particular level, are they...
considered to be operating at that level.

**Implications for School Curriculum Programming**

At any age level there are likely to be students working at different performance levels. The challenge is to write a school curriculum program including all core learning outcomes, with enough flexibility that:

1. students within one age level can cover the different outcomes appropriate to different performance levels
2. students can cover outcomes at different rates, and
3. teaching and learning environments and activities can be responsive to student values, interests, purposes and life worlds.

The school curriculum program cannot, therefore, assign particular outcomes or performance levels to particular Year Levels. The school cannot have a one-size-fits-all, pre-planned, time-based curriculum program. The core learning outcomes must be written in to the program as a ‘collection’ of outcomes, from which selections are made for groups and/or individuals on an ‘as needs’ basis. Students must be able to negotiate a pathway through the collection of core learning outcomes on the basis of their individual profile of performance.

[End Field Journal Extract: 26 March 2001]

This document went on to briefly describe four curricular forms that I felt were necessary components of a school curriculum program capable of fulfilling the values and principles of QSE-2010. It also made the point that, ‘The Key Abilities Model describes how indicators of performance development relating to transformational outcomes (specifically, Multi-Literacies, Problem Solving, Creativity, Community Participation, Self Management, and Knowledge of Self, Others & the Environment) can easily be identified in the four curricular/pedagogical forms described above, in such a way that such outcomes remain in the foreground of teaching, learning, assessment and reporting’.

[Field Journal Extract: 28 March 2001]

Another busy week. It has been ‘deathly quiet’ after my message to the Education Advisor Curriculum list. I don’t think most of them are thinking on that level, and it has challenged people.
Comments on the New Basics Framework list have been expressing an interest in assessment rubrics and continua of performance level, rather than Rich Tasks being assessed with an A-E grading. Others have been lamenting the likely policy decision to mandate all core Learning outcomes in KLA schools, that it will further entrench the fragmentation of KLAs and move schools down a road of traditional OBE and away from the aims of QSE 2010. One person raised concerns that so much discussion is about the Rich Tasks, how long they should take, etc. and many people seem to have lost sight of the 2010-type futures oriented goals – the Attributes of a Life Long Learner type stuff.

[End Field Journal Extract: 28 March 2001]

Finally, a couple of people sent messages about the merits and spread of problem based learning. These issues and concerns had occurred to me also, and were part of the reason I had built four curricular forms into my curriculum delivery model. I had been resisting the temptation for some days to make a comment on the New Basics ‘Framework’ list, but since these issues were recognised by quite a few people involved in the online forum, I decided to make some brief comments about how my thinking about curriculum organisation and delivery had been evolving. I sent a very similar posting to the Education Advisor Curriculum list too.

Many New Basics schools are thinking about what the rest of the curriculum might consist of besides the 40% to 60% of time on Rich Tasks, and many KLA schools are wondering how to cope with outcomes without being driven down a traditional road. I, too, have been trying to think through how we can organise pedagogy, curriculum and assessment in a way consistent with current knowledge, current policy, and the creation of a learning society (QSE 2010 and the Smart State). I have designed a model (The Key Abilities Model) which can accommodate both KLA and New Basics curricula, with Four Curricular Forms and their associated pedagogies:
1. Focused Learning Activities (FLA): Focused learning and teaching relating to particular core learning outcomes and Key Activities that cannot practically be learned and mastered solely in the context of rich, purposeful, real-life activities.

2. Multi-outcome Modules (M&M): A collection of purposeful, active-learning tasks or units, incorporating a variety of particular core learning outcomes and Key Activities, which individuals and/or groups would undertake selectively and by negotiation, according to readiness.

3. Community Based Activities (CBA): Large-scale, real-life, on-going, multi-participant projects with consequential, public outcomes, which would provide contexts for a wide variety of identified core learning outcomes and Key Activities.

4. Purposeful Negotiated Activities (PNA): Purpose and problem based learning activities, in which the topic, the core learning outcomes, and the Key Activities to be incorporated in the activity are negotiated for individuals and/or groups.

(For more on the Four Curricular Forms, associated aspects of school and curriculum organisation, and their rationale, including reference to literacy, levels of knowledge/meaning, and the issue of middle schooling, see... [my website])

For KLA schools, most core learning outcomes would be covered in Forms 1 and 2. The more core learning outcomes are mandated, the less room in the curriculum for Forms 3 and 4, which are the most supportive of the aims of 2010. For New Basics schools, the Rich Tasks would constitute the Multi-outcome Modules, and not being so driven by specific outcomes, would also strongly support the aims of 2010. Of course, the distinctions between the Four Curricular Forms are strategic, not fundamental. They do indeed complement and overlap each other, and each should be addressed with an eye to the others.
My Key Abilities Model also addresses the issue raised by several people recently of a continuum of performance on practices, or what I call Key Activities (a broad spectrum of activities, genres, skills and procedures associated with traditional disciplines, subjects and Key Learning Areas, which are general enough that they might be employed in a wide variety of both directed and ‘rich’, negotiated activities). (See the Assessment section of the Key Abilities Model website…) I hope eventually to do more work on describing specific performance levels on particular criteria for each Key Activity so that such rubrics can be used as both learning tools by students, and assessment tools by teachers.

Hope some might find some of these ideas of use. (Seaton 2001b)

I received several very positive replies. Cameron (2001), for example, sent this posting:

Andrew, wow! As principal of a small school (not a trial school but tinkering with rich tasks) I was VERY interested to read your contribution.

In the following extract, I describe the requirements for assessment and reporting in KLA schools as outlined in another draft of a systemic policy and guidelines on curriculum.

[Field Journal Extract: 3 April 2001]

Yesterday I got an email from another Education Advisor Curriculum. She emailed me directly with about six questions about OBE rather than through the discussion list, because she felt I would respond to her questions “directly, thoroughly and objectively”, and I wouldn’t be offended at their “questioning the status quo”. I sent her a response, and thought how significant it is that she felt she could not raise her queries in an open forum. My response, below, shows that Education Queensland’s
draft policy on assessment of the OBE syllabuses had shifted, but again to a form that I felt was non-viable:

...Now to the OBE questions.

1. Bill Spady, the US OBE guru (when OBE was still around over there) described three ‘types’: traditional, transitional, and transformational. In brief, you are right. The LLL stuff can be thought of as transformational. The confusion is not down to you, F. LLL is still way in the background for most people, and EQ’s latest draft policy will drive schools in the direction of traditional OBE despite the 2010 reform agenda which emphasises transformational outcomes.

2. Yes. The current draft policy on curriculum says that schools must plan for all core learning outcomes, and must assess all core learning outcomes planned for in a particular reporting period (half-yearly semester). In each reporting period students get an H (some outcomes higher than planned), A (all), M (most), S (some), W (working towards them), I (insufficient evidence) or N (nil ‘cos they just arrived from another school, or whatever) in each Key Learning Area (KLA), according to how many of the planned outcomes they have achieved at the targeted level. Only when they’ve achieved all core learning outcomes in a KLA at a particular level, are they considered to be operating at that level.

There are notional year levels for attainment of performance levels (2 by end Year 3, 3 by end Year 5, 4 by end of Year 7, 6 by end of Year 10). But these are notional. They really should never have been mentioned at all, because the idea of OBE is that kids demonstrate outcomes when they are able to, and teaching and learning should move them along in their individual development. Time is not supposed to be the controlling factor. Because it is easier than changing how schools and curriculum are organised, many schools are and will plan for all students in a Year level to cover the same
outcomes, rather than teaching students, as you put it. I don’t believe it IS possible to teach all outcomes within set timeframes and still plan for students’ needs, interests, and local contexts. I think a student-centred approach IS possible, if outcomes are not rigidly scheduled to particular Year levels. I’ve begun to describe how I think this is possible at [my website].

3. ...The outcomes are not just one task at 6 different levels. Each outcome is different, so that in most cases what you describe is not possible, or intended.

4. As described above, the current draft says six monthly reporting will be in relation to each KLA (not strand as in the previous draft), and schools will not be required to identify or describe the particular outcomes that were achieved or attempted. That is optional.

5. You are correct. They are intended to be the assessment instruments. In authentic pedagogy and authentic assessment, learning and assessment should be mostly integral to each other, rather than the old teach then test model. By virtue of their size (‘richness’) the Rich Tasks ARE also the vehicle for a great deal of learning, but they are not intended to be the whole curriculum. In my Key Abilities Model (take Curriculum link from http://www1.tpgi.com.au/users/aseaton/kam [defunct version]), I have attempted to begin to describe what might be the substance of a transformational curriculum, if we did not have to address the core learning outcomes (and, though it will be much more difficult, even if we do)...

[End Field Journal Extract: 3 April 2001]

[Field Journal Extract: 4 April 2001]
I’ve been feeling uneasy lately, as I speak with schools about how they might respond to QSE 2010, new curricula and new approaches to pedagogy. I have a definite sense that even those who indicate some ‘receptivity’ to change, who
indicate some ways in which they might practically respond to change, are not really going to change in the ways that matter. They are not really going to get at the ‘inner intent’ of the reforms. And again I see that the issue that would make the difference, which they would strive to resist changing if they possibly can, is the issue of power. So I’ve been thinking that this issue needs to be raised right up front with teachers and administrators. A first thought about how I might do this was to ask teachers three questions:

1. What feelings do you think you would have if the Department of Education gave a top-down directive to operate in the classroom in particular, specific ways each day?
2. How would you describe the quality of intellectual/emotional engagement you would likely have with those activities?
3. How effectively do you think you would learn new understandings about effective teaching, in those circumstances?

I asked a colleague some of these questions today, just to test the water with the idea. In response to the first question he said he’d do as directed, but turn it to reflect and serve his own values, understandings and purposes in relation to his role. When I pointed out how I was considering using those questions, he nodded and got the point. Students have the same response when subjected to the top-down, power relationship that broadly characterises common pedagogies and school culture.

I’m also thinking of discussing the values and principles which guide my KidSolutions and Key Abilities Model Work [before the formulation of the Dynamic Paradigm of Learning and Change], viz.

1. **Balance** - holistic development and exercising of the four dimensions of our nature - physical, mental, social/emotional and spiritual
2. **Connectedness** - a sense of our personal, societal, and environmental inter-relatedness
3. **Context** - learning and behaviour occur differently in different contexts
4. **Empathy** - listening first, with the genuine intent to understand
5. **Empowerment** - the failure to use our power to act results in dysfunction and unhappiness
6. **Experience** - direct personal participation, or actual knowledge - ultimately the only means of apprehending truth
7. **Fun** - when it’s fun, you learn
8. **Imagination** - our ability to see beyond our present experience
9. **Individuality** - recognition, tolerance, respect and valuing of each person’s uniqueness
10. **Love** - our deep and genuine respect and concern for the welfare of others
11. **Meaning** - ‘felt’ and ‘deep’ meanings are distinct from ‘surface’ and ‘scholastic’ knowledge in that they are unique to each individual, are constructed on the basis of experience rather than transmitted, and are transferable to new contexts
12. **Motivation** - the impulse to actively pursue particular activities
13. **Purpose** - having a sense of purpose gives life meaning and direction, and is the most important characteristic of high wellbeing
14. **Standards** - certain kinds of purposeful activities have standards of excellence inherent in them, whose authority we readily accept and strive to meet
15. **Synergy** - social interactions characterised by creative cooperation rather than hierarchical authority, and producing an outcome of greater value than the sum of the parts.

I want to think more about how I might do this, and the order of discussion: power/values/inner intent of the current reform agenda. But the essential thing, I think, is that power is addressed *explicitly*. That’s the only hope for changes in the way power operates in classrooms and schools. Teachers and administrators must deal consciously and deliberately with that issue.

[End Field Journal Extract: 4 April 2001]
The feeling I was having about the importance of addressing issues of authority patterns in teacher-student pedagogical relationships reminded me of a handout I had received in the first few weeks of my Bachelor of Education degree in 1973. It had spoken powerfully to me all those years ago, and I had kept it all that time. I found it in my files at home, and began to provide it as a handout for teachers when conducting certain professional development activities. The original source of the piece was not made known, but it is reproduced here:

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**AUTHENTIC TEACHERS**

By Sydney J. Harris

Discussing a common school problem, a parent recently asked me, “How is it that some teachers are able to control their classes with a very light rein, and have no disciplinary troubles, while others must shout and plead and threaten and still get nowhere with the trouble-makers?”

I don’t think the answer has much to do with teaching techniques or even experience, beyond a certain degree. I think it has almost everything to do with the ‘authenticity’ of the teacher.

Notice I do not say ‘authority’, but ‘authenticity’. For genuine authority, which is more than a matter of official position and the ability to reward and punish, comes out of the depths of the personality. It has a realness, presence, and aura, that can impress and influence even a six-year-old.

A person is either himself or not himself; is either rooted in his existence, or is a fabrication; has either found his humanhood or is still playing with masks and roles and status symbols. And nobody is more aware of this difference (although unconsciously) than a child. Only an authentic person can evoke a good response in the core of the other person. Only person is resonant to person.

Knowledge is not enough. Technique is not enough. Mere experience is not enough. This mystery is at the heart of the teaching process; and the same mystery is at the heart of the
healing process. Each is an art, more than a science or a skill – and the art is at bottom the ability to “tune in to the other's wave-length”.

And this ability is not possessed by those who have failed to come to terms with their own individuated person, no matter what other talents they possess. Until they have liberated themselves (not completely, but mostly) from what is artificial and unauthentic within themselves, they cannot communicate with, counsel, or control others.

