

## **The problem of the real in curriculum implementation**

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This paper takes seriously the claim that postmodernism has undermined our 'modern' understandings of mathematics educational research. It therefore seeks to reinterpret this understanding with particular reference to curriculum implementation in a manner that confronts the challenge that postmodernism has posed. In order to do this the paper clarifies how postmodernism discredits the assumptions on which curriculum implementation has been erected. It argues for a reconstruction of the relationship between curriculum inquiry and the truths of curriculum reform.

### **Locating the real in curriculum implementation research**

In these days of cultural and epistemological crisis much is made of allusions to the end of a 'modern' era, epitomised in the grand stories that developed and provided the legitimation for modern society and scientific knowledge. From the time when the seductive theoretical positions of the postmodern took hold in the 1980s and began to question those very ideas and claims to truth of the 'modern' era, the scientific certainty of previous years came to be replaced with a skepticism of belief in universal truth or in the possibility of a totalising narrative. It is with some nostalgia then that one looks back to that time before those games rules for science changed when the research talk was of notions of truth, progress and objectivity.

In this paper I want to look at mathematics educational inquiry as implicated in these cultural currents constitutive of the postmodern condition. Central to all theory of the postmodern lies the troubling preoccupation of the 'real'. I want to look at the place of the 'real' in curriculum implementation as it is for a small group of secondary school teachers. I want to argue that curriculum implementation research has traditionally been positioned within modernist ideas, subsumed within the grand metanarrative of science. Such inquiry unfolds around the script of the new curriculum document in which the lead roles are assumed by those in schools relegated the responsibility of 'getting the document up and running' and the supporting roles are taken by authorial intent, planned outcomes and so forth.

In this story of curriculum implementation there has never been any difficulty with the 'real'. Since its very inception curriculum implementation has been a commonly understood notion, and those debates that have surfaced have been more about efforts to achieve efficiency and effectiveness than about critique of the foundations, the function and the status of curriculum inquiry itself. Committed to the discovery of ultimate causes and to the identification of unitary themes it presupposes and is dependent upon the belief that it is possible to control the meaning of the text. Implicit is the idea that the text reflects an unmistakably transparent stand that will descend down into the schools. The real is self-evident.

In such work the text and its implementation are perceived as discrete entities in which the former is privileged. The curriculum policy text is generally interpreted as an expression of political purpose, a statement of the course of action that policy makers and administrators intend practitioners to follow and the meaning of implementation is restricted to narrowly-defined strategic interests in how to put a given curriculum plan into practice. Curriculum is said to be implemented when the authorial intent presumed to lie behind the policy text becomes embedded in schooling; more specifically when the syllabuses meet the required specifications,

the textbooks and other teaching materials have been made available and the planned outcomes are achieved.

There are problems with this theorising and the explanations that have been given for curriculum implementation cannot be considered to be 'whiter than white'. While generally professing to be on the 'side of rationality and progress' curriculum research analyses still fabricate a reality. In accordance with the codes and conventions of positivist research that has domesticated such inquiry it posits itself within the boundaries of prediction and control, and in so doing commits modernity's mistake in ignoring the particular relations of power and oppression inscribed within the practices it considers to be universal.

Where curriculum research is guided by technicist concerns it remains indebted to and enmeshed in the work of the human sciences. Put differently, truths arrived at through orderly method, scientific inquiry and prescriptive theorising predispose and deeply constrain the way one understands curriculum implementation. By ignoring the social location of agents and the social construction of knowledge curriculum implementation has, common to many fields of social inquiry, failed to recognise the embeddedness of its own assumptions within specific historical context, immune to the influences of politics or values.

Such an over-reliance on the restrictive and self-confirming methodology of scientific analyses seems to have little persuasive purchase in the postmodern era. I am not taking issue here with research that responded to curriculum questions in the modern era. These researchers deployed the theoretical tools which were available to them at that time and they responded as best they could given those bounds. What I am suggesting is that given the postmodern challenge to the Cartesian hold on what is considered real and legitimate ways of knowing and being, curriculum inquiry needs to look closely at the 'real' of inquiry as the relation between knowledge production and systems of power.

