Narrative inquiry in teacher education:
concepts, criteria, case studies and a critique

Noel Gough, Ken Alexander, Catherine Beavis, Heather Maunder and Warren
Prior
Centre for Studies in the Curriculum
Victoria College, 662 Blackburn Road, Clayton, Victoria 3168

Introduction: narrative inquiry in education

This paper is a work-in-progress report on selected aspects of what has
become known as the Victoria College Narrative Inquiry in Teacher Education
(NITE) project. The project's title, its convenient acronym (we took to
calling ourselves 'the NITE club') and our joint authorship of this paper
may give an impression of coherence, common purpose and sustained teamwork,
but we make no such claim. Rather, we are using the concept of narrative
inquiry as an organising principle to facilitate a coalition of compatible
endeavours in which we share resources and exchange ideas, in ways that we
usually find are congenial and constructive.

We are aware that to many people the phrase 'narrative inquiry in teacher
education' (1) is not self-explanatory. Indeed, we are not yet convinced
that 'narrative inquiry' is necessarily the most appropriate generic label
for the kinds of research in which we are engaging. But there is a growing
body of literature which embodies the term and it captures some of the
significant characteristics of what we are doing and how we are doing it.
Connelly and Clandinin (1990: 2) provide a succinct rationale for narrative
inquiry in education which we find useful:

'humans are storytelling organisms who, individually and socially, lead
storied lives. The study of narrative, therefore, is the study of the ways
humans experience the world. This general notion translates into the view
that education [and educational research] is the construction and
reconstruction of personal and social stories; teachers and learners are
storytellers and characters in their own and other's stories'.

In other words, educational knowledge is construed discursively and much of
what we (collectively and individually) claim to 'know' in or about
education comes from telling each other stories of educational experience.
As we understand it, narrative inquiry is concerned with analysis and
criticism of the stories we encounter in our work – teachers' stories,
student teachers' stories, childrens' stories and our own and other teacher
educators' stories, as well as the myths (pervasive or persistent stories
in our culture and its subcultures) which mediate interactions between
teachers and learners in schools and in teacher education programs. These

stories are constituted in the discourses and practices in which we engage
— in the informal exchanges of anecdotes and gossip, in the formalised
discourses of policy statements, textbooks and journal articles, in the
rituals of teaching and conference presentations, and in all the other
texts, artifacts and media with which we construct meaning in our daily
lives.

Thinking about narrative in education takes us beyond analysis and
criticism to considering questions of choice, decision and action. As
Alisdair MacIntyre (1984: 216) writes:

'I can only answer the question 'What am I to do?' if I can answer the
prior question 'Of what story or stories do I find myself a part?'…
Mythology, in its original sense, is at the heart of things.'

In this sense, narrative inquiry is emancipatory in its intent. The
particular ways in which we give meaning to ourselves, others and the world
may be formulated through discourses of which we are largely unaware or
which are taken for granted. These discourses are given substance and
pattern through the stories we deploy in our social interactions.
Reflecting critically on the stories we read, hear, live and tell, may help
us to understand how we can turn our own discourses and practices against
those which constrain us.

Our shared interest in narrative inquiry has evolved in idiosyncratic ways
as each of us, either individually or in various collaborative
arrangements, has found narrative concepts and methods to be useful or
generative in exploring specific problems and issues arising from our
particular forms of practice in teacher education. Our individual
specialisations include graduate curriculum studies and preservice
secondary teacher education in Australian studies, English (language and
literature), environmental education, history, physical education and
science education. As we began working together, a number of discernible
categories of questions, problems and issues emerged as foci for our
inquiries. At the present time these include:

●   issues concerning the classroom uses of young people's popular
media, with particular reference to English, science and environmental
education;
●   questions arising from poststructural analyses of environmental
education discourses and practices;
●   issues concerning the production of school knowledge in VCE
Australian Studies;
●   questions about the cultural myths and meanings of science teaching
laboratories and texts;
●   questions arising from critical analyses of physical education
discourses and practices.

Studies in each of the above areas draw selectively on a variety of
narrative sources and techniques for collecting narrative data. The

language and criteria for interpreting, analysing and evaluating narratives
also varies from case to case and includes, for example, selected theories
of textual practice, discourse analysis, deliberative curriculum study,
critical feminism, curriculum history, the sociology of school knowledge
and poststructural criticism. Our broad aim is to produce exemplary case
histories of narrative inquiry in teacher education together with a
refinement and critique of the concepts, procedures and criteria which
constitute the method of narrative inquiry in each case.

We initially planned that our research would proceed in two overlapping
phases. The first phase involves the conduct of the studies listed above.
The products of this phase include narratives of our own experiences in
conducting and reflecting upon the inquiries undertaken in each case (NB:
any study of a narrative construction is itself a narrative construction;
narrative is thus both phenomenon and method in narrative inquiry). The
second phase is intended to generate analyses and criticisms of these
narratives. We see this phase as involving a 'poststructural move' (see
Culler 1990) – an attempt to analyse our own positions in order to reveal
the ways in which our first phase analyses may be caught up in the stories
we are analysing.