The few teachers who meant the most to me in my school life were not necessarily those who knew the most, but those who gave out the fullness of themselves; who confronted me face to face, as it were, with a humanhood that awoke and lured my own small and trembling soul and called me to take hold of my own existence with my two hands.

Such persons, of course, are extremely rare, and they are worth more than we can ever pay them. It should be the prime task of a good society to recruit and develop these personalities for safeguarding our children’s futures; and our failure to do so is our most monstrous sin of omission.


[Field Journal Extract: 11 April 2001]
Today I had a request from a deputy principal for information about rubrics. I will send them the excellent ASCD article [Andrade 2000] that arrived a few weeks ago, as well as a brief explanation of rubrics with an example, that I found with a quick search on the web. The request spurred me on to write rubrics for each, or most, of the Key Activities in my Key Abilities Model. Time!!!...
[End Field Journal Extract: 11 April 2001]

Over the following months, I developed a number of learning and assessment rubrics for a variety of Key Activities, or what I had come to refer to as ‘generic curriculum elements’, which I emphasised in the Key Abilities Model as constituting much of the substance of a valuable curriculum. Before long, I had written those listed below. These rubrics are on my website (Seaton n.d.[d]). An example can be seen in the collection of resources reproduced in the Appendix.
At our Education Advisor Conference a few days ago, we learned that a Curriculum Framework Policy has been endorsed by the Minister, but that the assessment and reporting sections were not included, pending further investigation of this matter by a special taskforce to be set up by the DDG. I emailed the DDG to thank him for ensuring that no policy on assessment and reporting was endorsed, pending formulation of a more satisfactory one. I expressed an interest in being involved with the Assessment and Reporting taskforce.

[End Field Journal Extract: 3 June 2001]

There has been discussion on the Education Advisor Curriculum list in the past day or two about the value of an online lesson planning tool that has a matrix made up of Bloom’s levels of thinking on one axis, and Gardner’s multiple intelligences along the other. The teacher can click on every box on the matrix, and suggestions of activities of that kind are presented for selection. Someone commented that the method was ‘disgusting’. Not the word I’d have chosen, but they gave good reasons, and I agree with them. I then sent a posting that included this:

I share your misgivings about the e-learning online lesson planner. Of course, there are some good ideas/activities
within it, but it is a paint-by-numbers approach to planning and ‘enriching’ curriculum, and one that would have Bloom and Gardner turning in their graves (if they were in them). Bloom, for example, in explaining his taxonomy of educational objectives, points out that there is no fundamental separation between cognitive and affective domains (or between the ‘levels’ of thinking). Unfortunately, this interpretation is often given to his work, and has contributed to the dissecting of curriculum that has made schooling an alienating experience for so many. Bloom quotes Scheerer as follows: ‘...behaviour may be conceptualized as being embedded in a cognitive-emotional-motivational matrix in which no true separation is possible’ (Bloom 1964, p.45). Gardner [1983] expresses a similar view that multiple intelligences aren’t best addressed by the slicing and dicing method. I don’t think the jigsaw puzzle approach is the most productive way of integrating or enriching curriculum. Fogarty [1992] (If Minds Really Matter) describes a dozen or so approaches to integrating curriculum. This sort of method, and thematic approaches, are among the most superficial. Genuine purpose is a much more profound integrating device.

This prompted a posting in defence of this approach to lesson planning, and also of the use of themes. The author argued we should let teachers start with small steps, trying a couple of core learning outcomes in a thematic unit, rather than talking about the enormity of the task or the amount of change necessary. Another person sent a posting arguing that we should not scare teachers by talking about pedagogies, but keep strictly to things that involve outcomes.

Several people disagreed with these positions, and I couldn’t restrain myself any longer, and sent this:

I need to advocate on behalf of students here.

In opening our Education Advisor Conference, Jim Varghese emphasised “an increasingly urgent need for change to operationalise 2010”. Roger Slee urged us to consider the
importance of “thinking otherwise”. He reminded us that (despite EQ’s six-year focus (from 1994) on the Principles of Effective Learning and Teaching) [Department of Education 1994] the Queensland School Reform Longitudinal Study showed good pedagogy is not common. Most of the signs are that we are NOT moving toward QSE-2010. G included in our conference handouts some comments made to him by Bill Spady. Spady points out that most outcomes based education is ‘traditional OBE’, and not really OBE at all, because the outcomes are curriculum-based content and skills. That’s us. But the aim of creating a learning society calls for transformational OBE. Spady observed that, “Australia is caught on the horns of this dilemma, as are all other countries that try to be Outcomes-Based. MASSIVE INSTITUTIONAL INERTIA surrounds the Traditional Model. It’s why CBO [Curriculum Based Outcomes] reforms are so popular: you can have “improvement” without really changing anything.” The history of curriculum change IS the history of little change, and incremental ‘improvements’ are unlikely to operationalise QSE-2010.

While DDG, Alan Luke put it this way: “2010: It’s about pedagogy, that’s all it could and should be about... The main game is pedagogy... It’s about having curriculum conversations, about authentic assessment, about expanding and sharing our professional pedagogical repertoires for improved student outcomes... That’s our business, that’s our job, that’s teachers’ work. We need to put it on the table, talk about it in staffrooms - not make excuses for our schools, ourselves, our systems, our bureaucracies. And we need to get worked up when people tell us that our business is anything but pedagogy. EQ, at every level, needs to be focused on this.”

Let’s have the discussion about what kids need to experience as schooling.
Someone in Central Office sent a message direct to me, saying simply: “Well put Andrew”. But he didn’t send it to the list!!!

Today I sent an invitation to the next Key Abilities Model workshop (the second) to principals in three other districts, through the district Managers Education Services. In it, I quoted comments from the first workshop: “Great!” “An inspiration!” “All excellent ideas.” “A model that puts outcomes based education into perspective.” “Food for thought – rich in protein and vitamins – very energizing.” “Interesting!!” “Worthwhile.”

[End Field Journal Extract: 15 June 2001]

[Field Journal Extract: 20 July 2001]
A few day’s ago I ran the second workshop on my model. I felt it went really well, and the feedback was very positive:

**Workshop Feedback:**

*The Key Abilities Model: Organising School and Curriculum for a Learning Society*

18 July 2001

“The Key Abilities Model is a constructive model for change.”

“We will now be able to formulate a school plan. A very worthwhile day. Certainly assisted in clarifying expectations and making sense of the issues. Thankyou.”

“Excellent ideas. Great resources which will definitely be used at school.”

“Resources invaluable.”

“Outstanding work. I can see a real relevance to my classroom.”

“Brilliant, well organised handouts.”

“[I would say to other school leaders] Go, listen and learn. (Discuss concerns.)”

“Bring (deliver) it to a wider audience.”
“Most impressed. All my staff who attended thought it was very good value.”
“A lot of information, but it was very valuable.”
“Very well developed. Congratulations.”
“Very thorough and thought provoking day.”
“Very detailed and thought out work – worth considering.”
“Presentation was in-depth and very logical. I enjoyed the content.”
“You should go.”
“An excellent day.”
“It was great.”
“Bring your team.”
“Provoked useful thinking – shouldn’t be forgotten – needs whole staff to hear.”
“Interesting and relevant to the issues we now face in our schools.”
“I will talk to our admin and whole staff very enthusiastically about it.”
“Resources most useful.”
“Valuable examples of tasks.”
“Great practical ideas on combining tasks, outcomes, etc.”
“Thought provoking.”
“Motivating, gave me ideas to discuss with my staff.”
“Can’t wait to share online resources with staff.”

There were some suggestions for improvement too. Several people mentioned that in the beginning of the day I should put the seminar more effectively into perspective re Outcomes Based Education. I’m beginning to find more often that I assume a level of knowledge about curriculum and school reform issues that is not justified. I must be alert to this.

…The next day I attended a one-day seminar by Bill Spady on ‘Leading Outcomes Based Change in Schools’. I was a bit worried he would present a whole lot of ideas that would lead people away from the practical ideas I’m trying to promote. I
need not have worried. Most of the day consisted of a clear exposition on the importance of moving beyond Curriculum Based Outcomes to emphasise exit/transformational outcomes. When it came to the how, Spady’s suggestion consisted of brief comments about action learning… A few Curriculum Education Advisors commented on the Education Advisor discussion list on a couple of things Spady had said that they liked. Marshalling my best skills of diplomacy, I wrote a message to the list to say I had something practical that addresses the ‘how to’:

The Spady seminar yesterday was interesting. He certainly gave a clear rationale for schools not settling for just Curriculum Based Outcomes (CBOs). He suggested towards the end that schools could use the CBOs to fuel achievement of exit outcomes, and achieve both in one “swell foop” using an action learning pedagogy. I can’t agree with him there. While one type of outcomes can certainly support the other, they do tend to pull in different directions, and there is lots of evidence that they need (constitute) different forms of assessment, and need different pedagogies and learning activities/contexts. (For more discussion on this, see [my website].)

I liked what Spady said about using a developmental continuum for tracking performance quality (“complexity and sophistication”) of exit outcomes. (Some would see a developmental continuum as incompatible with the philosophy of OBE.) I have built mechanisms to achieve this into the models and resources I’ve been developing to help schools reconcile 2010 and KLA OBE (to get transformational). The discussion around enriching QSCC’s Attributes of a Life Long Learner was interesting, but QSCC has indicated that they did not intend that the ALLLs be used as the basis of a continuum, and they do not want them used that way. That’s why I formulated my ‘own’ set of exit outcome descriptors (the Key Abilities), so they could form the basis of a developmental continuum of exit outcomes. J, you might like to show my Performance Level Statements for the Key Abilities
to those schools you mentioned (see [my website]). I wrote mine as a continuum that would span the years of schooling, and rather than primary schools arbitrarily setting a particular level as constituting an exit outcome for students leaving primary, they might like to simply track student development on the whole continuum.

Other elements of my Key Abilities Model serve to support that process - the development and tracking of performance of exit outcomes, AS WELL AS the CBOs. On Wednesday I ran a second one day workshop on the model (for mostly school leaders, with some teachers as well), and I am encouraged by how practical and useful they find it. There is so much talk about the difficulty of finding answers, and about people packing up and going home if we talk big picture, but I am finding with presentations of my model and resources that, far from being resistant, administrators and teachers are getting excited about making practical, big picture, structural and pedagogical responses to the challenge of making curriculum meaningful, while satisfying accountabilities. In the evaluation sheet comments from Wednesday’s workshop people were saying how appreciative they are of a constructive model for change that puts OBE into perspective, and makes them feel able to formulate a school plan, how inspired they feel about finding resources they regard as valuable and relevant at both school and ‘classroom’ level, and how motivated they are about getting back to apply and share the ideas and resources. They are saying that this information should be made available to a wider audience.

It was great to have someone with Spady’s level of credibility talking some common sense about curriculum and the purposes of schooling. That sort of visioning combined with some practical ‘how to’ is a recipe that will make 2010 doable.

[End Field Journal Extract: 20 July 2001]
[Field Journal Extract: 31 July 2001]
I organised a third workshop a couple of days ago to be held in about three weeks. Again I sent invitations to local principals and school leaders, and to those in three neighbouring districts. Three education advisors from those districts have expressed interest. One email from one of them raised a concern I am going to have to respond to. She said she was interested in coming along so she could then do “something similar” in her own district. I said the following in my reply:

I’ve attached the program for the workshop day, and the 'Overview' page on the Key Abilities Model website at... gives you a quick idea of the model.

I developed it as part of my PhD research on school reform issues, and while it is copyright, I’m keen for as many kids as possible to benefit from the model.

I’m concerned about people taking aspects of my model and promoting them without the full model, and/or promoting the model without full appreciation for the thinking behind it. I’m going to have to devise some training programs for ‘certified’ Key Abilities Model facilitators, I think.

[End Field Journal Extract: 31 July 2001]

[End Field Journal Extract: 24 August 2001]
I was talking with a district office colleague... He said he thought that, rather than going into a school-based position to get my curriculum model happening, I perhaps ought to ‘work through’ the problem of getting through to teachers. He thought I should address the issue of teacher personal development and inspiring them to engage with the kind of personal change required to grapple with genuine pedagogical change. I thought there was much in what he said.
I was nominated by the Assistant Director-General (Education Services) to be a member of the Taskforce for an Assessment and Reporting Framework for the Years 1-10 Curriculum for Education Queensland Schools, which met for four days in October 2001. In that forum I submitted two brief documents for consideration. My hope that the Taskforce would review the policy of outcomes based education in its entirety in its search for a coherent and workable solution to the assessment and reporting issue were quickly (but temporarily, as it turned out) dashed. My first comments addressed some fairly general principles of assessment and reporting that I felt were important in the QSE-2010 climate of concern for transformational outcomes, such as the Attributes of a Life Long Learner, and for adoption of some form of learning/performance continuum.

Thoughts on a Framework for Assessment and Reporting

Concern is expressed in the literature, as well as by many teachers, regarding the tendency of criterion-referenced and competency-based assessment systems to fragment curricula into narrow checklists of skills, behaviours and knowledge, and associated mechanisms of quantification and aggregation. There is concern over whether assessment policies and practices support the nature of the learning outcomes which are most valued, in particular, whether transformational (exit) outcomes (such as problem-solving ability, self-management capacity, community participation competencies, creativity, and multiliteracy) are given adequate prominence, or are overshadowed in assessment practices (and thereby in curricular and pedagogical practices) by ‘traditional’, curriculum-based outcomes (discrete knowledge and skills).