What I want to stress is that curriculum implementation research has been premised upon the construction of objects of study, the 'text' and the implementing teacher and those very objects are not real nor timeless, but produced for particular purposes within specific historical, social and political conditions. How do we as mathematics educational researchers rethink curriculum implementation in a world where the realities of the text and of the implementing teacher are no longer self-evident? Because the 'real' is linked with power systems it cannot be emancipated from the forms of hegemony, social, economic and cultural, within which it operates at any given time. The argument is not about whether curriculum change happens within classrooms but how that change is understood and the effectivity of its discursive constitution.

It seems then that implementation inquiry's claims to truths must be looked at, both in terms of their specificity, their emergence, the ways in which they are shaped by, and are themselves shaping, reality. In turning away from traditional commentaries on the curriculum text and curriculum practices that define it, I want to foreground the relation between the text and the reader and probe the complexity of actions and individual consciousness within socially and historically defined circumstances. In so doing teachers' reciprocal and often changing connections to the social and cultural forces in which they negotiate curriculum meaning might be appreciated.

I am arguing that the very concept of curriculum implementation is not universal but extremely specific and in its specificity occludes marginalised stories. What I am at pains to avoid then is a totalising configuration of what curriculum implementation means. I propose to rethink such inquiry not by drawing on the theoretical tools of deconstruction, though taking apart the fictions of curriculum inquiry has an important place in this work. Rather the proposal points to the emergence of a new (dis)order, no longer framed within or legitimated by the systematic set of relations organised by the metanarratives of modernity.

I want to capture some of those other stories - the stories of teachers who are simultaneously defined and resisting definition, endlessly asked to be autonomous while endlessly asked to conform in curriculum work. I offer a bricolage of perspectives, that seems to jostle for position, from teachers who produce their unique creations as they attempt to capture and tame the issue of implementation itself. In this approach I draw attention to the variety of readings, the partiality of any one view and its implications in historical social relations. In encouraging a multiplicity of readings, I seek to demonstrate that the 'real' of the text can never be exhausted, and how a text is able to participate in multiple meanings without being reduced to them.

In placing a high value on teachers' knowledge as constructed and provisional, I attempt to unravel the ways in which expectations, fears, conflicts and questions shape 'readings'. As they locate themselves relative to their roles as agents of curriculum change in four institutional sites, issues of power, authority, and truth surface. Through their curriculum work I want to demonstrate the contingency of curriculum truth; that the 'real' can be defined only for specific concrete and local practices. In its representation to you, the reader, the meaning of the 'real' which I need to communicate slides away. And we, both you and I, are left not with the reality, but with an approximation which, however much I try to make more 'real', is always already deferred and irrecoverable.

### Reading the curriculum document

How can one determine the 'real' of the text? How can one decide what the text 'really' means? Texts are systems or economies of truth. None of us has access to an out-side text, to what is 'really real'. The real, in postmodern theorising, is subject to multiple interpretations, multiple readings and multiple uses. In reading, interpreting and assigning meanings one can but appeal to the schemes and texts that one has available through history, culture, language, politics, economics, ethnicity, gender and so forth. 'Reading' becomes overdetermined by contingencies of language, rhetoric, power and history. These forces are seen to work through texts in ways neither their authors nor their interpreters can fully control.

A reading is always relational. The reader makes sense of what is conveyed by attending to social convention and circumstance as well as to words and utterances. What appears 'real' to the reader in the text is always analysable as a restrictive and expressive set of social codes and conventions. Postmodern theorising locate interpreters in many sorts of reciprocal contexts, negotiating a power-laden and conflicting 'reality' in the communicative process, telling many divergent stories. The text will reach many types of readers - teachers, students, administrators, parents and the wider community - all of whom bring different past experiences, beliefs, attitudes, and commitments with them. They start from different places. Some will find comfort with the text; others will not.

The new curriculum probably suits my teaching and learning style so I'm fortunate in that I feel comfortable with it reasonably and that probably isn't true of everybody. So that it's something I have developed over the years and feel comfortable with anyway and that's not true of everybody within the department.