In the remainder of this paper we will describe the ways in which each of
the five areas of study have been construed as an instance of narrative
inquiry in teacher education. We will also report some interim outcomes of
these studies, and progress towards the project's overall goal, drawing
upon accounts of our personal experiences in conducting and critically
reflecting upon the inquiries undertaken to date.

Popular media in schools: implications for teacher education

This study began with our attempts to describe and problematise some
implications for teaching and teacher education of empirical and critical
research on young people's worldviews and their embodiments in popular
media. It is a pedagogical truism that good teaching begins from an
understanding of what learners already 'know', yet beneath the surface
rhetoric of 'making it relevant' there is little evidence of young people's
experiences and values being built into the curriculum beyond the stages of
introductory study in many subject areas. Secondary English teachers may
have managed this better than most. The learner's personal experience and
outlook has long been valued in written and oral expression, and in 'making
connections' with stories, poems and other texts studied in junior forms.
In senior classes the incorporation of elements of reader response theory
into the teaching of 'text response' and literature studies is increasingly
evident. Curriculum guidelines encourage teachers to value the role of
prior experience in the processes by which a student arrives at a
'considered' understanding of the text. But many teachers are still
reluctant to take the further step of seeing different perspectives,
ideologies and readings as legitimate parts of literary study. In practice,
students' private and idiosyncratic readings often are treated as immature

starting points – prior experience is merely a staging post on the way to adopting (or failing to adopt) the dominant discourses of schooling that are necessary for 'success'.

The situation in some other subject areas may be worse. For example, much school science education is condescending towards children's personal and intuitive understandings and debunks the public expression of these understandings in popular media – which are portrayed chiefly as sites of fantasy or 'incorrect' science. Thus, a common use of science fiction films in schools is to encourage students to identify 'violations' of scientific principles in them (see, for example, Dubeck et al 1988). Such readings constitute very narrow interpretations of these media and devalue their educative potential by suggesting that science fiction is deficient unless it illustrates scientific principles 'correctly'. This occludes the sense in which science fiction texts may function as 'narrative experiments' (Ormiston and Sassower 1989). Many works of science fiction can be read as critical and creative explorations of issues in science, technology and society that are seen to be problematic by those who create and consume them. For example, the RoboCop movies can be interpreted as speculative reconceptualisations of what it means to be human in a world of increasingly intrusive technological mediations. The popularity of these movies may be a reflection of young people's curiosity about questions that are significant to them – questions that also merit the serious attention of science educators.

Popular media are still regarded with suspicion or outright hostility by many stakeholders in schooling. In part this stems from a dislike of the subject matter or form, in part from a fear that it may displace 'high culture' or erode 'cultural literacy'. Other anxieties arise from concerns about the negative influences of popular media on young people. For example, a number of critical feminist studies (Modelski 1982, Gilbert and Rowe 1989, Gilbert and Taylor 1991) have demonstrated the contributions of pulp romances and 'soapies' to teenage girls' construction of gender identities and roles. This work is particularly generative in suggesting approaches that might help students to develop independent and resistant readings of dominant cultural narratives.

Other negative influences that often are attributed to popular media are exemplified by Slaughter's (1991) analysis of images of technology, violence and futures in product-linked comics, TV programs and films ('Transformers', 'Zoids', 'He-Man', 'Captain Power'). He judges this material to be 'a waste of time', 'shallow fantasy' and 'not worthy of children for it is literally beneath them':

'basic human dilemmas are displayed in such a sparse and unhelpful way that they are stripped of human significance. The constant regression towards primitivism, violence and crude magic do not lead onto viable life strategies… If we then add the misdirections of ideologically distorted discourse and the pre-judgements of a culture obsessed with empiricism, marketing, technology, we begin to see some part of the immense weight of

negativity the young are expected to bear (Slaughter 1991: 22).'

Slaughter contrasts the comic materials and their 'life-denying' values with novels by Ursula Le Guin (A Wizard of Earthsea 1968) and Gillian Rubinstein (Beyond the Labyrinth 1990) which he sees as enriching students' lives and offering guidelines as to how they might manage them. However, his argument embodies a naïve view of reading which assumes that young people are uncritical and relatively helpless consumers of texts. Like popular media, the novels Slaughter praises are likely to be read or resisted in particular ways. Mainstream texts, like popular media, are constructed, culturally located, and serve particular practical interests and ideologies (albeit ones with which educated middle class parents and teachers are comfortable) to which students will more or less favourably be inclined depending on their particular circumstances and prior knowledge, the purposes of the reading and the ways in which the books are taught.

Slaughter regards the popular texts as 'shallow', damaging, unduly violent, and likely to disempower their readers and contribute to 'maladaptive' patterns of thought. He sees young people as victims of 'the increasingly negative influence of commercially motivated material' and concludes pessimistically that it is 'an unequal struggle'. He also articulates fears of 'hidden processes' and manipulation that may be shared by many teachers and parents:

'…the surfaces of media productions — ie the visual and auditory aspects — engage the senses. But very much else is also happening beneath the surface. For one thing, ideas, ideologies, commitments and particular ways of construing the world are also being communicated and legitimised. Such symbolic and epistemological processes take place at deeper levels and in a much less direct and open way. They may therefore be more influential than the overt content of media productions (Slaughter 1991: 3).'