Masters and Forster (2000), for example, identify key design principles for assessment programs, which satisfy all stakeholders: system managers, school managers, parents, teachers, and students. They argue that such programs should ‘maintain as their primary focus the estimation of students’ levels of attainment along a continuum of achievement’ (p. 8). Such a system allows different students’ performance on generic procedures and practices within open-ended, transdisciplinary tasks to be located on a continuum. This avoids the negative consequences of both a competency-based approach like directly assessing curriculum-based outcomes (which prompts the teacher to ask, ‘Has the student passed or failed the minimum requirement?’), as well as the
traditional system of assigning year-level-related grades. Importantly, it also supports constructivist pedagogy, as distinct from content-focused transmission model pedagogy.

Profiles of student learning and development can map a student’s achievement on a continuum according to quality criteria, as well as providing normative information about that achievement in relation to age standards (average performance level). Used with care, this approach to reporting may combine the benefits of normative and criterion-based assessment in a way that satisfies the needs and purposes of students, as well as the needs of other stakeholders.

Rubrics are useful assessment instruments to support such a continuum profile (see, for example, Andrade 2000). Rubrics are learning and assessment tools which not only identify the criteria of performance of a task, but also describe the quality of the elements of performance for each criterion, along a continuum of levels. Consequently, students understand not only what dimensions of performance will be judged, but also what characterises performance at various levels of quality or development. Rubrics are most appropriate for use with a wide variety of genres and other relatively complex practices and tasks, rather than with highly skill and/or knowledge specific learning tasks.

Rubrics have some significant benefits as pedagogical and assessment tools. They are easy to use and understand, and they make teachers’ expectations of students very clear. Compared with traditional forms of assessment, they provide students with much clearer feedback about specifically how they need to improve their performance. Most importantly, when used with relatively content-free, general tasks, genres and procedures, rubrics assist with mapping student learning on a developmental continuum spanning the years of compulsory schooling. [Reference details were provided.]

It soon became clear to me that the deliberations of the Taskforce were to be limited to the existing context of the OBE syllabuses, and Education Queensland’s Policy and Guidelines (Department of Education 2001a) regarding their implementation. In view of this limited focus, I felt it important to outline in that forum concerns in schools about confusion over what kind of judgement teachers were being asked to make about student demonstration of core learning outcomes, and accordingly what kinds of approaches they might take to curriculum development and decision making. I described three problematic options, and put
forward an argument for a focus on generic curriculum elements, a focus that would allow sufficient flexibility in addressing curriculum outcomes that the *transformational outcomes* embodied in *Queensland State Education - 2010* might be more achievable. Those comments are reproduced below.

More Thoughts on a Framework for Assessment & Reporting

I've been engaged in PhD research in the area of curriculum reform for 2 years, I recently wrote QUT's unit on Student Assessment Practices, and for the past 2 years I've worked directly with 80 schools supporting their curriculum reform efforts. I preface my remarks with this information, because *critical* thinking is often perceived to be *negative* thinking, even though it is one of our espoused educational goals. In recent years I have put a great deal of effort into developing constructive models and resources for teachers and students, and being *constructive* is my only interest.

We have not yet succeeded in resolving the central question every school and teacher wants an answer to: “What *kind* of judgement are we being asked to make about student demonstration of the mandated core learning outcomes?”

Education Queensland can spend many more millions, and teachers can spend many precious hours in moderation discussions, but if we don’t have an answer to that question that has workable and sustainable implications for curriculum organisation, both teachers and students will only become more alienated from the schooling experience, and more cynical about it than they are now.

I see 4 options.

The first is that we decide after a period of learning, whether or not the student has demonstrated the outcome. Main difficulties.

1. Student progression. How do schools deal with the fact that some students in a cohort will be ready to address another outcome, while some will need more time to demonstrate the one they haven’t achieved? This question becomes even more complex when a period of learning covers multiple outcomes.

2. The judgement. The expression of most core learning outcomes does not enable a black and white decision to be made about whether or not the outcome has been demonstrated.
3. The stigma. The judgement that a student has not demonstrated an outcome after a planned period, cannot be separated from the notion that they have failed.

4. Constrained learning. A student cannot progress faster in their learning than the planned delivery of outcomes.

5. Serves no diagnostic purpose.


The second option is to decide after a period of learning, how well each student has demonstrated an outcome. Keeps us in the old grading paradigm. Main difficulties:

1. Classes students as bright or not so bright, rather than indicating learning progress. E.g. Some students on higher level outcomes will get lower grades than students on lower level outcomes.

2. Constrained learning. A student cannot progress faster in their learning than the planned delivery of outcomes.

3. Serves no diagnostic purpose.

4. Emphasises teacher control of the learning process, rather than providing 'progressive' learning goals for students.

A third option is to decide after a period of learning, which outcome (nested level) a student has achieved. Main difficulties:

1. Student progression. How do schools deal with the fact that some students would move through all the nested levels before others? This question becomes even more complex when periods of learning cover multiple outcomes.

2. Student boredom. Students would have to repeatedly revisit units with the same topic focus in order to move through the 'nested' levels.

3. Outcomes have a content focus, as well as a process focus. The nested levels are not based on differing quality of performance, but have a different focus.

A fourth option is to use the outcome levels as a sequencing device only, and to devise rubrics to describe performance levels along a continuum for the generic procedures, tasks and practices that core learning outcomes are built upon.

Benefits:

1. Such profiling is a powerfully logical way of describing student learning progress that satisfies student, parent, school and system needs.

2. This option avoids the necessity of students studying the same material to provide comparisons, but can still provide normative information about achievement in
relation to age standards (average performance level).

3. It provides a ‘big picture’ of the whole program, emphasises progress in learning, and further learning goals.

4. It emphasises the processes of learning.

5. It minimises the need for moderation, which costs so much in time, money and distraction from pedagogical discussion and exploration).

Main difficulty:

1. It necessitates more work on the syllabuses to write rubrics which identify the generic process elements and describe levels of quality for them.

These proposals were not the subject of any discussion in full meetings of the Taskforce.

2.5 YEARS 2002-2003

[Field Journal Extract: 27 February 2002]
A couple of days ago an official statement was made by EQ that schools will be free to report in a way they consider meaningful.

[End Field Journal Extract: 27 February 2002]

[Field Journal Extract: 21 March 2002]
Finally found a few moments to send a message to the new Curriculum Framework discussion list this morning. Here is the body of it:

I guess I’m never going to get a better opportunity than the few minutes I can grab right now to make a few comments about recent discussion about organisers, pedagogy and processes.

I might start by picking up on K’s point that “my biggest fear is that we will put a new cover …on old thinking”. That’s a valid fear. Bill Spady, international advocate and critic of outcomes based education observes that on three continents (N. America, Britain and S. Africa) outcomes based education has translated at the chalk face into what he calls ‘traditional’ outcomes based education, that is, largely unchanged content and skills based curriculum and pedagogy.
under a new set of labels. This is already happening widely here, but is not an approach that matches what we now know about meaningful learning and development, or one that will fulfil the aspirations of 2010. New Basics schools are not immune to the tremendous inertia of traditional school culture. I’ve heard of NB high schools which have identified the knowledge and skills required for Rich Tasks, allocated these to different subject areas with specialist teachers, and are teaching these in a de-contextualised way in a long lead up to Rich Task performance on the assumption that the atomised content and skills will ‘add up to’ a complex performance. I think K is right to suggest that one of the foundation questions school communities should be asking themselves is, what are their ‘goals in developing this curriculum framework’?

If we give careful thought to that question, we are likely to conclude, as L reports Jean Russell has, that some of our most valued kinds of outcomes of schooling fall outside the category of abstract, scholastic attainment. I’d be cautious about saying that they fall in the affective domain rather than the cognitive domain, because even Bloom himself recognised in his Taxonomy of Educational Objectives work that the separation of behaviour into separate domains is an entirely artificial exercise. The richest higher order thinking has the richest emotional content and connection with personal values and purposes…

…Teachers need to feel that there are professional and ethical imperatives behind reforms, not just bureaucratic and/or political ones, before they will make the inner commitment needed to achieve the intended substance of the reform. This brings us back to L’s comment about new covers on old thinking. I am constantly challenged by Woodrow Wilson’s observation that, “It is easier to change the location of a cemetery than to change the school curriculum”. Trouble is, I can’t think of a more needful endeavour.

[End Field Journal Extract: 21 March 2002]
I continued for some time to talk, plan and work on the basis of the conclusions drawn in the final session of the Taskforce forum. In May 2002, I made some comments consistent with these conclusions on Education Queensland’s Curriculum Framework discussion list. I was in for a surprise.

[Field Journal Extract: 10 May 2002]
A couple of hours later I received a phone call from another senior Assessment Policy person in Central Office at the request of the more senior one whose comment had prompted my first comment above. I was told there was concern at my second comment because it was a different “interpretation” of the published policy statement. I was told that at the many Forums currently being held across the state to ‘explain’ the Report of the Taskforce, the message being given is that schools do not have to plan for all Core Learning Outcomes, that they do not have to keep records for each individual student that each planned outcome has been achieved, and that schools may “clump” some Core Learning Outcomes together into a unit and use an assessment task or instrument that assesses the lot, without reference to the Core Learning Outcomes incorporated in the unit. I was even told that Core Learning Outcomes are really more like objectives. One reason given for all of this is the view (which I have held ‘from the beginning’) that Core Learning Outcomes are not stated in specific enough terms that they clearly represent a standard. This is why I have always maintained that a moderation process across Queensland would be a farce.

Well!!! The implications of this news are huge! Firstly, from the perspective of change management it is a huge policy change by stealth. Secondly, it spells the end of Outcomes Based Education, without saying as much. While I was initially shocked at the departure this ‘interpretation’ (!!) makes from the recommendation of the Assessment and Reporting Taskforce, it is actually good news for common sense. Part of my great disappointment with the Assessment and Reporting Taskforce was that, in addressing the question of meaningful assessment and
reporting, it failed to question the (OBE) curriculum policy which had hugely problematic implications for assessment and reporting.

[End Field Journal Extract: 10 May 2002]

Later in 2002, Education Queensland published a policy clarification on Outcomes Based Education (Department of Education 2002b), which stated, in part:

- All schools are required to provide all students with opportunities to develop the knowledges, understandings and skills deemed to be core learnings…
- Not all of the “core learning outcomes” (CLOs) listed in the KLA syllabuses (developed by the former QSCC) are core learnings required by the *Years 1-10 Curriculum Framework*…
- Schools are able to organise, schedule and deliver learning experiences to meet the needs of their students… [including] the integration of core learnings into distinctive modules, units of work or Individual Education Plans.
- …Teachers are not required to treat CLOs [Core Learning Outcomes] as assessment criteria or descriptors of standards.

[Field Journal Extract: 28 May 2002]
Last week I went to a Deputy Principals’ Cluster meeting. Some of the speakers were very interesting. One was the person from Central Office who I spoke with on the phone a couple of weeks ago about the new interpretation of the Curriculum Framework policy on Core Learning Outcomes and of the Report of the Assessment and Reporting Taskforce. She confirmed what she had told me on the phone, that CLOs are no longer to be all mandatory, that they do not need to be assessed as having been demonstrated or not, and that they might now more appropriately be seen as objectives rather than outcome statements. She explained that a lengthy (couple of years) process of consultation and development would take place regarding “standards” that might be used in the assessment of generic
curriculum elements. She emphasised that we would not be using ‘standards’ as they are used in the US system...

What strikes me, though, is that on the Curriculum Framework discussion list people continue to plead for clarification of whether all outcomes need to be planned for, whether they need to be assessed, etc., etc. But no one from Central Office will respond with firm and clear answers! More and more curriculum leaders across the state must be fuming with the frustration of being left in limbo re guidelines.

[End Field Journal Extract: 28 May 2002]

The very next day I saw more powerful evidence at the lack of adequate leadership relating to the “what” and the “why” of whole school reform. It related to the IDEAS Project, and confirmed the reservations I felt about the Project a couple of years earlier, and which I identified above (Field Journal Extract: 14 December 2000).

[Field Journal Extract: 29 May 2002]
I was in a meeting recently where the IDEAS Project was discussed. I was shown some brief documents produced by other schools which have been involved in the Project. However, these documents only confirmed for me that the IDEAS process of facilitating discussions with staff to produce a “schoolwide pedagogy” is a Claytons reform process… Some people like this idea because the reform agenda can be left to staff who will then “have more ownership”. My view is that no culture seeks to change itself, and that pedagogy reform must be led by input from a person with insight and commitment to certain values and to certain data (reasons for change). It is important that staff have or develop ‘ownership’, but this is not the same thing as having them generate the ‘reform’ agenda. ‘They don’t know what they don’t know.’

[End Field Journal Extract: 29 May 2002]
In 2002, my first formal outline and rationale for the Key Abilities Model, titled ‘Reforming the hidden curriculum: The Key Abilities Model and Four Curricular Forms’, was published (Seaton 2002a). An extract is reproduced below.

**The Key Abilities Model**

The Key Abilities Model... provides guidelines for curriculum programming, assessment and reporting, learning and teaching, and school organisation, to create rich learning environments which closely reflect the known principles of effective learning and teaching, and promote meaningful and engaged learning connected to the world. The Model assists with addressing officially mandated learning outcomes, while supporting and tracking the development of six transformational or exit outcomes, six Key Abilities needed to prosper in complex and changing social, cultural, and economic worlds. The six Key Abilities are: multi-literacies; problem solving; creativity; community participation; self management; and knowledge of self, others and the environment.

The Model identifies a Spectrum of Key Activities - genres and procedures which are associated with traditional disciplines and subjects, and which are general enough that they might be employed in a wide variety of both directed and negotiated activities. Along with officially required curriculum outcomes, these Key Activities may constitute the elements of a school curriculum program, and the easily assessable indicators of the Key Abilities.

