Intellectual tools for probing beneath the curriculum canopy

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"The school curriculum... sits at the heart of the process by which we educate our children."

(Goodson, 1994, p.16)

Abstract

This paper raises a concern about the direction of curriculum development in New Zealand, and then describes various theories and models that may be used to gain a wider perspective on some of the curriculum changes, and also of the process of curriculum development itself, of recent years. A consideration of postmodernism and democracy is suggested as an alternative way forward.

Introduction

Do you feel any concern about the direction that curriculum development has taken in New Zealand in recent years? Do you suspect that the curriculum is portraying a distorted notion of what knowledge is? Do you wonder whether your professionalism is being devalued and that you are now expected to be little more than a technician? Could it be that democracy itself is being eroded by the new curriculum demands? Has the pace of change been so rapid and the extra bureaucratic demands so numerous that there is difficulty seeing the wood for the trees? Is it indeed possible that New Zealand has experienced a 'curriculum debacle' as Ellerton and Clements (1994) concluded has been the case in Australia?

Our view is that these kinds of concerns are indeed real and need to be taken very seriously if, as Lovat and Smith (1991) suggest, we value rebuilding a democratic, just, humanly satisfying and ecologically sustainable society for our children. Let us explain our concern a little further and consider what this might have to do with education. The form of our current curricula (for example, the objectives, levels, and so forth) was transplanted from England by Lockwood-Smith, a former Minister of Education, so it is instructive to be aware of some of the critique of the English curriculum.

In Goodson's (1994) view, the prescriptive national curriculum in the United Kingdom was presented as part of a project of economic regeneration. But the dominant mode used to develop and promote the curriculum was one of scientific management drawn from early 20th century industrial practices where the emphasis was on mass producing commodities. This resulted in the reconstitution of older class-based traditional subjects, the reassertion of state control (through the specification of attainment targets, programmes of study and assessment procedures), and a parallel diminution of teachers' powers. As Elliot (1988, p.44) observed, "National curriculum reform has adopted a confrontational stance toward teachers" and, curriculum-wise, the Minister of Education expects them to do anything they are told to do without question (as two of us observed when we visited English schools and higher education institutions during 1998). In short, the curriculum reforms have denied teachers a voice, and were foisted on them by legal edict. Unfortunately, if teachers are deprived of freedom, initiative and responsibility then they are likely to treat their children in the same way. The result tends to be 'mechanical obedience' which is totally detrimental to democratic principles and practice and, "fatal, in the long run, to mental and spiritual growth" (Goodson, 1994, p.107).

In this so-called 'rationalistic' or 'objectives' approach to curriculum development, knowledge is reduced to fragments of information and skill, and then reassembled into a

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linear hierarchy of objectives and 'truths'. Such an approach portrays the 'production' of 'educated' people as a technological problem of specification and manufacture, and the view of knowledge thus conveyed (largely content to be 'mastered') is regarded by Elliot (1994) as culturally obsolete. He considers that the whole approach amounts to one of socially engineering change. As Grundy (1987, p.116) noted, "Those who have the power to control the curriculum are those who have the power to make sure that their meanings are accepted as worthy of transmission." The result is summed up extremely well by Marshall and Sears (1990, p.17); "Like some huge and tragic pedagogical pyramid scam, those furthest from the apex receive the least amount of power and are simultaneously thwarted from realizing their own."

The above critique suggests to us that as teachers in New Zealand we need to be critical of our own curricula. In Cornbleth's (1990, p.3) view, "A critical perspective entails questioning appearances and taken-for-granted practices, probing assumptions and implications." This is all the more necessary when we realise that, "Many of the forces that have transformed corporate structures, shifted the distribution of wealth and undermined the coherence of human relations in our society now promise to alter and degrade education at all levels" (Winner, 1997, p.1). Further, it is well recognised that "...the process of curriculum change is essentially a process of contestation and struggle between individuals and social groups whose different views about the curriculum reflect their different views about the good society and how it may be created" (Carr, 1993, p.7).

You might ask, can we not simply assume that the official curriculum documents handed down to us have been developed by 'experts', and must therefore be soundly based? The answer is no, we cannot make such assumption. These documents are **politically** based and, for various reasons usually beyond the control of the curriculum writers, the curricula we are required to implement are not necessarily soundly based at all - educationally speaking. For example, as Elley (1993) has pointed out, the 'levels' structure in the current curriculum documents has no research basis whatsoever. Rather they are no more than a naive artefact used to reassemble fragmented knowledge into a linear hierarchy of information.

