Rethinking Curriculum: An Ethical Perspective

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It is argued, using Levinasian ethical philosophy, that dominant approaches in curriculum design and implementation are more than just an ineffectual system forced on teachers, they are also injurious to those who work in schools because they manipulate and erode a primary ethical relation between people. Although these approaches are used in several subject areas besides mathematics, mathematics is the key subject area for a more general critique of these approaches because it is the "paradigm case" subject area.

This paper follows from a recently completed research study into the application of ethical philosophy to mathematics education (Neyland, 2001), and applies the work of the ethical philosopher Emmanuel Levinas to the mathematics curriculum. Levinas is regarded by some commentators as the pre-eminent ethical philosopher of the 20th century (see, for instance, Nemo's introduction to Levinas, 1985). Levinas comprehensively analysed the ethical dimension of human interaction and published his findings in, among other places, *Totality and Infinity* (1969), *Time and the Other* (1987), and *Otherwise than Being* (1998). His ideas have been developed and applied by scholars of note such as Paul Ricoeur in *Oneself as Another* (1992), Richard Sennett in *The Corrosion of Character: the personal consequences of work in the new capitalism* (1998), and Zygmunt Bauman in his essay *Social Manipulation of Morality: moralizing actors, adiophorizing action* (1989a).

Dominant Approaches

In 1989 a newly published mathematics curriculum for England and Wales reformed the teaching of mathematics for these countries (Department of Education and Science, 1989). This curriculum statement divided school mathematics into 296 statements of attainment, organised into 14 parallel hierarchies, most having ten levels. Similar large-scale education reform of the whole school curriculum has recently occurred in a number of other industrialised countries (Levin, 1997; Smyth, 1995; Smyth & Dow, 1998). The reform programme in each of these countries has been similar because each has drawn on the same well of ideas (Levin, 1997). New Zealand, England and Wales have arguably been the recipients of the most thoroughgoing reform. The American researchers, Fiske and Ladd (2000, p. 3), for instance, write: "In 1989 New Zealand embarked on what is arguably the most thorough and dramatic transformation of a state system of compulsory education ever undertaken by an industrialized country". Thrupp, Harold, Mansell, and Hawksworth (2000), a New Zealand research team, however, believe that England and Wales received a more severe restructuring than New Zealand.

The driving thrust behind these education reforms is the determination by state and national governments to manage education scientifically with the aid of legislation. This began in 1969 with the United States Federal Government's National Assessment of Educational Progress (NAEP) project. Wise (1979) outlines how NAEP spawned a raft of state legislation based on the principles and concepts of Scientific Management Theory (SMT). The following examples are illustrative of how SMT influenced legislation in a number of states during this time. The 1969 California Education Improvement Act mandated that project grants were to focus upon basic skills and be evaluated in terms of

student improvement and cost effectiveness. In 1971 the same state appointed an Educational Management and Evaluation Commission. Nine public members were to be appointed, three to represent the field of economics, three to represent the management sciences, and three to represent the learning sciences. In 1971 Colorado passed the Educational Accountability Act. This act introduced the term "accountability" into policy discourse in education, as a generic term, and referred to the legislative tools of scientific management in education. In 1973 Oklahoma passed an act which imposed systems analysis, originally developed to manage defence expenditures, upon school districts. It also introduced the term "needs assessment". In 1976 Florida's Educational Accountability Act mandated the specification of a system which guarantees that each student will attain a specified standard. It also specified the contingencies should a student fail to attain the minimum performance standards. In the teaching of mathematics, such policy developments resulted in outcomes approaches to mathematics teaching—the ones that behaviourally oriented curriculum theorists had earlier been experimenting with— becoming mandatory. These developments in mathematics also gave rise to attempts to resist the reform programme in mathematics. The National Council of Teachers of Mathematics' *An Agenda for Action* (1980) is a striking example.

Scientific management approaches in education were later adopted elsewhere. In the United Kingdom, for example, Skilbeck (1976) observed that a new educational model, the "technocratic-bureaucratic ideology", was gaining in influence in education. In New Zealand, in the New Zealand Treasury's (1987) briefing paper on education, education is discussed in terms of a "production function" with "inputs" and "outputs", and the various curriculum statements that resulted from the subsequent education reforms were expected to fit with this conception. The first subject to be reformed was mathematics, in *Mathematics in the New Zealand Curriculum* (Ministry of Education, 1992).