Slaughter's argument seems to assume that only popular texts manipulate readers by means of some hidden menace lurking beneath the surface. But to explore popular media primarily with a view to discovering how they 'manipulate' readers or viewers may be to misunderstand the bases of their appeal and what they 'mean' to those who enjoy them. Indeed, if popular texts play a more powerful role than school texts in constructing aspects of the self (such as self image and role relationships), they ought surely to be subjects for school study rather than be suppressed or ignored. The capacity to understand and analyse cultural texts and their roles in the social construction of meaning is important whether the texts be popular or mainstream.

In the light of our discussions about the contested educational values of popular media, we looked for ways to access young people's readings of them. In 1990 an obvious popular text to work with was Teenage Mutant Ninja Turtles in its various forms as a comic book and as both animated and 'live action' movies/videos. We used segments of the animated video series with several groups including (i) student teachers (with 'English method'

specialisations), (ii) year seven students at two secondary schools (one
government, one Catholic) and (iii) year nine students at a suburban
government secondary school. We met regularly with this third group's
English teachers for five weeks while the students worked with both the
Turtles animated video and its original comic book form.

We discussed with teachers and student teachers the values they saw
embedded in Turtles media. Both groups went straight to what Slaughter
fears will remain hidden 'beneath the surface', suggesting that for them at
least the critical/analytic skills they have developed through their own
reading and viewing stands them in good stead in relation to popular texts.
In itself this suggests that such media might be valuable resources for the
development of critical skills. Indeed, all of the groups of school
students were already quite sophisticated in this respect. Thus, an
advantage of incorporating popular media in this way is the possibility
that implicit understandings about how popular texts operate will be
brought to consciousness and used elsewhere. It should be possible to
extend students' understandings about the locating and marketing of popular
texts into viewing all texts, including 'literary' ones, as being socially
constructed and produced. Furthermore, our experience suggests that
examining popular media in classrooms also develops students' capacities to
recognise, criticise and resist the positions these media offer. At the
very least, the roles and behaviours modelled, and the assumptions about
gender stereotypes, social relations, conflict resolution, consumerist
values and the like that are made in such media, provide a starting point
for the development of such capacities.

Both student teachers and school students were keen to debate questions
about role and behaviour models in popular media, whether or not viewers
are able to resist them in significant ways, and the overt ways in which
the effects of this modelling, or resistance to it, might be evidenced.
Most school students were conscious and critical of the marketing of Turtle
paraphernalia (socks, toys, cordial, muesli bars etc), though less ready to
consider the program itself as something that was marketed. Comments on the
sources of the Turtles' popularity included observations about the
enthusiasm generated by a craze, the appeal of particular characters, the
vernacular (a big selling point) and superhero myths. Most saw little
connection with 'real life', although there was a suggestion – by way of
hedging one's bets, perhaps? – that things might well be different in New
York! Most students took the question about real life as the jumping off
point for discussing children who may have been influenced by TMNT to play
in drains, whether other behaviours are transferred, the extent to which TV
programs are responsible for such influences and so on (for details of
school students' responses see Beavis and Gough 1991, Maunder and Beavis in
press).

Student teachers also debated the question of whether or not popular media
should be part of school curricula. One student, a single mother with a
five year old son, argued that mass media inculcated passivity and cultural
uniformity, and that preschool children at least should live their lives

free of their influences. As part of her assessment for the unit in which these discussions took place, this student created an alternative narrative – a picture book about a boy, Jason, who does not have TV set. Despite peer pressure to the contrary, Jason eventually comes to endorse his mother's views. He recognises that he is better at climbing trees and more imaginative than his more conventional friends who are limited in outlook and resources as a result of wasted hours in front of the TV. Jason has fewer TV-induced bad dreams, a more realistic view of life and a close relationship with his mother through their extended time to talk.

This student's response echoes the tactics employed by some feminist writers in producing 'feminist fairy tales' (with counter-stereotypical characters) as children's picture books. However, as critical feminist research has demonstrated (Davies 1989, Davies and Banks in press), children do not necessarily understand these stories in the ways their authors intend. Many children interpret feminist fairy tales as traditional stories in which, say, the counter-stereotypical princess has 'got things wrong': their interpretations are informed by the dominant discourses of gender – by their understandings of dominant cultural storylines. Resisting these discourses, or even being aware that they may be something which one might wish to resist, requires something other than being presented with a counter-discourse. We see parallels here with the ways in which people become positioned in their relations with popular media. Regardless of whether or not it is possible, let alone desirable, for preschool children to live their lives free of popular media and their influences, children sooner or later are subject to the constitutive force of the dominant discourses embodied in these media. Individuals who understand how their 'storied lives' are shaped and organised by the discursive practices of popular media may be better positioned to resist (and 'rewrite') them.