The Key Abilities Model provides a coherent structure for assessing and reporting students' learning and performance through the years of compulsory schooling. As Resnick and Resnick (1989) recognise, you get what you assess, and you do not get what you do not assess. Accordingly, in addition to the tracking of student performance on the required outcomes, the Key Abilities Model enables schools to map or profile each student’s demonstration of the Key Abilities along a developmental continuum, with performance level statements for each of six levels. To provide more detailed information about the learning activities students have been engaged in, the Model enables identification and reporting of performance levels for the Spectrum of Key Activities. Learning and assessment of many of the Key Activities are supported by the use of rubrics. These rubrics not only identify the criteria of performance for particular Key Activities, but also describe the quality of the elements of performance for each criterion, along a developmental continuum.
Teachers and schools are challenged to ask themselves, how can we reconcile the principles of the reform agenda with the constraints of formal systemic curriculum and assessment policies, and our traditional modes of instruction and interaction? We must bear in mind that, '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). When all epistemological authority remains with teachers, or with curriculum policy makers, who decide what is worth knowing and doing, two of the most intractable educational problems remain - lack of student engagement and superficiality of learning, along with the myriad associated personal and social problems which flow from them.

The use of different ‘curriculum organisers' being explored in some locations to describe alternative ways of ‘slicing up’ or combining the content of the curriculum ‘pie’, fails to significantly change the messages communicated by the basically unchanged form of curriculum. The New Basics Framework currently being trialled in some Queensland state schools, for example, while attempting a bold move away from the atomisation of curriculum to a set of mandatory Rich Tasks, explicitly asserts that,

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

I believe a more satisfactory solution is to make explicit provision for Four Curricular Forms, and their associated pedagogies: Focused Learning; Transdisciplinary Investigations; Community Development; and Personal Learning Projects.

The distinctions between these Four Curricular Forms are more strategic, or pedagogical, than fundamental, and each overlaps and complements the others. However, each of the Four Curricular Forms has a particular significance.

1. **Focused Learning**: Focused learning and teaching relating to particular mandated learning outcomes and Key Activities that cannot practically be learned and mastered solely in complex, interdisciplinary or real-life contexts.
2. **Transdisciplinary Investigations**: Complex, active-learning units, each incorporating a variety of particular mandated learning outcomes and Key Activities from several key
learning areas, which individuals and/or groups undertake according to readiness, at the discretion of the teacher.

3. **Community Development Activities:** Real-life, on-going, multi-participant projects with consequential, public outcomes, which provide authentic contexts for complex role performance and a wide variety of identified Key Activities.

4. **Personal Learning Projects:** Largely student-directed, purpose and problem based learning activities, in which the topic and the Key Activities to be incorporated in the activity are negotiated for individuals and/or groups.

...The Key Abilities Model does not rely solely on changing teachers’ mindsets to bring about new and much needed educational outcomes. Nor does it rely on the complete dismantling of the traditional curricular form. However, if we hope to achieve a learning society, a healthy, productive and sustainable society of innovative, creative problem solvers, it is essential that we change the dominance of the traditional curricular form. This Model embeds important new political, cultural and institutional dimensions in the experience of schooling by highlighting and assessing our most valued outcomes, and by making room for additional curricular forms and their associated pedagogies.

In confirming acceptance and refereed status of this article, the editor of the publishing journal, *Curriculum Perspectives*, provided me with comments made by one of the ‘blind’ referees. I quote from those comments here.

...The refreshing feature of the whole piece is the author’s attempt to tackle large and difficult policy issues in a practical way, which encompasses both the requirements of traditional curriculum and demands for accountability on the one hand, and the need for pedagogical reform on the other. It is a relief to read a piece which is about curriculum reform but avoids narrow reformist zeal and takes account of the range of pedagogies and of kinds of knowledge which are of value.

I found the piece a substantial and significant contribution to practical action in the field. While the introduction of yet another conceptual framework for curriculum reform is not necessarily the most desirable strategy, I think the author’s grasp of the range of pedagogical requirements
and readiness to tackle difficult but necessary issues (eg time allocations) make this a most useful addition to the field.

…It is clear, well-presented, very well-written, both ambitious and well-realised, and makes a real contribution to the area. I congratulate the author on a fine piece of work.

[Field Journal Extract: 21 June 2002]
I have been exploring various approaches to student ‘behaviour management’ recently. I visited a couple of schools which are using Ed Ford’s ‘Responsible Thinking Process’ (RTP) [Ford 1994] approach to school discipline. I know of schools where the intent of the program is not realised in practice, and I wanted to talk with schools where it is being used well. At these schools I was very impressed at the way the RTP process was being used in a way that closely reflects the values and principles guiding my thinking about behaviour and my thinking and efforts in pedagogy and curriculum reform.
[End Field Journal Extract: 21 June 2002]

[Field Journal Extract: 16 August 2002]
Many teachers would find it difficult to make the leap to accepting the following principle expressed in an RTP handout I was given at one of the RTP schools I visited: ‘Teachers must give up any and every form of control that they have within the confines of the school environment. Without this, RTP is simply another in a list of failed techniques’. Or, as Powers put it, speaking about Perceptual Control Theory, upon which RTP is based: ‘The question is, do we really want to give up the idea of forcing other people to behave as we want them to behave? That’s what the PCT solution boils down to’ [1998, p. 122].
[End Field Journal Extract: 16 August 2002]
Earlier today, I watched a video by Ed Ford and Tom Bourbon titled ‘The Heart of the Process’ [Ford & Bourbon n.d.]. It covered the basic principles of Ed Ford’s Responsible Thinking Process and Bill Powers’ Perceptual Control Theory. Some key points I noted are these:

1. We teach people to think by asking them questions. This not only encourages thought, but allows responses to situations always to be the child’s choice.
2. Teachers are trained to control behaviour.
3. B.F. Skinner was quoted as saying “upfront” in his early 1950s book, that “When you control other people, you have to be prepared for them to control you back”.
4. The only way to avoid such ‘counter control’ is to stop controlling other people.

Towards the end of 2002 and throughout 2003, I undertook a formal review of literature relating to human knowing, learning, agency and change, and in late 2003/early 2004 I formulated the Dynamic Paradigm of Learning and Change. These constitute Chapter 3.

During 2002 and 2003, I continued to develop guidelines and resources to assist schools to ‘flesh out’ the Key Abilities Model. Many of these resources I made available on my website [www.andrewseaton.com.au], while I made others available to schools I worked with. The number of resources produced is too extensive to reproduce within this thesis. A few of them, however, have been reproduced in the Appendix, which contains the following:

1. A one-page summary of the Key Abilities Model, headed ‘Curriculum Overview ~ The Key Abilities Model’.
2. A one-page diagrammatic overview identifying some of the key elements of school life that the Dynamic Paradigm of Learning and
Change suggests need to be coordinated to generate a coherent and viable schooling experience for young people. The diagram is headed, ‘Key Abilities Model Overview of School Life’.

3. Two pages headed, ‘Generic Curriculum Elements’, in which I have:
   a. described the generic elements of an authentic school curriculum, which are identified in Construct 12 of the Dynamic Paradigm of Learning and Change as the meaning-making, -testing, -expressing and -applying procedures associated with various disciplines;
   b. identified over fifty such Generic Curriculum Elements (neither an exhaustive, nor a prescriptive list);
   c. briefly described their relationship to the Four Curricular Forms of the Key Abilities Model;
   d. identified which of them might be suitable in particular Transdisciplinary Investigations in particular Year Levels;
   e. briefly identified how, when assessed with the aid of rubrics, they may serve as indicators of development along a continuum of six Key Abilities: Understanding, Multiliteracies, Problem Solving, Creativity, Self Management, and Community Participation.

4. A genre guide (from my KidSolutions website, Seaton n.d.[b]) for a Letter of Invitation, as an example of the 17 genre guides for various generic curriculum elements, which I have so far developed for the use of students and teachers.

5. A learning and assessment rubric (from my Key Abilities Model website, Seaton n.d.[d]) for a Letter of Invitation, as an example of 16 such rubrics for generic curriculum elements, which I have so far developed for the use of students and teachers.

6. A one-page explanation (drawing on the Constructs of the Dynamic Paradigm, as well as the writings of some specific authors), headed, ‘Understanding as a Pedagogical Goal’. This sheet briefly clarifies for
teachers the nature and conditions of student learning focused on understanding (making and re-making meaning), with specific identification of how teacher-led Transdisciplinary Investigations lend themselves to students making, critiquing and re-making meaning, and identification of specific pedagogical ideas for supporting student construction and re-construction of understandings.

7. A one-page ‘Framework of Transdisciplinary Investigations’, which ‘maps’ mandated Core Learning Outcomes (CLOs) from most of the new KLA syllabuses across Years 1 to 7 (the Queensland primary school years). The Framework shows how most CLOs can be ‘clumped’ together to be addressed in active investigations across four sub-organisers: Our Personal World, Our Technological World, Our Social World, and Our Natural World (the primary curriculum organisers being the Four Curricular Forms). I originally emphasised the “transdisciplinary” nature of these investigations (and of Personal Learning Projects) as an approach to curriculum integration that “dissolves all boundaries between the disciplines”. As my own understanding evolved through synthesising the Dynamic Paradigm of Learning and Change, I came to emphasise their transdisciplinary nature as an approach that “dissolves the ‘body of knowledge’ boundaries between the disciplines, and makes use of generic curriculum elements commonly associated with various disciplines to shape curriculum to support student engagement in productive citizenship and construction and reconstruction of meaning through investigation of real-world issues, questions and problems”. (Summaries of the CLOs would normally accompany this Framework, but are too bulky to include within this thesis.)

8. An outline of one of the Transdisciplinary Investigations (Year 7, ‘How Can We Promote Sustainable Energy?’) identifying the CLOs addressed, the real-world context or issue driving the investigation, the Generic Curriculum Elements essential and optional to the investigation,
the conceptual understandings students should develop, methods of assessment of understanding and the Generic Curriculum Elements, specific learning activity suggestions for each phase of a flexible 9-step approach to problem-based learning, and a list of teacher resources. I wrote such an outline, minus the brief, draft list of specific learning activity possibilities, for all 28 of the investigations shown on the Framework of Transdisciplinary Investigations. They have not been included within the thesis for reasons of space.

9. A one-page sheet identifying for teachers ‘Appropriate Assessment Strategies’ for learning within each of the Four Curricular Forms.

10. One page of a possible tally sheet mechanism for teachers to record student demonstrations of Key Abilities performance levels as the teacher marks students’ Generic Curriculum Elements using rubrics.

11. A one-page sample of a sheet for inclusion in students’ reports, showing ‘Key Abilities Performance’ on a continuum.

In February 2005, I received some unsolicited feedback in an email from a Deputy Principal of a school where I led Key Abilities Model reform in late 2002-2003:

...your work you left behind is the hub of all we do. ...I'm very excited and never fail to marvel at what you produced. [The Curriculum Coordinator] continues to sing your praises especially as we watch the new syllabuses roll out and how easy it is to align them with what you prepared. So again - A HUGE THANK YOU FROM [OUR SCHOOL].

5.6 FORMAL CONTRIBUTIONS TO THE FIELD (1999-2005)

In addition to a coherent conceptual framework, the Dynamic Paradigm of Learning and Change synthesised and articulated within this thesis, this inquiry has also generated critical insights and developed practical models, resources and texts consistent with the Dynamic Paradigm, that may assist academics, policy makers and education practitioners in the design and interpretation of, and response to, educational change. The inquiry has already generated many such outcomes.
It has already been noted that there is worldwide interest in educational reform, and Fullan (2001, pp. xii-xiii) notes, from his experience and discussions with those involved with educational reform in many countries, that, ‘the nature of problems and the principles of success and failure are common around the world’. Thus, while this research was conducted in a particular educational context, many of its outcomes will be of interest and relevance to those concerned with or engaged in education in other national and international contexts. Indeed, insights generated through the research have already been sought and applied by educators further afield, as indicated below.

Dissemination itself has been a major process within this research project. The inquiry focused on my efforts to develop and promote in schools insights, models and resources generated through my critical reflection on issues of school reform. Many of these materials and other writings have also been made available publicly through my website at www.andrewseaton.com.au

Dissemination has also taken, and will continue to take upon completion of the formal aspects of the inquiry, the form of published writings and conference presentations for both professional and academic audiences. Work directly emerging from my research, from 1999 to the present, includes:

2.6.1 Book chapter

2.6.2 Refereed conference papers / Book chapters


2.6.3 **Refereed articles**


2.6.4 **Keynote conference addresses**

Seaton, A. 2004, ‘Language: tool or tyrant?’, Keynote address delivered at the Australian Literacy Educators’ Association and Tasmanian Association of Teachers of English combined state conference, *Change... Continuity... Connections: What’s Essential in English and Literacy?*, Hobart, 26 June. Commissioned work.

### 2.6.5 Non-refereed articles


Seaton, A. 2000, ‘Getting on with IT: Recent developments in the paradigm shift’, *INSITE*, (newsletter of the Queensland Society for Information Technology in Education), pp. 5-7, April/May. Invited work.

Seaton, A. 1999, ‘Taking the kids to the CyberFair’, *INSITE*, (newsletter of the Queensland Society for Information Technology in Education), May.

### 2.6.6 Non-refereed conference papers


2.6.7 University courses / study guides
Seaton, A. 2005, TCHE 2201 Understanding Literacies, School of Education, RMIT University, Melbourne.