In our view, any serious examination of curriculum should address the following key questions:

- What influences our curriculum?
- What **assumptions** underpin a particular official curriculum, and its development?
- What hidden agendas may be operating within it?
- Does the curriculum have internal coherence, that is, are all aspects consistent, or are some (e.g. assessment) in conflict with others (e.g. goals)?
- Does the curriculum have external validity, that is, is it consistent with the highly regarded values of the community or society it is intended to serve, or is it likely to undermine these? Does it serve everyone, or only a small elite?
- Do teachers have a role in curriculum construction? Do children?
- Does the curriculum reflect democratic principles?

A difficulty in addressing such questions lies in accessing intellectual tools that would allow us to engage in such critical examination. Several general books on curriculum have been published recently, for example, Brady and Kennedy (1999), and McGee (1997), but none provides a ready reference of conceptual tools that may be used by teachers to analyse both New Zealand curricula and the process by which they have been developed. Perhaps the publication which comes closest to doing so is Print's (1993) book on curriculum development and design, but this offers just four categories of conceptual tools, whereas our search of the literature indicates that there are almost three times that number available. This paper aims to summarise the 11 conceptual categories that we have identified. But first, we take a brief look at the meaning of 'curriculum' and 'curriculum development'.

What is curriculum?

We agree with Goodson (1994) that 'curriculum' is a perennially elusive and multifaceted concept or, as Alcorn (1995, p.9) puts it, "Curriculum is a slippery and problematic term with many layers of meaning." Most authors are agreed, however, that it is a social artefact or cultural construct, that is, that it is something constructed by people rather than something with some 'god-like' authority of its own. Furthermore, as Chandler (1992, p.41) notes, it is "...a value-laden enterprise." Some see it as a static thing while others consider it a dynamic process. We return to this point in a moment but first, let us outline (see Figure 1) some of the main layers of curriculum that have been identified.

NATIONAL LEVEL:

- The official curriculum documents, often accompanied by handbooks of suggestions. This is the **intended** curriculum.
- Ideas promoted by subject associations via conferences and publications.

SCHOOL LEVEL:

- School policies, schemes, texts and other resources, and topics or units of work planned by

departments and syndicates. This is the **interpreted**, perceived and planned curriculum.

- The learning experiences provided by the teacher for the children. This is the implemented, taught, delivered, practised, portrayed, operational or **enacted** curriculum.

LEARNER LEVEL:

- The meanings constructed by the children as a result of the above experiences. This is the constructed or **learnt** curriculum, and includes things that children learn from the teaching process itself and things that they construct from the experiences (sometimes unintended by the teacher) based on their prior ideas. This latter dimension is the implicit or **hidden** curriculum.

Figure 1: Layers of curricululm

From the point of view of what is really happening for learners in the institution called school, we take the position that curriculum is a **dynamic** process involving all of these layers.We recognise that the taught curriculum is the school's and teacher's interpretation or adaptation of the official, formal or intended curriculum - given the constraints of the classroom (e.g. a high proportion of 'disturbed' children), or the desire to take advantage of special opportunities that arise. We are also aware that what children learn may be different from what the teacher intended. We agree with Chandler (1992, p.35) that, in the final analysis, "The curriculum is constructed within each class" and that the children play an active part in this process.

Further, we think there is merit in Eisner's (1985) idea of the 'null' curriculum, that is, that what is omitted from the curriculum also has consequences for learners. For instance, if a study of Antarctica portrays only male scientists visiting the ice then the hidden message is that scientific work in the Antarctic is the domain of men, and perhaps that science itself is a domain for men only.

We agree with Lovat and Smith (1991, p.7) that in many ways the curriculum "creates reality for learners" and that, "For some learners, the reality created matches fairly closely with their own life experience. For others, it is very different, even conflicting." This is often the case with children from a cultural background different from that of the majority of children in the classroom, but it can also be the case when children are studying something that is contrary to their current ideas. Some of Alton-Lee's classroom research illustrates this well. Her data on children's learning during a social studies unit indicated that, ...not only was there no change in the children's attitudes [about conservation of elephants], but the change that did occur was, overall, in direct conflict with what was taught. The children seemed to be accommodating what is being taught to their own view of what life and learning is all about....they do not learn what obviously runs counter to that view. (Alton-Lee, 1983)

What is curriculum development?