There are four requirements that go hand-in-hand with the decision to legislate within education according to the principles of SMT. The legislator requires: (i) a statement of unambiguous *outcomes* (to clearly specify what teachers are required to produce), (ii) a theory of *compliance* (this gives the legislator confidence that teachers will act as directed), (iii) a system of *auditing* (for ongoing monitoring), and (iv) the provision for *instrumentally-oriented research* (to supply precise data to aid rationalistic decision making). The outcomes-based curriculum is intended to provide the first. Contemporary variants of contract theory provide the second (Boston, 1991). In New Zealand, the Education Review Office is the statutory auditing agency. Dependable information necessary for the application of SMT to education is understood to be supplied by educational consultants, researchers under contract to the ministry, and officials who monitor national assessment data.

Mathematics as the Paradigm Case

It has been noted that, in New Zealand, mathematics was the first subject to be restructured. It was written even before the umbrella document, *The New Zealand Curriculum Framework* was published (Ministry of Education, 1993). It is probable that one of the main reasons for this is the fact that mathematics is the subject most easily revised as a hierarchy of outcomes, and therefore, in the minds of some, the logical subject with which to begin. The fact that mathematics is the curriculum subject most amenable to this form of presentation, however, is not to be taken to imply that mathematics should be used as an exemplar for how other subjects can be restructured as a hierarchy of outcomes. The opposite is the case. Mathematics is in fact what I call the "paradigm case" subject

because, while it is accepted that mathematics is the subject most suited for presentation hierarchically, this cannot be done without unacceptable distortion of its disciplinary character. Thus, mathematics is the pre-eminent subject that can be used to argue a general case against the scientific management of the curriculum. Accordingly, mathematics education research refuting the outcomes-based curriculum in mathematics is of crucial importance for all subjects in the curriculum, and mathematics education researchers have this unique role to play on behalf of other subjects.

Macro-Level Critique

Features of these educational reforms may be usefully categorised as being either macro-level or micro-level. The former term refers to both the processes used in setting up the "reformed" education system, and the consequences for curriculum design, pedagogical style, and student achievement. The task of analysing the macro consequences has been made relatively straightforward because the reforms have a common source. The latter term refers to the post-reform consequences, for those who work in education, at the level of human experiences and social interactions. Identifying these micro consequences is fraught with difficulties for two reasons. First, because restructuring policy vastly underestimates the complexity of schooling (Thrupp et al., 2000), and because mainstream education research misconstrues the nature of teaching—since it is dominated by cognitive and behavioural conceptions (Nias 1998; Gewirtz, 1997)—research into its impact is susceptible to a tendency to mimic this weakness. Second, the reform process results in the reformees experiencing difficulty accounting for, and articulating, its consequences for them personally. Menter, Muschamp, Nicholls, and Ozga (1997), for instance, argue that the reform process manufactures consent to the reforms, and that this leads to an under-representation of such things as experiences of alienation and deprofessionalisation.

At the macro-level the reform process has been criticised for (i) the hostile nature of the discourse that accompanied it (Ball, 1990; Ellerton & Clements, 1994), (ii) the anti-democratic processes that characterised its introduction (Lauder, 1991), and (iii) the assumptions that underlie the epistemological, ontological and social theories used to justify these approaches (Boston, Haig, and Lauder, 1988). The reforms have been criticised for (i) the over-extensive use of hierarchies to organise and teach mathematics (Ernest, 1991; Freudenthal, 1978, 1979), (ii) the ineffectiveness of outcomes approaches for teaching mathematics (Kuchemann, 1990; Kulik, Kulik, & Bangert-Drowns, 1990; Erlwanger, 1973), and (iii) the idea that standards of achievement can be precisely defined (Neyland, 1998).

Micro-Level Consequences and the Hidden Injuries

An investigation of the micro-level consequences of the reforms involves a recognition that teaching is, in part, a *felt*, and not just a *technique-oriented*, occupation. Nias (1998) is one who emphasises this dimension of teaching. She observes that teaching has an emotional component that includes "the inherently moral nature of teaching and the *sense of responsibility* that springs from this; [and] allegiance to the *ethics of care and service*" (p. 424, emphasis added).