Seaton, A. 2004, TCHE 2112 Introduction to New Learning, School of Education, RMIT University, Melbourne.

Seaton, A. 2004, TCHE 2116 New Ways with ICT, School of Education, RMIT University, Melbourne.


2.6.8 Additional consultancy
Appointed to the Steering Committee of the Victorian Schools Innovation Commission’s ‘Year 9 Project’ by Commission Chief Executive Officer, Viv White, December 2004.

Contracted by the Northern Territory Department of Employment, Education and Training’s Curriculum Services Branch in 2004 to assist in embedding the Key Abilities Model as a framework within systemic curriculum policy, with an initial focus particularly on high schools within remote indigenous communities. Project Manager, Marissa Boscato, has expressed interest in taking the work “much further” and has requested a further proposal for consultancy support and research. Negotiations in progress.

Contracted by the Tasmanian Department of Education’s Office for Curriculum, Leadership and Learning to facilitate a one-day weekend workshop on Whole-
School Reform for 80 high school teachers, principals and system leaders in February 2004, as part of an Australian Government Quality Teacher Program project. Assistant Directors-General, Penny Anderson and Ruth Radford, have expressed interest in developing a continued relationship of consultancy support and research in 2005. Negotiations in progress.

Contracted by Hilliard Christian School, Hobart, to provide one day of consultancy support to whole teaching staff relating to their implementation of my Key Abilities Model as part of their Essential Learnings school reform, November 2004.

Contracted by the Tasmanian Department of Education’s Office for Curriculum, Leadership and Learning to facilitate a one-day weekend workshop for Grade 9 and 10 teachers on Transdisciplinary Inquiry Projects in February 2004, as part of an Australian Government Quality Teacher Program project.

Commissioned in 2003 by Griffith University to write a literature review to inform the university’s major overhaul of the Bachelor of Education (Primary) program. The 27,000 word review was titled: ‘Leading change in teacher education for the knowledge economy: A critical review of literature on desirable teacher attributes and how they might best be developed in a pre-service teacher education program’.

Contracted in 2003 by Canterbury College to offer guidance and work with curriculum leaders and primary and secondary teachers on organising curriculum, teaching and learning, and reporting based on ‘outcomes’ syllabuses.

Contracted in 2002 by Shailer Park State High School to undertake an independent evaluation over two days of a curriculum development initiative.

Consulted in 2001 by Vicki Knopke, a research officer with the Queensland School Curriculum Council, for “insights” into “making judgements” in assessment and reporting on a continuum.
Contacted by schools in both the Independent and Catholic systems requesting permission to use, reproduce and distribute my web-based curriculum guidelines and resources.

2.6.9 Submissions
Submission to Griffith University’s Review of the Bachelor of Education (Primary) Program, April, 2003. (This submission led to my being commissioned in August 2003 to write a review of the literature relating to the attributes needed by future teacher education graduates, and how those attributes might best be developed within a primary teacher preparation program.)

Submission made during proceedings of the Taskforce for an Assessment and Reporting Framework for the Years 1-10 Curriculum for Education Queensland Schools, October, 2001.


2.6.10 Website resources


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 Compte, 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 Compte, 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 is 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; Glaserfeld 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 ‘naître 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.
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 (Glasersfeld 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.

Glasersfeld (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

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<td>Activity</td>
<td>Beneficial or Expected Result</td>
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*Figure 2: Piaget’s pattern of action schemes (Glasersfeld 1995, p. 65)*
it to determine if there are some differences between it and previous situations that might explain the different result (Glasersfeld 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. Glasersfeld (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’ (Glasersfeld 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. Glasersfeld notes that aspects of the ‘staged’ nature of cognitive development have been widely misunderstood (Glasersfeld
1995, p. 71). Rather than the stages of development being seen as a conceptual tool for organizing 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

Glasersfeld (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, Glasersfeld 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 Glasersfeld draws upon in support of his extended argument for a more profound version of constructivism. Glasersfeld 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. Glasersfeld (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.

Glasersfeld 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’ (Glasersfeld 1995, p. 115).
Thus, it is misleading to say that our senses receive coded information about reality.

Glasersfeld (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. Glasersfeld (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.

Glasersfeld (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’ (Glasersfeld 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
Glasersfeld 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.

Glasersfeld (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)

Glasersfeld (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.

(Glasersfeld 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’ (Glasersfeld 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, Glasersfeld (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, Glasersfeld (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. (Glasersfeld 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).

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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 unverbalized 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
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’.
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).

These 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 automatising 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 automatisation 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 purposeful, 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.

![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.
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... Responsibility, 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 tension-less 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 behaviourist 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, Elliot (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

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.
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)]](image)


### 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.


The SRLS is an analysis of the effectiveness of school-based management in making a difference to student achievement, a claim contested in Victorinan 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?
- **Multiiliteracies [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’; ‘trialling, 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.
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Acronyms

ACSA  Australian Curriculum Studies Association
ASCD  Association for Supervision and Curriculum Development
CMC  computer mediated communication
CLO  Core Learning Outcome
CORS  Centre on Organization and Restructuring of Schools
DDG  Deputy Director-General of Education Queensland
EA   Education Advisor
ELA  English Language Arts
ELT  effective learning and teaching
EQ   Education Queensland
FLIP  Further Literacy Inservice Project
HPCT  Hierarchical Perceptual Control Theory
ICTs information and communication technologies
IDEAS  Innovative Designs for Enhancing School Achievement
IT   information technology
KAM  Key Abilities Model
KLA  Key Learning Area
OBE  outcome-based education
PCT  Perceptual Control Theory
QBSSSS Queensland Board of Senior Secondary School Studies
QSA  Queensland Studies Authority
QSCC  Queensland School Curriculum Council
QSE-2010 Queensland State Education - 2010
QSRLS Queensland School Reform Longitudinal Study
RTP  Responsible Thinking Process
SRLS  School Reform Longitudinal Study (same as QSRLS)
UNESCO United Nations Educational, Scientific and Cultural Organisation
Appendix

Some of the guidelines and resources developed during 2002-2003 (including a genre guide developed in 1999), to assist schools to ‘flesh out’ the Key Abilities Model.
CURRICULUM OVERVIEW ~ THE KEY ABILITIES MODEL

The Key Abilities Model provides research-based guidelines for curriculum programming, assessment and reporting, learning and teaching, and school organisation, to create rich learning environments which closely reflect the known principles of effective learning and teaching, and promote meaningful and engaged learning connected to the world. The Model assists with addressing officially mandated learning outcomes or syllabus content, while supporting and tracking the development of six exit or transformational outcomes, six Key Abilities needed to prosper in complex and changing social, cultural and economic worlds. The six Key Abilities are:

- Understanding
- Multiliteracies
- Problem Solving
- Creativity
- Community Participation
- Self Management.

The Model identifies about seventy generic curriculum elements – genres and procedures which are associated with traditional disciplines and subjects, and which are general enough that they might be employed in a wide variety of teacher-directed, negotiated and student-directed activities. Along with essential understandings identified within official syllabuses, these genres and procedures constitute the generic core elements in the school curriculum program, and the easily assessable indicators of development of the Key Abilities.

The Key Abilities Model provides a coherent structure for assessing and reporting students' learning and performance through the years of compulsory schooling. In addition to the tracking of student performance on generic curriculum elements, the Key Abilities Model enables us to map or profile each student's demonstration of the Key Abilities along a continuum, with performance level statements for each of six levels. To provide more detailed information about the learning activities students have been engaged in, the Model also enables identification and reporting of performance levels for generic curriculum elements and/or particular curriculum focus areas. Learning and assessment of many of these generic curriculum elements may be supported in most year levels by the use of rubrics. These rubrics not only identify the criteria of performance for particular generic curriculum elements, but also describe the quality of the elements of performance for each criterion, along a performance continuum.

Provision of Four Curricular Forms, and their associated pedagogies, enables teachers and the school to reconcile the principles of the reform agenda focused on transformational outcomes, to the constraints of formal systemic curriculum and assessment policies. The Four Curricular Forms, or kinds of learning activities, are Focused Learning, Transdisciplinary Investigations, Personal Learning Projects, and Community Development Projects.

The distinctions between the Four Curricular Forms are more strategic, or pedagogical, than fundamental, and each overlaps and complements the others. However, each of the Four Curricular Forms has a particular significance.

1. **Focused Learning**: Subject- or content-focused learning and teaching relating to particular mandated outcomes, essential understandings and generic curriculum elements that cannot practically be learned and mastered solely in complex, transdisciplinary or real-life contexts.

2. **Transdisciplinary Investigations**: Complex, active-learning investigations addressing real-life issues, questions or purposes, and each incorporating a variety of essential understandings and generic curriculum elements from several Key Learning Areas.

3. **Personal Learning Projects**: Largely student-initiated and student-directed, purpose- and problem-based learning activities, in which the topic and the generic curriculum elements to be incorporated in the activity are negotiated with teachers by individuals and/or groups.

4. **Community Development Projects**: Real-life, on-going, multi-participant projects with consequential, public outcomes, which provide authentic contexts for complex role performance and a wide variety of identified generic curriculum elements. A few examples are: learnscaping projects (design, construction and maintenance of one or more of a wide variety of environmental enhancements or developments within or near the school grounds, such as a permaculture garden, bush regeneration, outdoor 'classroom', amphitheatre, bush food garden, organic market garden, maze...), a small commercial enterprise, commercial community newspaper, a recycling program, building construction, establishing an aquaculture farm, a school shop, adopt-a-grandparent projects.

There are a variety of ways in which teachers might allocate time to each of these curricular forms. The important thing is that transformational outcomes are supported and assessed, and that each of the Four Curricular Forms receives explicit recognition as a vital part of every student's curriculum program.
Students Engage in Four Curricular Forms

Focused Learning | Transdisciplinary Investigations | Personal Learning Projects | Community Development Projects

Students Develop Six Key Abilities (Transformational/Exit Outcomes)

Understanding | Multiliteracies | Problem Solving | Creativity | Self Management | Community Participation

Goal

Individuals who: (1) are constantly authenticating or reconstructing their beliefs through experience and reflection; (2) are capable of using, critically analysing and transcending given texts, contexts, systems and structures; (3) are able to prosper in changeable social, cultural and economic environments; (4) have recognised and developed passions, talents and capacities which they willingly contribute to productive and cooperative purposes; (5) have a strong sense of identity, autonomy and self-efficacy; and (6) have a genuine respect for themselves and others.

Figure 11: Key Abilities Model Overview of School Life
GENERIC CURRICULUM ELEMENTS

Four Curricular Forms have place within the Key Abilities Model school curriculum, namely, Focused Learning, Transdisciplinary Investigations, Personal Learning Projects and Community Development Projects.

All mandated curriculum outcomes are mapped within Focused Learning and/or Transdisciplinary Investigations. However, curriculum is organised in such a way as to maximise the mastery of generic curriculum elements identified within curriculum outcomes and ‘clumpings’ of curriculum outcomes, and within Personal Learning Projects and Community Development activities, as well as the development of transformational or exit outcomes (Key Abilities).

The generic elements of curriculum are also the generic elements of life. They are practices or genres that foster critical thinking, the art of learning, and people’s ability to pursue their interests and purposes. They involve students 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),
2. explain or communicate them,
3. apply them in actions,
4. test or critique the meaning or value of such constructions, whether produced by themselves or others, and
5. adjust or challenge them, if found inadequate or unworkable.

Such curriculum elements are ‘generic’ in that they are independent of particular subject matter. Within Transdisciplinary Investigations, the subject matter to be associated with the generic curriculum elements is influenced by the conceptual understandings identified in systemic policy as being essential. Generic curriculum elements addressed within any particular Personal Learning Project are negotiated by student and teacher, as is the problem or purpose (subject matter) to be explored. Within Community Development activities, teachers select generic curriculum elements appropriate to the particular project and the variety of tasks and roles students might take within it.

Generic curriculum elements are mostly assessed with the aid of rubrics, which identify the performance criteria or desirable features, as well as describing the actual performance standards relating to each criterion. Many generic curriculum elements are used to track the development along a continuum of six exit outcomes or Key Abilities: Understanding, Multiliteracies, Problem Solving, Creativity, Self Management, and Community Participation (or ‘essential learnings’).

The chart below shows in white those Year Levels (in the Queensland primary school context) at which particular generic curriculum elements are suitable. The letters ‘N’, ‘P’, ‘S’ and ‘T’ show where particular generic curriculum elements are relevant to Transdisciplinary Investigations in ‘Our Natural World’, ‘Our Personal World’, ‘Our Social World’ and ‘Our Technological World’, respectively (on the Framework of Transdisciplinary Investigations – Qld example). This list of generic curriculum elements is neither exhaustive, nor entirely prescriptive. However, the letters appearing in red do indicate the Transdisciplinary Investigations in which certain generic curriculum elements should be addressed.