If curriculum is a dynamic process and operates at a variety of

"It seems to be a feature of the curriculum process that there are competing views and assumptions..."

levels, then how can curriculum development be characterised? We support Bell's (1985) view that curriculum development is "changing the curriculum to improve learning" but, we would add, in ways that benefit both learners and society. In this we consider that classroom teachers have a major professional role to play. We believe that the role will be enhanced by use of the conceptual tools we describe in the remainder of this paper.

Some conceptual tools for curriculum analysis

Before we describe some useful conceptual tools, we should mention others that are not included in this paper. *Historical* and *comparative* study of earlier and other curricula respectively, can provide many valuable insights as such curricula often contrast quite markedly with current New Zealand curricula (see, for instance, Part One in McCulloch, 1992).

ASPECT/DIMENSION	CONCEPTIONS, APPROACHES, MODELS
1. Society	• Individualism: private gain
	• Collectivism: public good, democratic
2. Purpose of education and curriculum	• Social control: reproduction of existing order,status quo
	• Empowerment/enablement:liberation,
	• Emancipation, social reconstruction to improve society
3. SchooL	• Technocratic institution
	• Community of learners
4. Knowledge	• Static: positivist, absolute, fixed, unchanging, linear, hierarchical
	• Dynamic: social construction
5. Curriculum	• Academic rationalist: reductionist
	• Cognitive processes
	• Humanistic
	• Social reconstructionist
	• Technological
	• Eclectic
6. Curriculum ideology	• Classical humanis
	• Utilitarian/technocratic/bureaucratic: individualised, systems model
	• Reconstructionism: transformative, democratic
	• Progressivism: integrated, personalised
7. Locus of curriculum	• Centrally baseddevelopment and control
	• School based: negotiated
8. Curriculum design	• Subject centred
	• Learner centred
	• Problem centred
	• Core curriculum
9. Curriculum development process	• Rational: objectives/cyclic approach
	• Interactionist
	• Naturalistic: deliberative
10. Curriculum diffusion	• Centre-periphery
	• Social interaction
	• Research, development and diffusion (RD&D)
	• Problem solving
11. Curriculum change strategies	• Power/coercive
	• Rational/empiric
	• Normative/re-educative

Figure 2:
A summary of conceptions relating to curriculum

Learning theories (see Biddulph and Carr, 1999) also constitute another set of analytical tools which can be used to probe the basis of curriculum documents and practices.

It seems to be a feature of the curriculum process that there are competing views and assumptions which result in quite different interpretations and practices, and have quite different consequences for teachers, learners and indeed society. As Print (1993, p.34) has put it, "How curriculum developers perceive the world, and hence education... will affect how individuals perceive and relate to the curriculum." Ways in which different curriculum developers (or those providing the terms of reference for curriculum writers) have perceived of the interrelated dimensions of society, education, school, knowledge and curriculum are outlined below. These are simplifications, but are nevertheless likely to be of value. We summarise them (see Figure 2) and provide a brief explanation of each.

Conceptions of society

There are two contrasting views about the nature of society (Neyland, 1995).

1. Individualistic view

This views society as made up of isolated individuals in which human action is determined by (i) self-interest in private gain, and (ii) the various mechanisms of the market place. Associated with this view is one of education as a commodity available for the betterment of the individual, particularly the kind of individual who benefits under a market regime.

2. Democratic view

Society here is seen as a collective of interacting individuals. Human action and identity are considered to stem from such interaction. It is

FUNDAMENTAL POSTULATE		EDUCATIONAL IMPLICATION
(1)	People are EQUAL - but **not** identical	Children can learn equally only as they learn differently. It is necessary to make provision for a variety of learning styles. Teaching must connect with the individual lives of children.
(2)	People are FREE - that is, free to choose (and as they choose differently, so they grow differently) .	Children should have opportunities for significant choice and self-direction based on understanding (i.e. informed choice). Children should be regarded as co-agents in the process of education.
(3)	People are RATIONAL - that is, they use reason to make sense of things that matter.	Children's autonomy as learners should be respected; they should have opportunities to direct their **own** learning in accordance with their **own** resources and dispositions.

Figure 3:
Educational implications of democratic principles

recognised that power exists in social interactions, and that social changes must be based on democratic decisions of a critical citizenry. Here education is seen as a public good; it is important for a critical democracy as it contributes to individual and social liberation, as well as re-creation of society.

Despite the contrary view of a tiny minority of people (as noted by Harris and Tiname, 1998), we believe that most New Zealanders value the principles of democracy as the foundation for our society. For this reason, we include some comment on what this means for education. To do so we draw upon Hawkins' (1974) ideas, as spelt out in a chapter entitled "Human nature and the scope of education". We summarise Hawkins' analysis in Figure 3.