Our study focused initially on secondary English where popular media already are used widely and, for the most part, wisely. We are now extending this study to include areas like science education in which popular media are treated as 'bad examples' of the subject matters in question. For example, the relationship of popular media to the greenhouse effect (a common topic in school science and environmental education) has been one focus for our inquiries.

At the present time, most education about the greenhouse effect is based on conveying 'scientific' information about trends in greenhouse gas emissions, the atmospheric composition of greenhouse gases, and alternative scenarios of their predictable environmental and social effects. But learners may better understand the meaning and significance of the greenhouse effect by interacting with media which speak directly to human emotions rather than those which use 'scientific' styles of inscription, narrative and reasoning. Recently, greenhouse-related issues have begun to infuse popular songs, novels, poetry, theatre and other visual and performing arts but, with few exceptions, they are being used only in very restricted ways in greenhouse education programs.

Narrative inquiry concerning the greenhouse effect includes, for example, exploring cultural myths of climate change and their intertextual significance. Our experiences of climate and weather are socially constructed and the continued use of particular words and phrases in everyday speech contributes to the persistence of cultural myths, such as shared understandings of what 'bad' weather or a 'fine' day signifies. One persistent myth is that changes in climate and weather occur independently of human agency or control — hence the oft-repeated joke that 'everybody talks about the weather, but nobody does anything about it'. Yet the publicity given to the greenhouse effect and other issues of climate change may be altering the nature and status of this myth.

For example, among the first six episodes of the animated video productions of Teenage Mutant Ninja Turtles, two had plots in which the villains deliberately modified climatic conditions. In one of these, a 'weather satellite' produced violent storms (achieved by setting the satellite's control to 'total chaos', an expression which also suggests changes in cultural understandings of climate, since the concept of chaos has been popularised relatively recently and has not usually been associated with weather). In the other episode, energy was drawn from the sun into solar cells to produce rapid and severe global cooling. Dialogue in both episodes used variations on the conversational cliché quoted above (thus, after the 'weather satellite' had been destroyed by one of the Turtles, another said to him, 'Hey, Leonardo! Everybody else talks about the weather, but you really did something about it!').

Such examples suggest a need to explore ways in which the language of climate change is entering the intertextual lives of learners. That is, how do young people's readings of curricular and media texts dealing with greenhouse-related issues influence their readings of other texts (and vice versa)? Exploring such questions should enable us to develop ways of drawing learners' self-critical attention to intertextual constructions that arise from their consumption of greenhouse information and popular media.

The characteristic discourses and practices of secondary science teacher education do not help teachers to deal with such questions. Our experience is that the preparation of science teachers provides little time (or incentive) for critical reflection on their own 'storied lives' and the 'scientific' discourses and practices into which they are interpellated. Similarly, they may be given little opportunity to reflect on the discontinuities and contradictions between these discourses and the 'storied lives' of the young people they will teach. We are therefore exploring ways in which popular media can engage student teachers in explorations of the 'ecology' (the conceptual environment) of young people's worlds in collaboration with the students they teach (see Gough 1989). These explorations may yield ways for both student teachers and their pupils to reflect critically on the discourses and narratives in which they participate (including classroom talk and texts and popular media). Popular songs, comics, graphic novels and children's literature

seem almost to be 'irresistible' texts for exploring certain issues. For example, environmental education student teachers who have resisted 'academic' expositions of the significance of ecofeminism have been willing to discuss and debate — often with great enthusiasm, insight and sophistication — the same issue when engaged via an episode of The Simpsons. More significantly, many graphic novels and children's books deal with issues of postmodern science, technology and society in ways that are more insightful and intellectually adventurous than most textbooks. For example, Big Numbers (Moore and Sienkiewicz 1990) is a graphic novel which chronicles the lives of about forty main characters in a small English town where a community is being transformed and displaced by the impact of a sprawling new shopping mall; its narrative structure uses the science and mathematics of fractals and chaos to illuminate the social, economic, political, climatic and personal emotional turbulences that accompany this transformation. Big Numbers does not trivialise these concepts but places them in a context which invites further exploration by learners.

Our inquiries so far have raised — and helped us towards a resolution of — several practical problems concerning the meaning and significance of popular media in curriculum design and teacher development. However, we have also refined ideas about the nature and conduct of research in teacher education and the specific contribution of narrative inquiry. Excerpts from a personal reflection by one of the researchers involved in this particular study conveys some sense of what we may have achieved so far:

(Open long quote) The project has provided an opportunity for me to explore kids' perspectives on popular media and to consider how popular media and new reading theory might usefully be incorporated in secondary English curricula. I believed it would improve my own teaching and the sort of advice I offered to students in relation to these two areas — that is, what does it look like in practice? what issues arise as a consequence? how can we use students' perspectives and texts into the classroom? I believed these questions would also be of interest to the wider community of English teachers, so I wanted to learn more about what experienced teachers might make of this proposed curriculum change (which has been legitimated elsewhere by the inclusion of popular media and non-print texts in VCE booklists and by the 'official discourse' of the Ministry's Curriculum Frameworks).