Recently, some empirical researchers have made a first attempt at identifying the micro-level consequences of scientific management in education. Ball (1997), Gewirtz (1997), Helsby (1999), Menter et al., (1997), Reay (1998), Thrupp et al., (2000), Woods, Jeffrey, Troman, and Boyle (1997), and Wylie (1999), have turned up evidence that

suggests that in the post-reform period, social bonds are being weakened and people are being damaged. These empirical studies report that in the aftermath of recent educational restructuring, the following have occurred: (i) "the nature of the tasks that are absorbing increased quantities of teacher time and emotional labour and the climate of surveillance within which those tasks have to be carried out" has changed for the worst (Gewirtz, 1997, p. 224); (ii) professionalism has been replaced by accountability; and, collegiality by competition and surveillance (Ball, 1997); (iii) initiative, creativity and teacher-led innovation have been constrained (Woods et al., 1997); (iv) teaching has become technicised, and learning experiences impoverished (Woods et al., 1997); (v) the workforce has become overworked, stressed, anxious, shell-shocked, distrustful, cynical, demotivated and alienated (Thrupp et al., 2000); and (vi) teachers pragmatically respond to the "excessive demands of reform" by neglecting what they believe to be the more important components of their work, and doing "what is required of them by the managerial imperatives of the central agencies or the market imperative of local competition" (Thrupp et al., 2000, p. 208).

Helsby (1999) reports that there is now a tension between the ethical professionalism of the pre-reform period, and the technocratic managerialism of the reformed period. In her view this is a result of a "transformation of teachers' work and a mutation of their role from semi-autonomous professionals to managed expendable employees" (p. 172). In Reay's (1998) view it is a result of the "discursive working of the new managerialism [that] constructs all teachers as managers" (p. 188). Woods et al. (1997) found an overall erosion of teacher professionalism caused by the managerialist imperative. They also note that while many do resist the downgrading of their role as professionals and its replacement by that of the technician, this resistance leads to teacher burnout, especially among creative teachers.

Gewirtz (1997) reports that the reforms have changed vertical relationships between management and staff, horizontal relations among staff, and relationships between teachers and students. In general there is "pressure for intimate and complicated relationships to give way to the "social relations of the production line"" (p. 226). Reay (1998) saw evidence of the senior management team being isolated from the rest of the staff who see it as "insular" and "exclusive" and "autocratic". She writes:

> Relationships between junior and senior staff are pared down and perfunctory within the new managerialism. Communication between staff is increasingly dominated by top-down, vertical interactions in which junior staff are informed about decisions rather than being part of them and cursory consultation rather than negotiation is increasingly the order of the day. (p. 192)

It is further reported that teachers are experiencing less collegiality with their colleagues at the same school (Wylie, 1999), a decline in the sociability of school life, meeting times being taken up working to agendas set by senior managers, less opportunity for collaboration with colleagues, and less informal socialising amongst staff (Gewirtz, 1997). Teachers also claim that they have less time to give attention to individual students, and are not getting a better picture of individual students' learning needs despite doing more assessment (Wylie, 1999).

Gewirtz (1997) observed that teachers often talk of such things as the "manic grind" and "frenetic pace" of work, and of being "squeezed dry".

[Most] teachers resent having to spend so much of their time recording and monitoring students' work in the formal way now required of them. Such work is viewed as a distraction from what they see as the real work of teaching. [They] resent having to expend energy working to objectives, targets and requirements set elsewhere, particularly where those objectives conflict with their own. (pp. 224-225)

Further, they "are having to expend enormous quantities of energy [protecting] their students and what they consider their real work from work which is imposed on them" (Gewirtz, 1997, p. 225). Ball (1997) writes that he saw evidence of one teacher experiencing a sense of personal meaninglessness in the context of teaching as a result of scientific management approaches creating an "existential separation" (p. 327) from the moral resources necessary for a satisfying existence. "[Teachers are] exhausted by additional work and, in some cases, *alienated from their selves and their colleagues*" (p. 334, emphasis added).

It is evident, then, that some people in schools are experiencing significant negative consequences of the reforms. There is even Ball's tentative suggestion that people may be being damaged as selves. As we will see, by drawing on the ethical philosophy of Levinas, there is cause to conclude that there is good reason to believe that Ball's tentative suggestion may have real substance.

Towards an Ethical Alternative

Scientific management approaches provide a means of control over the process of education, and, for this reason, they typically maintain an appeal to us. They allow us to act decisively in situations that otherwise may appear beyond the range of our intervention strategies. For example, in order to try to improve the teaching of mathematics we specify norms and professional standards with the aim of bringing about improvements (e.g.: *Professional Standards for School Mathematics*, 1991). However, when we make this step, we tacitly accept that it is desirable for the actions of teachers to be *mediated* by such protocols. Unfortunately, there are grave risks associated with this because, as is evident in the empirical research just reported, the mediation of action inevitably involves the suppression of direct or *unmediated* action by teachers in response to the immediacy of the needs of students. A major problem with the scientific management of education, then, is the fact that it is designed to both (i) shape teacher actions according to a blueprint, and (ii) curtail direct action.