The Related Key Abilities section of the chart shows in black those Key Abilities for which a generic curriculum element, or aspects of it, serves as an indicator. Related Key Abilities shaded in grey are some of those for which the generic curriculum element may serve as an indicator, depending on the context in which the generic curriculum element is demonstrated. For example, a letter to the editor serves as an indicator of Multiliteracies (the rubric as a whole) and Understanding (one criterion on the rubric). If the letter addresses a current issue and is actually sent to a newspaper, it would also serve as an indicator of Community Participation.
## GENERIC CURRICULUM ELEMENTS

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<thead>
<tr>
<th>CORE LEARNING</th>
<th>APPROPRIATE YEAR LEVELS</th>
<th>RELATED KEY ABILITIES</th>
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<td>Budget</td>
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<td>Dance continuum</td>
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<td>Design, make, appraise</td>
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<td>PS</td>
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<td>Discussion - written</td>
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<td>Display advertisement</td>
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<td>Dramatic performance</td>
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<td>Email</td>
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<td>Event / Project planning &amp; management</td>
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<td>Event program</td>
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<tr>
<td>Explanation – written</td>
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<td>N</td>
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<td>Explanatory diagram / Design plan</td>
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<td>T</td>
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<td>Fictional literature – poetry / song lyrics</td>
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<td>S</td>
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<td>Fictional literature – short story</td>
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<td>Film making – documentary</td>
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<td>Graph</td>
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<td>Historical research</td>
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<tr>
<td>Instructions – written</td>
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<td>PT</td>
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<td>Internet literacy</td>
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<td>Interview</td>
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<td>Letter of invitation</td>
<td>NS</td>
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<td>Letter of persuasion (exposition)</td>
<td>NP</td>
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<td>Letter of thanks</td>
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<td>Letter to the editor</td>
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<td>Mapping</td>
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<td>Meeting procedure</td>
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<td>Needs audit / analysis</td>
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<td>NP</td>
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<td>Numeracy practices</td>
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<tr>
<td>Oral expression of thanks</td>
<td>S</td>
<td>PS</td>
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<tr>
<td>Oral presentation (possibly incl. Multimedia)</td>
<td>NP</td>
<td>ST</td>
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<tr>
<td>Oral visitor introduction</td>
<td>S</td>
<td>PS</td>
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<tr>
<td>Personal / Project recount</td>
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<td>Personal resume</td>
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<td>Promotional display</td>
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<td>Promotional flier / leaflet</td>
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<td>P</td>
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<td>Promotional poster</td>
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<td>P</td>
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<td>Proposal submission</td>
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<td>Referencing</td>
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<td>Review / Evaluation</td>
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<td>Scientific experiment</td>
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<td>NP</td>
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<td>Scientific experiment report</td>
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<td>Social investigation report</td>
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<td>PS</td>
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<td>Spreadsheet (eg. MS Excel)</td>
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<td>Summary / Precis</td>
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<tr>
<td>Survey / Questionnaire</td>
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<td>PS</td>
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<td>Table (see also Spreadsheet)</td>
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<td>FS</td>
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<td>Technical description</td>
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</tr>
<tr>
<td>Timeline</td>
<td>S</td>
<td>P</td>
</tr>
<tr>
<td>Visual art / Illustration continuum</td>
<td>S</td>
<td>NP</td>
</tr>
<tr>
<td>Webpage making (eg. using MS FrontPage)</td>
<td>FS</td>
<td>P</td>
</tr>
<tr>
<td>Word processing (eg. MS Word)</td>
<td>FS</td>
<td>PS</td>
</tr>
</tbody>
</table>

N = Our Natural World   P = Our Personal World   S = Our Social World   T = Our Technological World

Red = Essential   Black = Relevant, but discretionary
The Letter of Invitation Genre

**Purpose**
The purpose of an invitation letter is to request the attendance of a particular person, group of people, or representative of an organisation, at some particular event. The description here is of a more formal invitation, such as might be sent to a person not well known personally, rather than to a familiar friend or relative.

**Structure**
The basic structure of an invitation letter consists of five parts:

1. Initial details, including sender's address, date, recipient's name and address, and greeting.
2. The writer introduces him or herself and/or the organisation or group they represent.
3. The actual invitation is made, including a statement of details regarding the nature and/or purpose of the event, the time, date and place, and any special considerations regarding appropriate dress. Some indication might be given regarding others, if any, who will be attending the event. The invitation should also make clear any cost that might be involved, any items the person might be requested to bring, and any special role they might be requested to play in the event. A request for a response by a particular date should be made.
4. A brief statement indicating hopes for their attendance, or anticipation of their response, is generally made in conclusion.
5. Formal sign-off.

**Language Features and Conventions**
The invitation letter takes a polite, but semi-formal tone. It is not obviously persuasive, but not entirely neutral either, since there is generally a hope that the person will want to attend. It is written in a mixture of present and future tenses. It makes use of full sentences and paragraphs. Linking words and phrases to do with description and explanation are used, such as "it will be", "we hope that", "after", "during", "in order to".

**Short Example**
Madeuptown Primary School
Sample Street
MADEUPTOWN 4890
17 September 2003

Mrs Josie Burton
President
Madeuptown Chamber of Commerce
Dear Mrs Burton

My name is Harry Youngperson, and I am writing on behalf of the students of Yellow River Primary School. We would like to invite you, or a representative of the Chamber of Commerce, to attend a special event to be held at our school in a few weeks time.

Some students of our school have been working on a project to devise solutions to the difficulties many young people in our town have in finding a job when they finish school. Our special audiovisual presentation, to be held in the school library at 11.00am on Tuesday, 2 November, will outline the findings of our investigation, and a variety of proposals we believe will help generate jobs for local young people.

During the program, several students will receive community service awards from Mayor Jeff Bridges. Following the proceedings, a light morning tea will be provided.

You are among a number of local community leaders we are hoping will be able to attend the presentation. Could you please let us know if you will be able to attend, by phoning the school on 4455 6677 before Friday 29 October?

We look forward to seeing you there.

Yours sincerely

Harry Youngperson
## Letter of Invitation Rubric

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>Elementary</th>
<th>Developing</th>
<th>Consolidating</th>
<th>Proficient</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introduction</strong></td>
<td>I do not directly introduce myself, and I leave the reader in doubt as to who I am and what organisation or group I represent.</td>
<td>I introduce myself, but do not identify the organisation or group I represent, or the nature of my role within it.</td>
<td>I introduce myself, explaining the organisation or group I represent, but do not make clear the nature of my role within it.</td>
<td>I introduce myself, clearly explaining the organisation or group I represent and the nature of my role within it.</td>
</tr>
<tr>
<td><strong>Invitation</strong></td>
<td>I state few of the appropriate details regarding the event, and/or do not directly make the invitation.</td>
<td>I make the invitation, stating several of the appropriate details regarding the event.</td>
<td>I make the invitation, stating most of the appropriate details regarding the event.</td>
<td>I make the invitation, clearly stating details regarding the nature and/or purpose of the event, the time, date and place, and any special considerations regarding appropriate dress, and if appropriate, who else will be attending the event. I make clear any cost that might be involved, any items the person might be requested to bring, and any special role they might be requested to play in the event. I also make a request for a response (RSVP) by a particular date.</td>
</tr>
<tr>
<td><strong>Closure</strong></td>
<td>I do not attempt to bring the invitation to closure, ending my letter suddenly.</td>
<td>I make a brief, but impolite and/or inappropriate statement relating to the person’s attendance, and/or anticipation of their response.</td>
<td>I make a brief, but awkward statement relating to hopes for the person’s attendance, and/or anticipation of their response.</td>
<td>I make a brief, polite and appropriate statement relating to hopes for the person’s attendance, and/or anticipation of their response.</td>
</tr>
<tr>
<td><strong>Language</strong></td>
<td>I use few language features appropriate for a letter of invitation.</td>
<td>I use several language features appropriate for a letter of invitation.</td>
<td>I use most of the language features appropriate for a letter of invitation.</td>
<td>For a formal invitation, initial details I include are sender’s address, date, recipient’s title, position, name and address, and appropriate greeting and sign-off. My language is polite, but semi-formal, using full sentences and paragraphs in a mixture of present and future tenses. I use linking words and phrases to do with explanation, such as ‘it will be’, ‘we hope that’, ‘after’, ‘during’, ‘in order to’.</td>
</tr>
<tr>
<td><strong>Features</strong></td>
<td>I attempt mostly simple sentences, but many of them are incomplete or awkwardly written, which makes it very hard for people to understand what I have written.</td>
<td>I use mostly simple sentences. When I use complex sentences, I often overuse the same conjunctions, such as ‘and’ and ‘then’. Some of my sentences are incomplete or awkwardly written, which may confuse the reader, or distract their attention from what I have to say.</td>
<td>I use mostly well-constructed, simple and complex sentences. I use a variety of conjunctions, such as ‘and’, ‘because’, ‘so’, ‘if’, ‘when’ and ‘after’. I organise paragraphs logically.</td>
<td>I use an effective mixture of well-constructed, simple and complex sentences using a wide variety of conjunctions and other structural words.</td>
</tr>
<tr>
<td><strong>Sentence</strong></td>
<td>I attempt to use some punctuation, but usually I use it incorrectly. I sometimes over-generalise the use of punctuation.</td>
<td>I attempt to use some punctuation, sometimes using full stops, capital letters to start sentences and for names, and apostrophes for contractions. I sometimes attempt to use question and exclamation marks.</td>
<td>I punctuate most simple sentences correctly, using capital letters, full stops, question and exclamation marks and apostrophes. I sometimes use commas.</td>
<td>Where appropriate, I correctly use capital letters, full stops, question and exclamation marks, commas, quotation marks, apostrophes, brackets, dashes and paragraphs.</td>
</tr>
<tr>
<td><strong>Structure &amp;</strong></td>
<td>I have many errors in my spelling. I often spell words in simplified versions of how they sound.</td>
<td>I spell most simple words and familiar words correctly. I have many errors in more complex words and words from less familiar contexts.</td>
<td>I spell most words correctly. I recognise and correct misspelling of most unfamiliar words when proof reading.</td>
<td>I proof read carefully and use correct spelling.</td>
</tr>
<tr>
<td><strong>Cohesion</strong></td>
<td>My letter is poorly organised, inappropriately laid out, and/or is messy and very difficult to read.</td>
<td>My letter is a bit disorganised, and is a bit untidy and difficult to read.</td>
<td>My letter is quite well organised, and is neatly presented and easy to read.</td>
<td>My letter is well organised in the appropriate layout, and is neat, attractive and easy to read.</td>
</tr>
</tbody>
</table>
UNDERSTANDING AS A PEDAGOGICAL GOAL

Authentic learning involves actively building new understandings, not on top of existing beliefs and ideas, but by changing existing beliefs and ideas. Conceptual change follows active performance in a variety of challenging situations that demand understanding, and critical reflection on the incompatibility of existing conceptions with clarified or revised purposes, with other existing conceptions, or with new ideas and the evidence of experience.

Why would students (or anybody) consider alternatives to a view they hold, when they are unconvinced of the inadequacy of their conceptions? Students will only create new understandings if:

1. they understand why new logical or experiential evidence represents a contradiction of some aspect of their existing conceptions; and
2. it is important to them to resolve the contradiction or reduce inconsistencies in their beliefs.

Transdisciplinary Investigations are structured in such a way as to lend themselves to students’ making, critiquing and re-making of meaning:

1. They deal with authentic issues that require students to gather, critically examine, and possibly challenge others’ ideas (meanings) about the situation.
2. They deal with problems or purposes that will potentially be of enough interest to many students that it will be important to them to revise their own inadequate or inconsistent beliefs and ideas.
3. They incorporate generic procedures that are central to various disciplines and are transferable to other contexts.
4. They focus learning for understanding on just a few identified critical issues or concepts.
5. They engage students from beginning to end in a variety of generic curriculum elements or performances that demand understanding of identified concepts.
6. They involve various forms of authentic (contextualised) assessment of student performance, including demonstrations of understanding in the context of performances. Many rubrics that might be used for assessment of, and feedback on generic curriculum elements, include a criterion that relates to level of understanding demonstrated. Transdisciplinary Investigations should also involve regular opportunities for student reflection on their own learning.

Since most students expect learning to primarily involve memorisation or gaining a sense of the subject matter, they might not know how to best take advantage of their engagement in performances designed to help them reconstruct their own understandings. We need to emphasise through our teaching that students are not ‘a fixed set of beliefs’, but can be in charge of their own minds and lives. We need to show them how they can construct more viable beliefs and understandings when their existing ones prove inadequate. Additional ideas for teaching for understanding include the following:

1. ask questions to elicit students’ conceptions and misconceptions;
2. encourage students to elaborate on the thinking behind their misconceptions, rather than being preoccupied with eliciting or giving ‘right’ definitions or answers;
3. encourage students to challenge their ideas and explanations, and those of others, and show them how to support or critique them on the basis of logical and/or experiential evidence;
4. use activities and/or experiments to create conceptual conflict (e.g. experiments whose results are likely to differ from students’ predictions);
5. use explanations from textbooks, and a variety of teacher constructed explanations, not to define or explain the ‘right’ answer, but to highlight, rather than gloss over, the contrast between logical and/or experiential evidence and students’ misconceptions; and
6. deliberately revisit concepts from a variety of ‘angles’, and give students repeated challenges to apply new concepts to explain real world phenomena, or resolve problem situations.

1 Ideas presented here are drawn from many sources, amongst them:

A FRAMEWORK OF TRANSDISCIPLINARY INVESTIGATIONS (Qld example)

Our transdisciplinary approach to curriculum integration dissolves the ‘body of knowledge’ boundaries between the disciplines, and makes use of generic curriculum elements commonly associated with various disciplines to shape curriculum to support student engagement in productive citizenship and construction and reconstruction of meaning through investigation of real-world issues, questions and problems.