"There are no final goals; instead education is conceived as a series of valuable journeys accessible to all who wish to learn."

The link between curriculum and democracy will be revisited at the end of this paper.

Purpose of education and curriculum

There are two major conflicting views about the purpose of education, and hence curriculum.

1. **Education as social control**

As Wood (1988) and Chandler (1992) explain, this purpose is concerned with maintaining the status quo, which really means ensuring that a dominant group (an elite) is able to retain power. The intention is to produce social conformity. It is characterised by a concern for standards and correct answers. The curriculum acts as a gate-keeping mechanism to allow a few to rise to the echelons of power, and to legitimate the rest as followers.

2. Education as empowerment/ enablement

The intention here is to enrich and improve all individuals and hence society. In this sense, education is a means to emancipation or liberation from the power of a dominant minority. There are no final goals; instead education is conceived as a series of valuable journeys accessible to all who wish to learn.

Conceptions of the school

Neyland (1995) suggests that there are two dominant images of the school.

1. Technocratic model

This involves an industrial metaphor in which schools produce outputs (students) with certain standards (specified levels of achievement) by the most efficient means possible. Competition for students, and hence funding, is a mechanism in this process. Teachers need controlling to produce the required outputs; they must prove that they are actually doing so.

2. Community of learners model

Here the school is seen as a place of critical dialogue involving a consideration not only of ideas from the various disciplines but also of societal issues and values to do with democracy (e.g. social justice, human liberation). The outcomes of the learning process cannot be precisely defined for every learner.

View of knowledge

Again there are two major opposed views about the nature of knowledge.

"...any curriculum is centrally concerned with the nature of knowledge." (Lovat and Smith, 1991, p.6)

1. Static view

This positivist, traditional, classical or objectivist view considers knowledge to be fixed, unchanging and unalterable. Lovat and Smith (1991) mention that the idea goes back to Plato, and is associated with the notion of 'cultural heritage'. In terms of subjects such as mathematics and

science, knowledge is thought of as an objective external entity, something that exists independently of human thought and action. The 'truths' and elements involved are considered absolute and value-free, have always been there, and have been uncovered or revealed by mathematicians and scientists so that they are accessible to (some) others. Not surprisingly, perhaps, within this perspective, knowing and doing are considered separate things.

2. Dynamic view

This view stems from the idea of Protagoras (Lovat and Smith, 1991). It considers knowledge to be the result of ongoing human endeavour and to be dynamic and ever-changing. Within this view, disciplines such as mathematics and science are seen as social creations or human constructions which are always evolving, changing and being extended. This perspective considers knowledge to be fallible and value-laden, not absolute. Knowing and doing are viewed as inseparable.

Conceptions of curriculum

Print (1993) identifies five ways in which the curriculum has been viewed, and adds a sixth. The sixth reflects the reality that the view of curriculum held by individuals is usually an integration of several of the conceptions below.

1. Academic rationalist conception

The major function of the curriculum in this view is to enhance the individual's intellectual abilities in those academic subjects most worthy of study, that is, those which contain the accumulated wisdom of society. It is mostly teacher-centred with didactic, expository methods together with some inquiry typical of the disciplines. Evaluation is largely via examinations and the testing of knowledge and skills. A highly reductionist approach to the academic subjects is taken, which in turn enables extensive specification of 'objectives'.

2. Cognitive processes conception

The focus here is on providing students with the necessary skills and processes to help them learn how to learn, and to give them opportunities to use and develop their variety of intellectual faculties. Problem solving using content from the academic disciplines will be evident. A combination of student-centred and teacher-centred learning strategies are used. Evaluation focuses on the testing of cognitive skills but especially the application of those skills to solving problems.

3. Humanistic conception

The main purpose here is to provide learners with intrinsically rewarding experiences to enhance personal development. An holistic curriculum approach is used with integration of cognitive, affective and psychomotor domains for experiential self-learning, especially involving 'real life' problems and issues. The teacher is a facilitator, resource person, and provider of a supportive environment. Qualitative measures are mostly used for evaluation purposes with an emphasis on processes used for gaining understanding.

4. Social reconstructionist conception

Here the needs and betterment of society are placed above those of the individual. The curriculum is designed for social reform to produce a better society for all. Content is drawn from societal needs, social issues, current ideals and future aspirations. Processes and skills are considered very important, (e.g. analysis, deduction, information-processing, inquiry), particularly the development within students of critical and reflective thinking skills. Group activity (e.g. investigation of social problems), and cooperation with the community are stressed. Students themselves are usually involved in the construction and administration of assessment instruments such as tests and examinations.