(AL)

No one interpreter is 'master' of the 'real' than any other. There is no privileged access to the 'real' of the curriculum text. Upon its delivery to teachers, the singular document that is the text arrives with expectant transference. In a concern for grasping the 'sense' of the text, readers will search for its identity, constituted by its reference to the world of school mathematics. The text cannot be the expression of an already constituted experience. Interpretation then becomes necessary and requires bringing the reference of the teacher's world into the curriculum without collapsing into its specificity. The social knowledge which she brings to a 'reading' will serve to decentre its meanings. It might be said that the teacher is always reading oneself when reading a text, captured by a number of domain assumptions which allow her to see only certain aspects of the situation. She will reject, choose or ignore part of the text as she focuses on personal advantage.

Every act of reading the policy document and every teaching occasion produces meanings, the social and political implications of which are determined both by the position within the discursive field from which the teacher reads and acts, and the knowledge inscribed in the discursive field from which she reads and acts. The text could be thought of then as a permutational incessantly mobile space and within it a multiplicity of discursive events interweave. Thus the author of the text cannot be the source of the authority of meaning any more than the individual reader can be its origin. The postmodern emphasis shifts then away from the inaccessible authorial intentions onto the text itself.

I think it is a different way from sitting down, getting out your books, ruling up and doing work from textbooks

(RI)

It's not a series of techniques. It's a philosophy really behind the teaching. Not actually the techniques itself. Obviously some things will become more important. Group management and class discussion management as well. Trying to get away from the old chalk and talk sort of style into a more hands-on experience type of teaching and I guess that it will require added training in that respect. But I think it's more the philosophy than the techniques that are important.

(TI)

Activities, doing something rather than sitting down doing sums out of a text book. Actually getting involved, problem solving, investigation. Something where it can be seen the same as other subjects like art where they find it interesting. There's some creativity in there. There's some activity. There's actually something where the kids can have their own input into it rather than just something that's been imposed upon them. Rather than just learning a whole lot of rules and a whole lot of steps to do something, they're actually developing steps themselves as well as coming in with their own creative ideas. I like that.

(BV)

Since the reader of the text is intimately linked to a set of institutional contexts, any understanding of teachers' curriculum work must be grounded in the social experience of daily school life. Traditional curriculum inquiry has paid little attention to institutional and wider societal factors in which pedagogical practice is embedded. The implementation of a curriculum requires, then, an understanding of schools as organisations in society, since possibilities are defined not only within the culture and political climate of the classroom, but also within the school itself and the wider school community.

Because mathematics teachers participate in networks beyond their own classrooms, the values and interests constituting the norms of mathematics pedagogy have to be understood in the context of widely held beliefs about mathematics. These cross a range of discursive fields from the school, the parents, the community, and employers, to the representation of mathematics in the media. To speak of the institution of school mathematics is to draw together a number of institutional sites and practices, which although they are differentially positioned with respect to access of power, together produce the discursive field of school mathematics. The attempt in New Zealand to change such meanings through the introduction of *Mathematics in the New Zealand Curriculum* constitutes a part of the wider Western academic endeavour which seeks to transform the dominant discourse of school mathematics.

It is important to recognise and not ignore the ways in which the school itself claims control over curriculum. This claim exists not only in the interpersonal conflicts between senior management teams and teachers but is more importantly couched in the culture of efficiency and effectiveness of the school's bureaucracy. Parameters of prediction, control and accountability in the school that have woven educational ideas and practices into a technicist web of 'performative privatisation', profoundly constrain the kind and extent of changes towards *Mathematics in the New Zealand Curriculum* teachers can effect.

Professional responsibility for the mathematics teacher no longer begins and ends with mathematics nor even with teaching and learning. The major school restructuring of 1989 is not simply a structural change, it also represents a profound change in organisational culture. Oriented towards and constructed within a discourse of cost, income, efficiency, financial planning, image presentation and enterprise, the 'new management' competes for control over curriculum in schools. It sets itself against sustained personal and departmental educational and professional development. In doing so, it generates tensions, ambiguities and ambivalences in schools and acts to divert energies and efforts away from the vision of *Mathematics in the New Zealand Curriculum*.