<table>
<thead>
<tr>
<th>OUR PERSONAL WORLD</th>
<th>OUR TECHNOLOGICAL WORLD</th>
<th>OUR SOCIAL WORLD</th>
<th>OUR NATURAL WORLD</th>
</tr>
</thead>
<tbody>
<tr>
<td>These investigations explore the ways in which our personal identities, actions, relationships, growth and development influence our individual and collective wellbeing. Students explore varied dimensions of <strong>Our Personal World</strong>, including the physical, emotional, mental, conative and spiritual.</td>
<td>Investigations of <strong>Our Technological World</strong> explore the energies, forces and properties of the material world and the built environment in which we live. Students explore issues concerning the sustainable use of energy and the Earth’s material resources, and how important is the search for more effective technologies for harnessing them.</td>
<td>These investigations explore the construction and diversity of <strong>Our Social World</strong> in local and global contexts, and explore the cultural significance of place. Students build an understanding of changes and continuities in society over time, particularly with regard to citizenship, government, and people’s access to resources and power.</td>
<td>These investigations explore how the living and non-living components of nature interact to form our diverse and complex universe. Students come to understand how living things function and interact with other components of the world. They learn to identify how we can better manage the resource that is <strong>Our Natural World</strong>.</td>
</tr>
</tbody>
</table>

### Year 1

**How Can We Make Places Healthy & Safe?**

- **PH1.1, 1.3, 1.5, 2.3, 2.5**
- **SRP1.3, 1.5**
- **All Level 1 English CLOs**

**Using the World Around Us to Make Things**

- **EC1.1, 1.2**
- **MAT1.1, 1.2**
- **NPM1.1, 1.3**
- **SYS1.1, 1.2**
- **TP1.1, 1.2, 1.3**
- **All L1 English CLOs**

**What Can Families Be Like?**

- **C11.1, 1.2, 1.3, 1.4, 1.5**
- **All L1 English CLOs**

**Can We Use Paper Without Damaging the Earth?**

<table>
<thead>
<tr>
<th>L1 English CLOs</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH1.1, 1.3, 1.5, 2.3, 2.5</td>
</tr>
<tr>
<td>SRP1.3, 1.5</td>
</tr>
<tr>
<td>PH1.1, 1.3, 1.5, 2.3, 2.5</td>
</tr>
<tr>
<td>SRP1.3, 1.5</td>
</tr>
</tbody>
</table>

### Year 2

**What Kind of Me Would I Like to Be?**

- **PH2.1, 1.4, 2.2**
- **PD1.1, 1.3, 2.1, 2.3**
- **C11.5**
- **All L1/L2 English CLOs**

**Making Toys & Games from the World Around Us**

- **EC1.3, 2.1**
- **NPM1.2, 2.1**
- **SS1.3, 2.1**
- **TP1.4, 2.1**
- **SYS2.1, 2.2**
- **MAT2.1, 2.2**
- **All L1/L2 English CLOs**

**Why Do Different Groups Do Things Differently?**

- **C12.4, 2.5**
- **SRP1.2, 2.4**
- **All L1/L2 English CLOs**

**Can We Use Paper Without Damaging the Earth?**

<table>
<thead>
<tr>
<th>L1/L2 English CLOs</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC1.3, 2.1</td>
</tr>
<tr>
<td>NPM1.2, 2.1</td>
</tr>
<tr>
<td>SS1.3, 2.1</td>
</tr>
<tr>
<td>TP1.4, 2.1</td>
</tr>
<tr>
<td>SYS2.1, 2.2</td>
</tr>
<tr>
<td>MAT2.1, 2.2</td>
</tr>
</tbody>
</table>

### Year 3

**How Do Animals & People Stay Healthy?**

- **PH2.2, 2.4**
- **LL2.2(animals)**
- **All L2 English CLOs**

**Keeping Warm, Keeping Cool**

- **EC2.2, 2.3**
- **SS2.2, 2.3**
- **NPM2.2, 2.3**
- **TP2.2, 2.3, 2.4**
- **All L2 English CLOs**

**What Makes a Good Place to Live?**

- **PS2.1**
- **C12.1, 2.3**
- **SRP2.3, 2.5**
- **All L2 English CLOs**

**Can We Minimise Environmental Disasters?**

<table>
<thead>
<tr>
<th>L2 English CLOs</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC2.2, 2.3</td>
</tr>
<tr>
<td>SS2.2, 2.3</td>
</tr>
<tr>
<td>NPM2.2, 2.3</td>
</tr>
<tr>
<td>TP2.2, 2.3, 2.4</td>
</tr>
</tbody>
</table>

### Year 4

**Taking Action on Hunger and Malnutrition**

- **PH3.2, 3.4**
- **PD3.1, 3.2**
- **All L3 English CLOs**

**Changing Materials to Make … Dinner!**

- **EC3.1, 3.2**
- **TP3.1, 3.2**
- **NPM3.1**
- **MAT3.1, 3.2**
- **SYS3.1, 3.2**
- **All L3 English CLOs**

**Planning an Event to Celebrate Difference**

- **C13.1, C13.2, 3.3**
- **INF3.1, 3.2**
- **SRP3.3, 3.5**
- **All L3 English CLOs**

**Can We Minimise Environmental Disasters?**

<table>
<thead>
<tr>
<th>L3 English CLOs</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC3.1, 3.2</td>
</tr>
<tr>
<td>TP3.1, 3.2</td>
</tr>
<tr>
<td>NPM3.1</td>
</tr>
<tr>
<td>MAT3.1, 3.2</td>
</tr>
<tr>
<td>SYS3.1, 3.2</td>
</tr>
</tbody>
</table>

### Year 5

**Dealing with Hazards and Emergencies**

- **PH3.3, 3.5**
- **PD3.4**
- **All L3 English CLOs**

**How Can We Build a More Useful Landscape?**

- **EC3.3**
- **NPM3.2, 3.3**
- **TP3.3, 3.4**
- **All L3 English CLOs**

**How Do People Cooperate in Societies?**

- **C13.1, 3.2, 3.4**
- **C13.4, 3.5**
- **SRP3.2, 3.4, 4.4**
- **All L3 English CLOs**

**Can We Enjoy and Care for Nature?**

<table>
<thead>
<tr>
<th>L3 English CLOs</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC3.3</td>
</tr>
<tr>
<td>NPM3.2, 3.3</td>
</tr>
<tr>
<td>TP3.3, 3.4</td>
</tr>
</tbody>
</table>

### Year 6

**How Can We Promote a Healthy Lifestyle?**

- **PH4.2, 4.4**
- **PD3.3, 4.3, 4.4**
- **All L4 English CLOs**

**How Do You Go About Building a Structure?**

- **TP4.1, 4.2**
- **NPM4.1, 4.2, 4.3**
- **MAT4.1, 4.2**
- **All L4 English CLOs**

**How Can We Get Along in the Global Village?**

- **C14.1, 4.3, 4.4, 4.5**
- **SS4.1**
- **All L4 English CLOs**

**What’s it Like in Your Part of the World?**

<table>
<thead>
<tr>
<th>L4 English CLOs</th>
</tr>
</thead>
<tbody>
<tr>
<td>TP4.1, 4.2</td>
</tr>
<tr>
<td>NPM4.1, 4.2, 4.3</td>
</tr>
<tr>
<td>MAT4.1, 4.2</td>
</tr>
</tbody>
</table>

### Year 7

**Dealing with Risk in Social Environments**

- **PH4.1, 4.3, 4.5**
- **PD4.1, 4.2**
- **All L4 English CLOs**

**How Can We Promote Sustainable Energy?**

- **TP4.3, 4.4**
- **EC4.1, 4.2, 4.3**
- **SYS4.1, 4.2**
- **All L4 English CLOs**

**Can We Learn from the Past & Create the Future?**

- **TCC4.1, 4.3, 4.5**
- **C14.2**
- **SRP4.1, 4.2, 4.3, 4.5**
- **All L4 English CLOs**

**How Can We Stop Damaging Living Systems?**

<table>
<thead>
<tr>
<th>L4 English CLOs</th>
</tr>
</thead>
<tbody>
<tr>
<td>TP4.3, 4.4</td>
</tr>
<tr>
<td>EC4.1, 4.2, 4.3</td>
</tr>
<tr>
<td>SYS4.1, 4.2</td>
</tr>
</tbody>
</table>

### Some Core Learning Outcomes from Maths and The Arts could also be incorporated.

- Some CLOs from Maths and The Arts could also be incorporated.
- Some CLOs from Maths and The Arts could also be incorporated.
- Some CLOs from Maths and The Arts could also be incorporated.
HOW CAN WE PROMOTE SUSTAINABLE ENERGY?
A Transdisciplinary Investigation of Our Technological World for Year 7

Our transdisciplinary approach to curriculum integration dissolves the 'body of knowledge' boundaries between the disciplines, and makes use of generic curriculum elements commonly associated with various disciplines to shape curriculum to support student engagement in productive citizenship and construction and reconstruction of meaning through real-world issues, questions and problems.

1. Essential Learnings & Outcomes addressed in the investigation

(Queensland example)

**Science:**
- EC4.1 Students design and perform investigations into relationships between forces, motion and energy.
- EC4.2 Students collect and present information about the transfer and transformation of energy (including potential and kinetic energy).
- EC4.3 Students present alternative ways of obtaining and using energy (including energy from the sun and from fossil fuels) for particular purposes.

**Technology:**
- TP4.3 Students identify and make use of the practical expertise of others when following production procedures to make products for specific users.
- TP4.4 Students gather feedback to gauge how well their design ideas and processes meet design challenges and how effectively products meet the needs of specific users.
- SYS4.1 Students identify and explain the logic of systems and sub-systems.
- SYS4.2 Students incorporate feedback to refine and modify systems and/or sub-systems.

**English:**
- Cu4.1 Students identify implied messages and draw conclusions when listening; take account of their relationship with listeners, when developing a main idea or point of view in a range of prepared and spontaneous texts.
- Cu4.2 Students interpret texts considering likely purposes, audiences and implied messages; identify how construction of characters contributes to plot development in narratives; and summarise relevant information and draw conclusions from reports and expositions.
- Op4.1 Students use and respond to patterns in generic and clause structures, extended noun groups and a range of non-verbal, spoken and auditory resources, modals, evaluative verbs and adjectives and interpret figurative language.
- Op4.2 Students use patterns in generic, sentence and clause structures; interpret figurative language, symbols, modality, evaluative verbs and adjectives shot types and camera angles; and use word origins and sound, visual and meaning patterns in words.
- Op4.3 Students organise and link ideas using generic structure, paragraphs, topic sentences and theme; indicate certainty using modals; elaborate ideas through dependent and independent clauses, extended noun groups, and visual resources; and use common punctuation marks and a multi-strategy approach to spelling.
- Cr4.1 Students identify how the selection of subject matter, attributes, processes, gestures and voice qualities is influenced by likely characteristics of the listener and how these construct representations.
- Cr4.2 Students identify how aspects of subject matter and textual resources construct representations of people, places, events and/or things to appeal to different groups; and explore how their own membership of groups influences their reading/viewing.
- Cr4.3 Students choose aspects of subject matter, attributes, processes and visual resources to construct representations of people, places, events and things in ways that appeal to certain groups.

2. Relevant real-world contexts, needs, questions and/or purposes driving the investigation

Fossil fuels provide over 80% of the world’s energy. These fuels, most importantly coal, oil and gas, will not last forever: they are non-renewable resources. They are also damaging to the environment in a variety of ways. There is, therefore, an increasing need to develop and promote new forms of energy.

3. Generic Curriculum Elements essential (in bold italics) to the investigation, or optional

- **Design, make, appraise** (scale model, following production procedures, and gathering and responding to feedback when designing and applying production systems)
- Email
- **Explanation - written**
- Explanatory diagram / Design plan
- Graph
- Information literacy (sourcing, evaluating and using the practical advice of others)
- Letter of invitation
- **Letter of persuasion** (exposition)
- Oral presentation (including ICT)
- Promotional flier / leaflet
- Promotional poster
- Scale model
- Scientific experiment
- Scientific experiment report
4. Understandings essential to the investigation

Basic concepts and principles relating to forces and motion.
Basic concepts and principles relating to energy, including its forms, sources, uses, conversion and conservation.
Systems and sub-systems assist in translating design ideas into products which meet particular needs.

5. Methods of assessing Generic Curriculum Elements, incl. perf. criteria and standards

Generic curriculum elements in bold italics are addressed in this investigation. Inclusion of others is optional. Essential understandings, and those essential generic curriculum elements that lend themselves to assessment with rubrics or by other means, should be assessed. Assessment of optional generic curriculum elements is itself optional. For example:

The Scientific Experiment Report Rubric is used to assess “Designing and performing scientific investigations” and “Writing a scientific investigation report”.

The Oral / Multimedia Presentation Rubric is used to assess “Giving an oral / multimedia presentation”. This rubric also reflects student performance relating to “Sourcing and using the practical advice of others”, “Following production procedures”, and “Gathering and responding to feedback when designing and applying production systems”, as well as student understanding of how “Systems and sub-systems assist in translating design ideas into products which meet particular needs”.

Understanding of “Basic concepts and principles relating to forces and motion” and “Basic concepts and principles relating to energy, including its sources, forms, uses, transfer and transformation” are assessed via the ‘Conclusion’ criterion of the Scientific Experiment Report Rubric, and via the ‘Understanding’ and ‘Organisation’ criteria of the Oral / Multimedia Presentation Rubric. Performance quality ratings for criteria relating to understanding also reflect teacher observations of student performance and discussions during learning activities, and student comments and ratings on self- and peer-assessment sheets.

Other Generic Curriculum Elements are assessed similarly, or in other appropriate ways.

6. Activities to support student learning

**STEP 1 – NEGOTIATE ISSUE**

(Issues in Transdisciplinary Investigations, unlike those in Personal Learning Projects, are largely teacher- and/or school-determined in order to address mandated core learning outcomes.)