5. Technological conception

The idea here is to make the best possible use of technology to facilitate one or more of the other conceptions described above.

6. Eclectic conception

This is a combination of elements of two or more of the above conceptions.

Ideologies behind curriculum

Four main ideologies can be identified.

1. Classical humanism

This is a curriculum based on knowledge in the classical tradition. Curriculum development is concerned with determining the knowledge to be passed on. In terms of, say, mathematics and science it usually amounts to mathematics and science education for an elite group, the idea being to sharpen the mind.

2. Utilitarian, technocratic, bureaucratic

This curriculum is intended to develop the competencies and skills needed for work and industry. There is an emphasis on objectives and testing. Underlying this view is a belief that learning is highly individualised and that a systems approach is the most efficient (Carlson, 1988). In a recent insightful paper, Soler (1998) provides a clear example of this ideology being promoted in the New Zealand context in the 1940s. She describes how some members of the then opposition National Party and representatives of business and manufacturers began insisting that literacy (reading) standards were falling, and questioning whether taxpayers were getting proper value for their education money. The outcome was the adoption of the "Janet and John" series of readers with their skills orientation. In other words, political influence produced a technocratic approach to curriculum.

3. Reconstructionism

The focus here is on the improvement of society. Knowledge construction is justified in terms of both individual and societal needs. Teachers are seen as agents of cultural renewal. It is considered important that mathematics, science, technology, literacy education, for instance, be

for all. There is a concern for equity within this ideology. Essentially it involves a transformative (Davis, Sumara and Kieren, 1996; Doll, 1993) and democratic (Carlson, 1988) view of curriculum.

4. Progressivism

This is a learner-centred ideology in which the focus is on the learner's personal development processes, learning needs and interests. It involves a belief in a personalised and integrated curriculum approach (Carlson, 1988).

Locus of curriculum development and control

Two major and opposing loci of development and control are identifiable, although in practice the distinction is not always so clear cut. For example, teachers may be involved (as of right, or by invitation, or through some contract arrangement) in the centrally based curriculum initiative.

1. Centrally based

This is the case where curriculum change is initiated, developed and disseminated by some central education authority or bureaucracy. In Goodson's (1994) terms it is curriculum by 'prescription'. The curriculum project may be conducted publicly, or privately via a contract. The central authority usually maintains control directly or indirectly via either an inspection system of some kind, and/or an accountability system linked to student evaluation.

2. School-based

In this case teachers and community (and hopefully students as well) help to shape the curriculum - usually within national guidelines. As Print (1993) says, "...school based curriculum development is the reverse of the bureaucratic, hierarchical, centralist approach to curriculum development." School based curriculum development recognises the reality and value of what Elliot (1994) refers to as a negotiated curriculum. It is an approach supported by Beyer and Apple (1988, p.6): "...meaningful curriculum reform must occur within those institutions, and by those people, most intimately connected to the lives of students."

School-based curriculum development, within broad national guidelines, became the preferred form of curriculum development in Finland in 1994. Teachers are acknowledged as professionals who have an important contribution to make. "Teachers are seen as carrying an essential part of the responsibility for the curriculum making process - one which had previously rested upon the central authorities" (Hansen, 1998, p.166).

Curriculum design models

At least four design models (Print, 1993) have been tried.

1. Subject-centred

These designs revolve around the teaching of an established body of content derived from the academic disciplines. The design may include the processes used in the disciplines, and it may include a 'broad fields' approach to try and overcome the fragmentation and compartmentalization inherent in a subject approach.

2. Learner-centred

The emphasis here is on a curriculum based on the needs, interests and purposes of the students. The curriculum evolves from teacher-student interaction in relation to learning tasks. Purposes may be modified in the light of these interactions. The approach may take an activity/experience focus, or a humanistic focus (intrinsically rewarding), or both.

3. Problem-centred

A focus on individual and social problems forms the basis for learning within this model. Group activity, welfare and resolution of problems are emphasised. It may take a thematic approach (which reflects life as we experience it) or focus on a real life problem so that learners are highly involved in learning.

4. Core curriculum

This approach is based on the view that there is a set of common essential learnings that should be provided to all learners in order for them to function effectively in society. Sometimes the essential learnings are called foundational.

Curriculum development process models

Three major models, with variations, have been developed over the years (Brady and Kennedy, 1999; Marsh, 1992; Print, 1993).