In order to construct an alternative conception of the primary motivation for teacher action it is useful to identify a fundamental assumption upon which scientific management approaches are based. These approaches are based on the assumption that moral and socially sanctioned human action is *caused* through the taming of pre-social and animal-like instinct by social institutions, rules, norms, and educative processes; including the professional and curricular standards used in mathematics teaching. Bauman (1989b), following Levinas, argues that this assumption is a "myth" that ought to be replaced. This myth, he shows, is deeply embedded in the modern sensibility and sustained by a broad coalition of "respectable" opinion which includes the view that the modern state has a "gardening" function; that is, that "the society it rules [ought to be viewed] as an object of designing, cultivating and weed-poisoning" (pp. 12-13). Failures within the education system are, according to the gardening notion of the state, and the central myth upon which it is based, the result of a breakdown in the specification of rules, standards and protocols. Scientific management approaches are used to deal with such failures.

Levinas proposed an alternative to the fundamental assumption above about the causes of human action. For him, social institutions and norms do not *cause* ethical behaviour, they *manipulate* and sometimes *erode* a primordial ethical relation between people. What is this fundamental ethical relation? It is a relation of responsibility for the other person. A trace of this relation is evident, to use one of his favourite examples, when I communicate directly with another person. When I speak to another person I am first *acknowledging* him or her as another person. Thus, as he puts it, before every "said" there is first of all a "saying". When I acknowledge another person, when I focus on his or her "face", I do more than just gaze, I actually *encounter* him or her. This encounter, Levinas argues, is, at its deepest level, an awareness of the other as one who in some way needs me. This, according to Levinas, is the source of the social bond. He emphasises that there is no compulsion involved. I am not obliged to respond to the other. I can choose to break the encounter. But if I do, I weaken the social bond. Further, because my selfhood—my self-concept and self-identity—depends on my responding to the need I recognise in another, when I break the social bond, I impair my selfhood.

So, from Levinas' ethical perspective, teacher action ought to be, at source, an overflow of this primary ethical relation. It ought to be, in the first instance, a direct response to the need I see in another. Priority, then, should be given to this relation of responsibility as a determiner of action. Priority should not be given to society's gardening function. In education, therefore, priority should not be given to the mediation of action. When the priority of the ethical relation over a prescriptive and moralising function is abandoned, as it is with the scientific management of education, the ethical force of the direct interpersonal relation is, at best, neutralised, and at worst, eroded. It is not unreasonable to infer, based on the empirical research just outlined, that we are in the midst of the latter scenario.

Social institutions and professional protocols do have a function. We cannot do without such social agreements. Levinas emphasises that it is not a question of one or the other—direct action or mediated action—it is a question of which ought to be accorded priority. For Levinas, protocols should *complement*, but not *precede,* the force of the direct ethical relation. The crucial question is, does a given protocol enhance the primary relation of responsibility, and support the direct action that flows from it? If this can be answered in the affirmative, then the ethical and the societal reside in an appropriate complementary relation. If not, we risk human injury.

The Erosion of Proximity

What causes the erosion of the primordial ethical relation and hence injury? The interpersonal relation of responsibility is maintained by what Levinas calls ethical *proximity*. He outlines what he means by this in the third chapter of *Otherwise than Being* (Levinas, 1998). Proximity is not a spatial, cognitive or emotional closeness. It exists insofar as I feel, or am, responsible for the other person. Ethical proximity can be undermined, and, as will be indicated shortly, the mechanisms that are central to SMT do this. As has been noted, scientific management approaches are built upon a belief that education is a raw material for social engineering; an object to be shaped and administered. The scientific management of education is geared towards rationalised processes of change, the meeting of targets, standardisation, the specification of outcomes, and the disciplined observance of protocols.

How is proximity eroded by the scientific management of mathematics education? Kelman (1973) argues that ethical relations are weakened when three conditions are met:

(i) particular procedures are *authorised*, (ii) actions are *routinised*, and (iii) people are *dehumanised*. These conditions have increasingly been met in contemporary scientifically managed mathematics education. There is, for instance, increasing standardisation and measurement of both the work of mathematics teachers and the achievements of their students. In addition, students and teachers are increasingly dissembled into aggregates of isolated traits in such a way that it is difficult to re-assemble the face of the human individual. Students, for instance, are categorised as either possessing, or not possessing, certain capacities and attributes, and identified on complex hierarchies of levels of mathematical outcomes. Teachers are viewed, according to SMT, as contractual agents performing a carefully specified and monitored service within education, conceived as a production function.

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