**STEP 2 – CLARIFY EXPECTATIONS**

(Assessment requirements in Transdisciplinary Investigations, unlike those for Personal Learning Projects, can be explained as the investigation unfolds, and might only be flagged in very general terms at the commencement of the investigation.)

**STEP 3 – ORIENTATION**

Consider artistic/photographic interpretations of the energy crisis (including group work) and individually create an artistic interpretation.

Decorate room and/or make collage with magazine pictures showing benefits of energy.

Consider poetic and song lyric perspectives (eg. Julian Lennon, Salt Water Runs in My Eyes).

Read some fiction or non-fiction about climate change, Greenhouse Effect, or energy crisis.

Think, pair, share. What is energy? Where does it come from? What good effects does it have? What bad effects? Consider various statistics re energy crisis.

Word search? Students make them, then swap and do. Crossword? Make in groups.

Define the problem / identify what’s ‘known’ and what needs to be ‘known’.

5W+H – What do you know already?

Questioning.

Question matrix.

**STEP 4 – INFORMATION GATHERING**

Options: CD (eg. QUT, Sustainability), surveys, questionnaires, interviews, writing/faxing to request information, emailing, telephoning, Internet search, experiment, trial, observation, excursion (petrol company? solar powered facility or house?), invite visiting speaker (Greenpeace, the Greens, solar company or solar powered facility, petrol company), online/print encyclopaedia, videos, fiction and non-fiction texts.

Survey parents re energy concerns/actions/forms now and after presentation.

School energy audit? Develop a rating scale for domestic or organisation energy practices.

Science experiment.

Recent newspaper articles on energy crisis or alternative energy.

**STEP 5 – INFORMATION PROCESSING (DESIGN)**
Retrieval chart.
Summary.
Processing of information gathered eg. creating tables and graphs from survey.
Assumption testing. How have others seen the problem? Who benefits from the continued use of non-renewable energy?
Include a kinaesthetic science experiment such as bicycle stopping distances > science reports > chart, graph, statistical analysis.
Reading and questioning texts (including songs? poems?). Think, pair, share. Who benefits? Who suffers? Who has suggested alternatives?
Brainstorm in group questions to ask visitor.
After visitor do PMI (positive, minus, interesting) or SWOT (strengths, weaknesses, opportunities, threats) analysis.
Web quest.
(Could cover Chance & Data outcomes 4C1 and 4C2.)

STEP 6 ~ APPLICATION (MAKE)
Make, apply, propose, promote.
(The following items are obviously designed then made, planned then written and sent, etc.)
Persuasive letter (to local, state or federal politician? business?)
Presentation (oral and/or multimedia) – for parents? Year 6?
Newsletter item.
Radio advertisement for solar or solar/petrol car.
Email.
Petition.
Produce posters.

STEP 7 ~ EVALUATION (APPRaise)
Reflection, testing, consultation re suitability of proposals/solutions.
PMI or swot analysis based on:
Did we influence anybody? Or will we? (Blue hat)
How did you feel about the investigation unit? (Red hat)
How did you benefit from the unit? (Yellow hat)
How might you do things differently in future? (Green hat)
Self-assessment.
Peer-assessment.

STEP 8 ~ PRESENTATION
Include in presentation:
graphs?
a personally composed poem?
a personally drawn cartoon?
a rap song?
a musical (recorded) collage?
a personally created board game?
a drawn diagram (scanned) of an alternative energy source and/or a model/diorama to scale?
(Could cover Media outcomes ME4.1, 4.2 and 4.3, and Visual Arts outcomes VA4.1, 4.2 and 4.3.)

STEP 9 ~ ASSESSMENT
See sections 4 and 5 above. Most assessment will not be chronologically the last step.

7. Resources to support student learning and teacher planning

Australian and New Zealand Solar Energy Society website, [www.anszes.org](http://www.anszes.org)
Blue Planet Intergalactic Rescue (interesting UK schools' project), [http://millennium-debate.org/blueplanet/bpenter.htm](http://millennium-debate.org/blueplanet/bpenter.htm)
Griffith University, Sustainability (a CD).
Infoplease.com, free online encyclopaedia, [www.infoplease.com](http://www.infoplease.com) (searches on force, laws of motion, energy, including types, environmental considerations, and the search for new sources)
Esso Mobil Australia’s website statement of values regarding the environment, [www.mobil.com.au](http://www.mobil.com.au) (from Our Values drop down menu, choose Environment)
Renewables in Global Energy Supply – An IEA Fact Sheet (a 12 page leaflet downloadable in pdf format), [www.iea.org/leaflet.pdf](http://www.iea.org/leaflet.pdf)
APPROPRIATE ASSESSMENT STRATEGIES

The school's program of learning is based on four distinct kinds or forms of learning activity, each of which overlaps and complements the others.

FOCUSED LEARNING: Subject- or content-focused learning and teaching targeting core learnings (understandings and generic skills and practices) identified within the syllabus that cannot practically be learned and mastered solely in complex, transdisciplinary or real-life contexts.

Appropriate Assessment: A variety of authentic (in context, rather than add-on) assessment methods is appropriate to support teacher judgements about student learning. These may include observation, performance, samples, written tasks, portfolios, discussion, self-assessment, peer-assessment, and appropriate forms of test. In demonstrating learning, students will often perform/complete generic tasks, procedures and genres from the Key Learning Area. Many of these generic curriculum elements may be assessed using rubrics (describing a developmental continuum), and serve not only as indicators of curriculum area learning, but also of one or more of the key abilities.

TRANSDISCIPLINARY INVESTIGATIONS: Complex, active-learning investigations are based on significant issues, tasks, questions or problems, each informed by syllabus learning outcomes and generic curriculum elements from several Key Learning Areas.

Appropriate Assessment: A variety of authentic (in context, rather than add-on) assessment methods is appropriate to support teacher judgements about student learning. These may include observation, performance, samples, written tasks, portfolios, discussion, self-assessment, peer-assessment, and appropriate forms of test. In pursuing investigations, students will often perform/complete generic tasks, procedures and genres from a variety of Key Learning Areas. Many of these generic curriculum elements may be assessed using rubrics (describing a developmental continuum), and serve not only as indicators of curriculum area learning, but also of one or more of the key abilities.

COMMUNITY DEVELOPMENT: Real-life, on-going, multi-participant projects with consequential, public outcomes, which provide authentic contexts for complex role performance and a wide variety of identified generic curriculum elements.

Appropriate Assessment: Where activities involve performance/completion of generic tasks, procedures and genres, these are assessed using rubrics (describing a developmental continuum), which serve as indicators of performance of one or more of the key abilities. In addition, appropriate authentic assessment methods to support teacher judgements about generic curriculum element and/or key ability performance levels may include observation of performance, samples, journals, portfolios, expert/mentor reports, discussion, self-assessment and peer-assessment.

PERSONAL LEARNING PROJECTS: Largely student-initiated and student-directed, problem-based or purpose-based learning activities, in which the topic and the generic curriculum elements to be incorporated in the project are negotiated for individuals and/or groups.

Appropriate Assessment: Performance/completion of generic tasks, procedures and genres (core learnings) are assessed using rubrics (describing a developmental continuum), which serve as indicators of performance of one or more of the key abilities. In addition, appropriate authentic assessment methods to support teacher judgements about generic curriculum element and/or key ability performance levels may include observation of performance, samples, portfolios, discussion, self-assessment and peer-assessment.
### KEY ABILITY PERFORMANCES

**Teacher:** Teachers Name

**Class:** Class Name

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<th>Student Name: Blo, Jo (example)</th>
<th>Key Ability</th>
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323
This profile represents your progress on a continuum which spans the years of compulsory schooling. Your current level of performance (indicated only by the boxes with dark sides) is based on your activities this semester in a wide variety of curriculum activities. The current performance level of the majority of students in your Year Level at Sample Primary School is indicated by the grey shading. Each person is unique and develops differently from others physically, mentally, emotionally and socially.

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<th>KEY ABILITY</th>
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<th>Advanced</th>
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<tbody>
<tr>
<td>Understanding</td>
<td>You remember familiar objects, people, places and routines, and you understand very simple ideas such as up/down, on/off, forwards/backwards.</td>
<td>With help, you are beginning to show some understanding of simple ideas and ways of making new knowledge, and you are beginning to apply these.</td>
<td>You are showing, without help, some understanding of simple ideas and ways of making new knowledge, and you are developing the ability to apply them.</td>
<td>You are showing a deep understanding of simple ideas, and/or a basic understanding of complex concepts and ways of making new knowledge, and the basic ability to apply these in some contexts to achieve goals.</td>
<td>You are demonstrating a deep understanding of a variety of complex concepts and ways of generating knowledge, and you apply these proficiently and purposefully in a variety of contexts.</td>
<td>You are demonstrating a deep understanding of a wide variety of complex concepts and ways of generating knowledge, and you apply these very proficiently, purposefully and confidently in a variety of contexts.</td>
</tr>
<tr>
<td>Multiliteracies</td>
<td>You are able to respond to the actions and simple communications of others, to begin contact with others, and to communicate your own basic needs and wants.</td>
<td>With help, you are beginning to compose and interpret communications with others, using speech, writing and technology.</td>
<td>You are developing some ability to compose and interpret, without help, various types of communications with a variety of audiences, in a variety of contexts, using speech, writing and technology.</td>
<td>You are showing a reliable, basic ability to compose and interpret, without help, various types of communications with a variety of audiences, in a variety of contexts, using speech, writing and technology.</td>
<td>You are showing confidence and skill in composing and critically interpreting a range of spoken, written and technological texts to communicate with a variety of genuine audiences and in a variety of contexts.</td>
<td>You are demonstrating a high level of skill in composing and critically interpreting a wide range of spoken, written and technological texts to communicate with a wide variety of genuine audiences and in a wide variety of contexts.</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>You are aware of your surroundings, notice and understand very simple information, and are able to remember and follow simple rules and routines. You can select correct equipment, and check presence, position and simple amounts, and can make simple decisions.</td>
<td>With help, you are beginning to select and describe some simple concerns, problems or goals, and to gather, manage, examine and combine information to find out about the concerns, solve the problems, or work towards the goals.</td>
<td>You are developing some ability to select and describe, without help, some simple, real-life concerns, problems or goals, and to gather, manage, examine and combine information to find out about the concerns, solve the problems, or work towards the goals.</td>
<td>You are showing a reliable, basic ability to select and describe, without help, some real-life concerns, problems or goals, and to gather, manage, evaluate, examine and combine information to investigate, solve or pursue them.</td>
<td>You are showing confidence and skill in selecting and describing a variety of real-life issues, problems or purposes, and confidence and skill in gathering, managing, evaluating, analysing and synthesising relevant information to investigate, solve or pursue them.</td>
<td>You are demonstrating a high level of insight in selecting and describing a wide variety of real-life issues, problems or purposes, and a high level of confidence and skill in gathering, managing, evaluating, analysing and synthesising relevant information to investigate, solve or pursue them.</td>
</tr>
<tr>
<td>Creativity</td>
<td>You are able to try out some simple skills in using materials, movement, methods and tools in simple tasks and/or artistic performance, and you are beginning to notice elements of art forms.</td>
<td>With help, you are beginning to picture in your mind new ways of thinking about, presenting or doing things to bring about new ideas, things, methods and/or performances.</td>
<td>You are developing some ability to picture in your mind, without help, new ways of thinking about, presenting or doing things to bring about new ideas, things, methods and/or performances.</td>
<td>You are showing a reliable, basic ability to use imagination, artistic judgement and/or a readiness to undertake projects to develop new ideas, products, systems and/or performances, using suitable processes or technologies.</td>
<td>You are showing confidence and skill in the use of imagination, artistic judgement and/or enterprise in developing new ideas, products, systems and/or performances, using a variety of processes or technologies.</td>
<td>You are demonstrating a high level of imagination, aesthetic judgement and/or enterprise in developing new ideas, products, systems, art works and/or performances, using a wide variety of processes or technologies.</td>
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<tr>
<td>Self Management</td>
<td>You are able to make simple, personal requests and decisions, attend to a task, perform some movement skills with and/or without equipment and follow a planned sequence of actions.</td>
<td>With help, you are beginning to choose, plan, discuss, manage and check your own learning and other purposeful activities.</td>
<td>You are developing the ability, without help, to choose, negotiate, plan, manage and evaluate your own learning and other purposeful activities.</td>
<td>You are showing a reliable, basic ability to choose, negotiate, plan, manage and evaluate your own learning and other purposeful activities.</td>
<td>You are showing initiative, insight, confidence and skill in choosing, negotiating, planning, managing and evaluating your own learning and other purposeful activities.</td>
<td>You are demonstrating a high level of initiative, insight, confidence and skill in choosing, negotiating, planning, managing and evaluating your own learning and other purposeful activities.</td>
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<tr>
<td>Community Participation</td>
<td>You are able to follow one-step directions related to routines in varied environments and display appropriate social behaviour.</td>
<td>With help, you are beginning to join in and help out in a variety of local and distant real life contexts involving groups of people.</td>
<td>You are developing some ability to join in and contribute, without help, both individually and in a team, in local and distant real life contexts involving groups of people.</td>
<td>You are showing a reliable, basic ability to participate and contribute, both individually and in a team, in a variety of local and remote, real life, social and cultural contexts.</td>
<td>You are showing the ability to participate and contribute confidently and effectively, both individually and in a team, in a variety of local and remote, real life, social and cultural contexts.</td>
<td>You are demonstrating a high level ability to participate and contribute confidently and effectively, both individually and in a team, in a wide variety of local and remote, real life, social and cultural contexts.</td>
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