1. Rational

This model was developed by people such as Ralph Tyler and Hilda Taba. It is sometimes known as an 'objectives', classical or means-end model. It emphasises a logical fixed sequence of elements beginning with objectives, then content, method and evaluation. A weakness is that valuable learnings can occur that are beyond the prespecified objectives and, as Elliot (1994, p.58) noted, the objectives model, "...fails to take into account the complexities of human action and interaction in society."

A development of the rational model came to be known as the **cyclic** model. Cyclic models were developed by people such as D.K.Wheeler, and Audrey and Howard Nicholls. In these, the evaluation loops back to influence the selection of aims/goals/objectives. However, it follows the same sequence as the rational model.

2. Interactionist

These are dynamic models that have been developed by people such as Decker Walker and Malcolm Skilbeck. These models do not view curriculum development as a linear, sequential process but as a process of interaction between the various sources and components of the curriculum. A means-end analysis is not required as part of these models. They are sometimes referred to as 'naturalistic' or 'deliberative' models. A clever metaphor that captures the essence of this approach to curriculum development has been provided by Holt (1996). Holt suggests that curriculum development should mimic the process used to create the film *Casablanca.* This film was

scripted as it went along, the script was frequently changed, the ending had not been determined before shooting began, the shooting of scenes occurred in no particular order, and yet the film was completed on time and within budget and, in film terms, is one of the most artistic and successful ever created.

Curriculum diffusion models

Several models to disseminate curricula are evident. Some of these relate to the source of diffusion.

1. Sources of diffusion

(a) ***Centre-periphery***

This is the preferred model when a curriculum has been 'fully' developed by some central authority. The process is managed from the centre, usually through the provision of (i) curriculum materials to schools and (ii) various training programmes.

(b) ***Proliferation of centres***

This is a variation on the centre-periphery model in which the centre trains a cadre of people (e.g. advisers, facilitators) to disseminate the innovation through regional centres. The centre still manages and monitors the diffusion, but it provides support for the regional centres. In New Zealand this process now tends to occur through private contract, but the terms of reference for the contractors are still specified from the centre.

(c) ***Shifting centres***

This model has no clearly established centre. There is not a central curriculum involved, but rather a series of developments related to learning. Hence a centre will appear, reach a peak, and disappear to be replaced by new centres. This is usually associated with the professional curriculum development activity of groups of innovative teachers.

Other models relate to the process of development and diffusion.

2. Social interaction

In this approach, if the receiver shows interest in the new curriculum then s/he is helped to implement (or maybe reject) it. Interaction with other teachers is supposed to assist in this process.

3. Research, development and diffusion

Here the innovator determines a need on the part of the receiver (e.g. primary schools generally, a group of schools at risk, teachers of social studies), and proceeds to devise and disseminate a curriculum programme to meet that need.

4. Problem-solving

This is the opposite of the research, development and diffusion model. Here a teacher or group of teachers identify an area of concern and try to develop an innovation to solve the problem. Action-research is normally an important feature of this approach. Indeed Grundy (1987, p.141) considers action-research to be, "...a process fostering emancipatory curriculum practice." The central role of teachers as action-researchers is emphasised by Stenhouse who contends that, "...there can be no curriculum development without the professional development of teachers as researchers of their own practices in schools and classrooms" (cited by Elliot, 1994, p.43).

Curriculum change strategies

Several methods have been used to try to have new curricula adopted (Lovat and Smith, 1991; Marsh, 1992; Print, 1993).

1. Power/coercive

This is a top-down strategy in which those who are expected to implement the change have usually had little involvement in decisions about the curriculum. Those in power use legal sanctions and penalties to try to enforce acceptance of the new curriculum. Within this approach teachers are normally regarded as school technicians or, as McCulloch (1992) has suggested, passive agents or puppets. In the process, of course, teachers' work is undervalued, deskilled and, most alarming of all from the point of view of providing rich interactive learning experiences for children, seen as substitutable by technology (Carlson, 1988). In short, this approach largely disenfranchises teachers (Goodson, 1994).

2. Rational/empiric

This approach appeals to teachers' sense of reasoning, logical argument, and respect for evidence to implement a new curriculum. But such curricula, usually developed by 'experts' beyond the classroom, do not necessarily take into account teachers' beliefs and classroom realities, or recognise that teachers may interpret the curriculum differently from the curriculum writers. This strategy may employ change agents (e.g. curriculum advisers or facilitators) to help teachers implement the change.