In relation to the project's larger aims and rationale, the value of the popular media study has been in part to extend the acceptability of this approach, and to provide linkages with other theory and research in ways that could extend its implications for myself and others. The specific questions I encountered (eg how does one respect students' own popular culture while trying to lead them to a changed [enlarged?] perspective? do popular media texts change by virtue of having been read in the classroom? how do teachers perceive these texts and how does that affect their usefulness?) gave me a new basis for considering propositions, problems and perspectives I encountered in my reading. Relevant areas included the literature on curriculum development, the new reading theory and its

implications for secondary English teaching, popular media and cultural studies in the curriculum and the implications of poststructural perspectives for education.

To my mind the main values of the NITE project include:

- the usefulness of narrative inquiry as a method which values teachers' individual insights and personal practical knowledge
- the provision of small scale and highly specific examples of research — small enough to conceptualise, explore and reflect upon in detail
- the placing of this and the other studies in a more general context to do with appropriate research methodology for curriculum and teacher education
- the opportunities for questioning and reflection upon relevant issues at a more general level.

To expand a little, the key concept of the NITE project as I understand it is the centrality of narrative. This has a number of corollaries, perhaps the most important of which is that narrative allows individual voice and experience to be articulated and explored. This leaves individual practitioners — teachers, teacher educators, students, student teachers — with the integrity of their own experience. It recognises the legitimacy of personal experience without having to make any absolute or 'objective' claims about the nature of reality, in the classroom or elsewhere. It is both 'natural' and avowedly partial, so that by reading these narratives as one reads texts of any kind, it is the specifics of experience which inform any generalisations arrived at by readers or participants.

As narratives these accounts are also available for deconstruction, so that assumptions and ideologies that might otherwise remain hidden can be foregrounded and perhaps acted upon. As narratives represent individual understandings, however socially constructed, researchers and readers may look to collecting a number of narratives of various kinds, from a number of those involved, to gain the the sorts of insights that multiple perspectives or triangulation may yield.

Another point concerns the pleasure of reading — not inappropriate in this context of considering how curriculum issues are conceptualised and how questions are raised and arguments made. Narrative argues in a particular way — it wins its readers in a different way from exposition and positions them differently in relation to the propositions embedded or implied.

My own teaching has been affected chiefly in relation to the reflection it prompted on issues mentioned earlier (popular culture, students' subjectivity, reading approaches etc). The reaction in the press to this area of curriculum change has prompted some thought about how diversely reports of research are read and on the public role of researchers when dealing with potentially controversial topics. How to explore the new in a tentative and open way without inviting the worst fears and

misconstructions of those threatened by proposed change remains
problematic. I guess this has more to do with my role as a teacher educator
within the English teaching community than with my work with students,
though it surfaces there in the balance that is required between
establishing basic principles to do with language, learning and curriculum
on the one hand and modelling curiosity (even action research) on the
other. Work on the project certainly extended my ability to teach students
in the topic area and made me more sensitive in relation to the
platitudinous but essential recommendation that in their own teaching they
'start from where the student is at'. (Close long quote)

Poststructural analyses of environmental education discourses and practices

This study began from curiosity about the implications of some
postmodernisms for environmental education, with particular reference to
the poststructural critique of 'foundationalist' discourses
('metanarratives'). If we accept the possibility that there are no
foundational narratives to anchor our discourses and practices, we still
are faced with the practical problem of negotiating social agreements about
criteria for the conduct of environmental education.

We conducted a number of related inquiries predicated on the view that, in
the present global circumstances of environmental degradation, it is
morally defensible to privilege two kinds of discourses in environmental
education, not on the grounds of their 'foundational' status but on a
critical consideration of their practical effects. One of these is the kind
of 'oppositional consciousness' that has been explicated by several
feminist postmodernists which privileges discourses constructed in
opposition to those forged by the dominant culture. For example, Sandra
Harding (1986: 193) sees a feminist postmodernist standpoint emerging from
political struggles in opposition to 'the longing for "one true story" that
has been the psychic motor for Western science'. Another discourse which
environmental educators may wish to agree to privilege is that which seeks
a postmodern reconceptualisation of environmental ethics. Such a discourse
also is likely to be oppositional in the first instance, although some
ecophilosophers are making constructive efforts to refine postmodern
environmental ethics using such concepts as 'bioregional narrative' (Cheney
1989) and 'transpersonal ecology' (Fox 1990).

Oppositional discourses include those which deconstruct the dominant
discursive formulations of environmental education — the narratives with
which we construct our 'storied lives' as environmental educators. As
Lawrence Durrell (1963) puts it:

'We live... lives based on selected fictions. Our view of reality is
conditioned by our position in space and time — not by our personalities as
we like to think. Thus every interpretation of reality is based on a unique
position. Two paces east or west and the whole picture is changed.'