Apart from the normal duties of running a department I am a member of the Senior Management team. This involves meetings with the Principal and the other PR3s. I am also involved in the writing of the school timetable as timetabler, exam timetable, and the preparation of a booklet on report writing and the computerisation of reports, This team is also investigating the implementation of the Framework. Curriculum committees and other administration areas such as Teacher-in-charge of soccer and duty team also take up some of my time...I know I am not being an effective HOD and teacher. If I had more support and the time to give to my staff and the development of resources and programmes I wouldn't be so concerned.

(MM)

I'm in charge of the Sixth Form Certificate in general and that requires making sure the teachers record their marks properly on the computer, work with the grades we're given and allocate them and send everything off...That does take quite a bit of time. I am also part of the Assessment and Reporting Committee for the school.

We are expected to do a lot outside the classroom...We are also expected to work a lot of weekends doing a lot of PR, talking to the parents, ringing up parents when there might be a problem

(CL)

Since the school is a public institution and integral part of the polity, deciding what to do about curriculum problems in schools is also inherently a political act. Any activity that is inherently moral and political is likely to be contested and, from time to time, embroiled in controversy. Curriculum knowledge production resonates with all the oppositions and tensions of education - the private and the public; the unknown and the known; the individual and the collective, with conservation and with transformation. Curriculum knowledge production is a process of interpretation whose rules are determined by the discourse of the classroom, by community politics, by bureaucratic regulations all serving to undermine its open inquiry and democratic participation.

Sensitivity to human needs is stifled by a growing pressure on the social, political and economic infrastructure of the school to respond to the 'education means business' approaches. For these teachers opportunities for changing pedagogical practice becomes limited. The purpose of educational endeavour has now become antithetical to critical notions of relevant professional practice. Paradoxically the school climate that makes the curriculum change seem desirable or even necessary, is also one in which any thorough change in school mathematics may seem to these teachers themselves impossible to achieve.

These teachers were concerned not only with the world of theory but were also engaged in the important arena of practice. They created curricula for students whose mathematical experiences were already established. They attempted to mediate the world of abstract theory and the lifeworld of the school. On the one hand *Mathematics in the New Zealand Curriculum* urges that teachers take seriously the imperatives of living in a multicultural democracy. On the other, the organisation of the school is increasingly dominated by educational policy constituted by a set of values and practices that take as their model the laws and ideas of the marketplace.

The happy illusion of their engagement with seductive new school mathematical theory is shattered and redefined through corporate ideas in which competition is ethically prior to cooperation, excellence to equity and standardisation to difference. In their curriculum efforts they inevitably run up against established perspectives and methods which when considered alongside institutional constraints, programme demands and public expectations, militate against any significant reformulation of mathematics pedagogy. They come to understand what is meant by the 'real' in curriculum work as contested, multiple and partial.

## Conclusion

This paper has not attempted to offer an alternative and more secure foundation for curriculum implementation, but rather sought to illumine the complexity, contingency and fragility of forms and events. It considers implementation of curriculum as a cycle of continuous policy making, which evolves amongst all the parties in the process. It recognises the multiple and contradictory aspects of teachers' curriculum work within the complex and often conflicting historical, interpersonal and ideological contexts of individual and organisational involvement. The point was to break through the sameness, the flattened landscape, to disrupt official readings of curriculum implementation and to question its assumed progressive accomplishments.

Implementation then becomes not a site for working through more effective transmission strategies, but for helping teachers learn to analyse the discourses available to them, which ones they are invested in and how they are partially and contradictorily inscribed by the dominant. As such it is a search not only for the evidence of those forces that 'diminish' teachers, but also provides a medium for them to reduce the dichotomies between social and cultural forces. It moves beyond proposals that merely speak on behalf of the researched teachers, to a position that makes available an exploratory tool for them to move beyond their present positions.