3. Normative/re-educative

This strategy recognises that teachers' beliefs, interests, perceptions and feelings are central to the change process. The teachers are considered the locus of the change. A collaborative approach is used so that teachers can be helped to deal with conflicts of belief, and to generate alternative meanings and practices.

Some Comments on the Analytical tools

We noted earlier that the categories or conceptions described above have been simplified for the purposes of this paper. In practice there is often overlap between categories. An example we cited was one in which teachers may be involved, through various means, in a curriculum development project initiated at the centre. Another example is where a curriculum is imposed on teachers in a power/coercive sense, but where teacher educators (and perhaps advisers) may be working with preservice teachers and teachers in a normative/re-educative kind of way because they recognise that teachers themselves are the key to change.

It can also be the case that there is a conflict between the intentions of a curriculum and the way it is taught. For instance, in the state of Nevada in the U.S.A. Speer (1998)

has estimated that at least one-third of the teachers are locked into a traditional way of teaching, whereas the new mathematics curriculum requires a constructivist approach to fulfil its intentions. Even within a curriculum document there can be conflicting views. For example, *Mathematics in the New Zealand Curriculum* (Ministry of Education, 1992) appears very behaviourist with its hierarchical levels and lists of achievement objectives, but at a deeper level it is relatively constructivist in nature. Such conflicting views can be confusing, but they tend to be inevitable when curriculum developers have to work within various political constraints.

The link between curriculum, post-modernism and democracy

We would like to suggest that the conservative elements of curriculum and curriculum development we have described above are associated with a modernist and non-democratic view, whereas the more progressive elements are associated with a post-modern and democratic perspective (Doll, 1993). Let us explain.

Modernism is a perspective characterised by a scientific management ethos derived from early twentieth century physics and business principles. It involves a cult of managerial competence and technical expertise (Beyer, 1988) which appear as central control and standardisation. Associated with this perspective is a 'spectator' theory of knowledge (Doll, 1993), a behaviourist view of learning, a 'representative' rather than participatory view of democracy (Beyer, 1988), and a 'commodity' perception of education in which students are seen as the 'customers' who 'purchase' it (Winner, 1997).

In curriculum terms, modernism results in the kind of curriculum that England has imposed on its schools in recent years. It is a neo-conservative conception masked in the rhetoric of reform, the 'outcome' of which is increased centralization of power, greater standardisation of the curriculum

"The experiences which teachers and children have within such a curriculum regime are the very antithesis of those required for participatory democracy..."

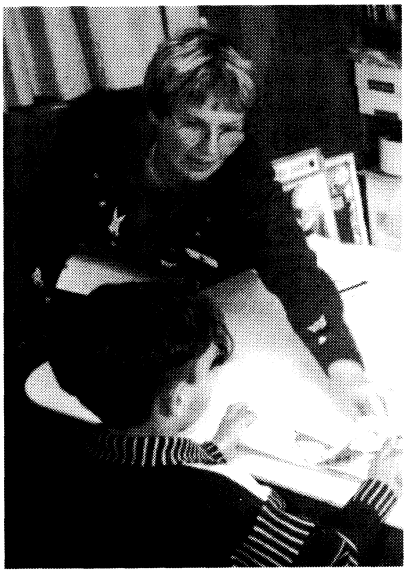
(often through prepackaged sets of curriculum materials), less teacher autonomy, and a more technocratic orientation to schooling (Marshall and Sears, 1990). Under the guise of slogans such as 'excellence', schools come to resemble miniature factories dominated by concerns for input and output, efficiency, and cost savings (Beyer and Apple, 1988). Beyer (1988, p.232) describes the negative effects of this type of curriculum on teachers: "As the curriculum becomes increasingly standardized and centralised, the demands on teachers become more heavily weighted toward bureaucratic and administrative trivia, and teaching imbued generally with an ethos of technocratic rationality."

The experiences which teachers and children have within such a curriculum regime are the very antithesis of those required for participatory democracy. They breed alienation (Carlson, 1988; Lovat and Smith, 1991) among many teachers, children and their parents because they cannot readily

identify with a curriculum they had no hand in shaping. We would argue that the experiences are also the very opposite of those required for economic development in New Zealand, for two related reasons. Firstly, a centrally imposed curriculum promotes further disadvantage among disadvantaged groups since they are the least likely to find the curriculum of interest or relevance (Lovat and Smith, 1991), thus ensuring that a lot of potential talent is wasted. Secondly, such a curriculum suppresses the intellectual development of the majority of children (Elliot, 1994), thus depriving the nation of the creative and innovative thinking needed to design high quality products that can compete in the world market (Ansley, 1999; Buwalda, 1996; Tucker, 1995). As Doll (1993, p.63) explains, a top-down scientific management curriculum model excludes interaction and thus, "...has had a devastating effect on curriculum, for... it is interaction which forms the heart of growth."