Environmental education owes its very existence to a particular

interpretation of reality and poststructural criticism is one way to evaluate the 'selected fictions' on which that view of reality is based – to examine how our perceptions of environmental problems and issues, and the narratives and texts we construct in response to them, are 'conditioned by our position in space and time'. One of our studies involved a deconstruction of these narratives and texts (see Gough 1990ab, 1991abc) which demonstrated that some can be regarded as unsustainable fictions. 'Fiction' is used here in the original sense of fictio, that is, something fashioned by a human agent. All narratives and texts are 'fictions' in this sense. When we label a story as 'non-fiction' we are not usually intending to deny that it was fashioned by a human but, rather, are asserting something about its 'truth' or warrant or its correspondence with our taken-for-granted understandings of 'reality'. But a postmodern sense of 'truth' and 'reality' is that they are the 'agreed stories' of participants in particular discourses. Poststructural criticism suggests that such stories are only one narrative thread among the many that constitute the fabric of our 'storied lives' and 'critical pragmatism' (Cherryholmes 1988, Gough 1991d, in press) suggests that some of these stories, regardless of their agreed 'truth' or warrant, are less defensible and less sustainable than others.

Many of the formalised narratives of environmental education (such as conservation strategies, curriculum policies, textbooks and the like) are, in a superficial sense, components of an oppositional discourse, since they often have been constructed in response to perceived structural dysfunctions of modern societies (such as the forms of economic production and development which have resulted in land degradation and air pollution). But they are only superficially oppositional because they also are embodiments of the dysfunctions they oppose. The dominant narratives of environmental education continue to produce and reproduce the kinds of metaphors and myths that are legitimated by reference to the metanarrative of modern science.

For example, Our Common Future (World Commission on Environment and Development 1987), which has attained almost biblical status among many environmental educators, is riddled with modernist assumptions emphasising order, accountability, systematisation, rationalisation, expertise, specialisation, linear development and control. Our Common Future takes ideological positions (such as commitments to efficiency, control, manipulation, materialism, instrumentalism and utilitarianism) while tacitly denying ideology in its surface rhetoric of 'scientific' detachment. It offers advice about correcting practice that reinforces present practice (such as the application of systems theory to environmental research and management). It largely ignores the effects of power in shaping the discourses of environmental practice. Rather than blindly accepting and 'implementing' the recommendations of texts like Our Common Future, poststructural inquiry leads us to (i) structurally analyse the meanings of its words and discourses, (ii) locate its meanings from historical, political, economic, cultural and linguistic perspectives and (iii) illuminate, explore, analyse and criticise the categories of

discourse, modes of expression, metaphors, argumentative styles, rules of
evidence and literary allusions that, as a text, it values and celebrates.

We have also examined critically the possible environmental effects of
modernist discourses. The global environmental problems which now seem to
threaten the sustainability of life on earth can be seen as consequences of
the cultivation in modern industrialised societies of stories in which the
earth (or 'nature') is construed and exploited as an object of instrumental
value. Criticism of these stories by educators (and not just environmental
educators) is essential because they also include myths about how a person
becomes 'cultivated' and the power arrangements through which some people
assume cultural leadership and become, as it were, 'cultivators'.

'The cultivator, as artist or critic, like the scientist, has so often
regarded nature as low, as threat, as transcended origin and therefore in
need of conquest and domination. The cultivated subject is seen to be the
mind grown above nature and in command of it, totally separate from the
baseness of body.

'This discourse has self-evidently failed. Humanity has damaged its own
ecosystem, its collective and interdependent body, through the alienation
of self from a nature that is external, other. An ecology of survival
extols neither a rationalist command of nature nor a romantic return to it
– nature never went away – but a major reassessment of social and economic
actions according to their effects on wellbeing within the biological and
social ecology. If humanity is to survive, we must recognise that there is
no 'outside' from which to speak or act; we must gain a new normative
matrix for the conception and production of the world. Survival is the one
universal value that transcends the proclamation of difference' (Fry and
Willis 1989: 230-1).

Modern science has provided many solutions to technical problems of
survival – we have abundant technical knowledge ('know-how') of the ways in
which humans can sustain a functional and adaptive relationship with the
earth. But the stories which tell us how to survive rarely address
questions of why the earth and its inhabitants should survive – they lack
the conceptual systems and signifiers from which we might be able to
construct meanings, purposes and values for survival. This may be because
we have allowed our linguistic tools to limit our creative and critical
imaginations. Abraham Maslow is attributed with the aphorism which suggests
that 'if the only tool you have is a hammer, you tend to treat everything
as if it were a nail.' Narrative inquiry helps us to expose the limitations
of our linguistic 'hammers' and to seek new or renewed conceptions of the
tools with which we construct meaning and the purposes to which they might
be put.

We have examined narratives that do transcend the 'proclamation of
difference', such as those of native Americans and Aboriginal Australian,
with a view to finding clues to the reconstruction of 'environment-
friendly' discourses in the conditions of late industrial and urban

lifestyles. We have been pleased to find examples of these in the counter-discourses of children's talking animal stories and non-mainstream popular media (see Gough 1991c).

Other examples of our narrative inquiries in environmental education include a deconstruction of the language of systems theory with particular reference to environmental studies in the Victorian Certificate of Education (Gough 1991b). This study exemplifies poststructural criticism (in its deconstruction of the *grammar and metaphors* of systems theory and in its investigation of the effects of history and power on the shaping of a discourse) and critical pragmatism (in its concern for the moral effects of privileging the discourse of systems theory in Environmental Studies). This study included critical reflections on the *grammar* of environmental interpretation, the metaphorical construction of nature and the narrative distortions imposed by systems models.

More recently, we have explored another form of narrative inquiry in which our students use their own autobiographical writings as a focus for deconstructing and creatively reconstructing the personal and cultural stories of their interrelationships with the earth. Through reflecting on their own stories, our students began to realise that environmental problems, regardless of whether they are local or global, are produced, reproduced and intensified by the ways in which people in modern industrial societies experience and interact with the earth – by the ways in which we and they live our 'storied lives'. The personal reflections of a researcher involved in this study provides some evidence of what was achieved through this process:

(Open long quote) The written and oral stories generated in the environmental education class illustrate ways in which teacher educators and student teachers can learn from each others' stories. The processes of talking and listening, especially listening, seem to generate not just information but enthusiasm to continue the conversations. This commitment to what can be seen as both divergent and common purposes – where the stories intersect for a time – creates possibilities for change.

In exploring autobiographical writing with environmental education students I tried to encourage the sharing of many different experiences, ideas and perspectives so that students were in fact doing some narrative inquiry of their own. Their initial reaction was hesitant; they seemed to find the process of deconstructing other people's language strange and difficult and deconstructing their own even more perplexing. One student wrote:

>   'The task of writing an autobiography at first appeared to be very daunting, however as I began to progress and my story unfolded it became much easier and very informative. I revealed many values I didn't know existed and made discoveries about the most influential people and places in my life.'

We moved from the fun of a form of 'writing role play', where we swapped

roles and voices and deconstructed the different stories that emerged, to the more challenging task of deconstructing our own writing. As we located assumptions and values hidden in our stories we learned more about ourselves (to my horror I found that my unconscious overuse of the royal plural was extremely patronising!). I had to explain more clearly to students that the kind of reflective writing that we were inviting them to undertake did not require them to totally change what (or the way) they wrote but, rather, to look more closely at the stories 'hidden' in their writing.

Although they found it difficult at first, all students said they found the task rewarding. Another student summed this up in the conclusion to her autobiographical writing task:

'The writing of my environmental history has probably been one of my most significant learning experiences to date, and one which I feel has developed myself more as a whole. I have revealed to myself that I have a significant environmental history (which is one I hadn't realised existed) and a definite appreciation for the environment which I exist as a part of. It is not until you begin to reflect and undergo such thought processes that significant learning takes place. The writing and investigating of a personal history is considerably more effective than many current curriculum and classroom practices; we must work to change them.' (Close long quote)

The production of school knowledge in VCE Australian Studies

This study was inspired by the opportunities presented by one of us being involved as a participant-observer in processes of validation of school-based assessments of student achievement in VCE Australian Studies, a compulsory study undertaken by all Victorian students in year 11. This has provided us with the unique opportunity to be 'in on the ground floor' as a new subject matter of the school curriculum is, quite literally, being invented. Using unstructured (conversational) interviewing and, where possible, teachers' written narratives of their experiences in implementing and assessing VCE Australian Studies, the study is attempting to:

• identify ideological and other cultural conceptions of Australia that are represented in the courses teachers design, and the curriculum materials they use, and the form(s) these representations take
• identify the sources of these ideological and cultural representations in a variety of media and other cultural forms
• illustrate the ways in which curriculum materials are 'read' by teachers and students
• illustrate how these readings articulate with the practical circumstances, demands and contingencies of teachers' lived experiences
• illustrate how the identified ideological and other cultural conceptions of Australia are represented in teachers' lived experiences

We have worked with teachers and students at two secondary colleges,

observing classes and listening to teachers' and students' stories. Along with teacher education students we observed school students making oral presentations and participated in subsequent small group discussions with them which were conducted by our student teachers. We plan to meet with some parents soon and also to arrange interviews with the 'authors' of the 'official story' of VCE Australian Studies (including Jean Blackburn and officers of the Victorian Curriculum and Assessment Board).

This particular study is in a relatively early stage of development, but the ways in which narrative inquiry may illuminate issues in the evolution of Australian Studies, and more general issues in teacher education, are already becoming evident. One of the researchers directly involved with this study has written:

(Open long quote) Narrative inquiry seems particularly relevant to teacher education because much of what teachers know is passed on in the staffroom and the classroom in informal 'gossip' with other teachers and students. Student teachers benefit from analysing the discourses of classrooms (their own, their supervisor's and students') and the informal discourses of staffroom, classroom and playground. In this way they can 'live their own stories.'