The alternative to a modernist and representative democratic approach to curriculum is one which incorporates a postmodernist and participatory democratic perspective. Postmodernism, according to Doll (1990), is a movement that accepts the universe as complex, self-generating, and evolving. It is always in the process of becoming. Humanistic, constructivist, and especially enactivist learning theories (see Biddulph and Carr, 1999) are consistent with this perspective. So is the dynamic view of knowledge described earlier which considers that product and process cannot be separated (Lovat and Smith, 1991).

Our interest in participatory democracy as a foundation for curriculum development stems from the view that this form of democracy, being concerned for justice and equity, is self-sustaining (Wood, 1988) - as opposed to authoritarian, centralised, representative 'democracy' which eventually breeds alienation and thus contains the seeds of its own



"If as teachers we wish to help promote a just and fair society for our children then obviously we need to consider seriously what and how we teach."

destruction. Participatory democracy requires that all participants must be active decision-makers, they must have the requisite knowledge, and there must be equal power relations to allow them to make decisions (Wood, 1988). To achieve this form of democracy, people must experience it, must live it, from the time they are in school. It must permeate the curriculum for, as Postman and Weingartner (1971, p.28) remind us, "The medium is the message, of course."

A curriculum which incorporates participatory democracy is a postmodern, transformative, negotiated or **co-emergent** curriculum (Davis, Sumara and Kieren, 1996). It is a curriculum that supports genuine co-operative communities of learners, one the community, teachers and children have a hand in shaping, one that provides real choices, and one that accentuates the reality of diversity, alternative explanations for events and a multiplicity of views (Beyer, 1988). Sears and Marshall (1990, p.18) contend that, "When students share the burden of the classroom dialectic, classrooms become incubators in which ideas are germinated, shared, nurtured, argued, acted upon and often transformed by teacher and students alike." In other words, such a curriculum can develop students' higher order, critical thinking and creative talents. Of course, a curriculum of this nature cannot be determined totally in advance; it is always open to modification (Carlson, 1988). This is because it is catering for the ability to organise, generate and create that characterise human beings. As Doll (1993, p.87) says, "A transformative curriculum... is one that allows for, encourages and develops this natural capacity for complex organisation; and through the process of transformation the curriculum continually regenerates itself and those involved with it." A similar view is expressed by Elliot (1994) who notes that the 'negotiated' curriculum is continuously constructed and reconstructed through discourse among an interlocking network of people. This is a far cry from the lockstep, staircase image of curriculum typical of a technocratic approach. A more appropriate metaphor is that of a web, or a matrix. The essence of this is captured clearly by Doll (1993, p.162): "A curriculum modelled on a matrix is nonlinear and nonsequential but bounded and filled with intersecting foci and related webs of meaning."

A key concept in a complexity theory-based, transformative curriculum is 'recursion' or 'iteration' (Doll, 1993). This means that students and teachers constantly reflect upon achievements, which in turn gives further shape to the curriculum. In terms of the classroom, a transformative or co-emergent curriculum requires that the classroom social climate is such that it takes students' ideas seriously, and fosters exploration and self-control. Evaluation of learning becomes essentially a negotiated

process. Perhaps the teaching approach that most embodies this kind of curriculum is the Interactive Teaching Approach (Biddulph, 1990; Biddulph and Osborne, 1984).

Some concluding thoughts

If as teachers we wish to help promote a just and fair society for our children then obviously we need to consider seriously what and how we teach. Perhaps, though, even before we do this we need to analyse the ethos, structures and processes of the institutions in which we work. Are they top-down, authoritarian and accountability-driven places, or do they affirm and encourage our professional expertise as curriculum developers and educators through collegial and democratic means? The particular ethos pervading our professional workplace is likely to influence both our view of curriculum development and our effectiveness as school-based curriculum developers.

In a wider sense, we agree with Winner (1997) that the slippery language of educational reform needs close scrutiny to determine whether the reform is genuine (that is, of a kind that has long term benefits for our society), or whether it is really destruction masquerading as reform. We are hopeful that the conceptual tools we have provided in this paper may enable teachers to engage in this scrutiny, and in particular to probe beneath the surface of curriculum changes in New Zealand rather than taking them at face value.

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