Our experience with the Australian Studies inquiry has shown that long-term processes of listening and talking have a cumulative effect. Teachers in the case study schools have shared their stories, time and classes willingly, happily reading my drafts of our discussions and courteously rearranging meetings and interviews when changes to school programs made life difficult. These teachers have expressed enthusiasm for continuing to be involved with the project. (Close long quote)

Another researcher working directly with the Australian Studies inquiry has written:

(Open long quote) I see this stage of the project as a preliminary search into the possible uses of narrative inquiry. 'Big ideas' for me have included:

● suspicion about various forms of data gathering in which only empirical (and preferably quantitative) evidence is seen as being able to lead to 'hard' conclusions

● narrative inquiry requires confidence in both the inquirer and his/ her subjects or audience or co-inquirers. In my classes I have tried to be more responsive to stories told by students about their teaching experiences (and not always to ask for so-called 'hard' evidence to back up their conclusions)

● I am now more inclined to more carefully listen to student teachers' stories while also (i) encouraging them to see that there are many players/actors in 'their' story and (ii) giving them confidence to see

that they do, in fact, have worthwhile stories to tell.

At first the approach seemed such a new way of seeing and knowing and I therefore was surprised at the sheer body of literature now available about narrative inquiry. While I am now sure it is much more suited than many conventional techniques to some areas of research in education, I am still uncertain about its credibility and acceptance within the broad research community. My experience in talking to some non-humanities student teachers this year is that many still scoff at any approach that lacks statistical data. Also, despite the willingness and pleasure with which people tell their stories, it is so time consuming that one is constantly tempted to simply give them a questionnaire! (Close long quote)

Cultural myths and meanings of science teaching laboratories and texts

This study is concerned with analysing the problematic interrelationships between intellectual production in sites of scientific labor ('laboratories') and the construction of school knowledge. Sociological studies of scientific activity have demonstrated the extent to which scientific practices are shaped by social, political and economic factors. These studies emphasise differences between what is actually done in laboratories, what scientists say they do, and what society at large believes they do. Such studies have served to demystify science to some extent, but the products of scientific activity continue to be powerful sources of authority in Western industrialised societies. The significance of scientific laboratories as sites of cultural production is neatly captured in Bruno Latour's (1983: 167) parody of Archimedes: 'Give me a laboratory and I will raise the world'. Latour argues that laboratories manufacture meanings which function as cultural 'levers' to 'move' society in various ways. Their effectiveness in 'moving' society is less well explained by conventional concepts of political and economic power relationships than by the novelty and ambiguity of the cultural meanings they produce and the unpredictable consequences of their appropriation in sites of cultural production (including schools). As such, the work of professional scientists may influence the content and methods of school curricula in ways that go well beyond the content and methods of science subjects.

This study is concerned less with the warrant for the conclusions produced by laboratory scientists (or with the validity of their 'scientific' methods of producing them) than with critical analyses of the effects of institutionalising their characteristic products and modes of production in the discourses and practices of schooling. For example, several teacher education institutions (including Victoria College) are criticised in the Report of the Discipline Review of Teacher Education in Mathematics and Science (Australia. Department of Employment, Education and Training 1989) for their lack of a 'teaching methods laboratory' (and many science teacher educators, here and elsewhere, are using this criticism as a lever to prise funds from institutional budgets to establish such laboratories). Laboratories are necessary for the forms of labor and production in which

many scientists engage, but it does not follow that they are either necessary or desirable for learning in school science or in science teacher education. Preliminary analyses of texts (such as manuals of laboratory exercises) and practices (via student teachers' stories of experience) suggest that teaching laboratories, in schools and in teacher education programs, are used chiefly to mimic and simulate the stereotypical routines of scientific work in ways that divorce these activities from the moral and social purposes, and the social and political conditions, that animate scientific work. Teaching laboratories thus appear to function in ways that insulate learners (in school science education and science teacher education programs) from achieving a critical understanding of scientists' work.

A further problem arises from the observation that scientific production is characterised by institutionalised practices of inscription: the end result, no matter the field, is almost always reduced to a few signs from a rather limited repertoire (diagrams, blots, bands, columns). This problem concerns the extent to which the narratives and texts of science education and science teacher education (including policy documents, curriculum designs and textbooks) should mimic these reductionist forms of inscription (for example, visual representation in biology textbooks is invariably confined to line drawings and photographs). Such problems and issues are being used heuristically, initially with student teachers (through journal writing and unstructured interviews), to explore the implications of cultural production in science for school science curriculum and pedagogy.

For a variety of reasons, this study has progressed very slowly, but it has gradually shifted direction due to the complementarity of the practical interests which inspired both this study and the study of popular media described above. We now argue that popular media can provide:

●   richer and potentially more meaningful sources of information and insights about science, technology and society (and the interrelationships among them) than conventional textbooks and curriculum materials; for example, laboratories themselves are represented strongly in popular media – as symbols, emblems, metaphors and myths of scientific labor – and these images of science need to be problematised as a significant part of the content of science education

●   richer and potentially more meaningful 'sites' for inquiries concerning the interrelationships among science, technology and society than conventional school teaching laboratories; popular media are themselves 'laboratories of ideas' in which meanings are subjected to experimentation and, as noted above, many examples of popular media can be read as critical and creative investigations of the interrelationships among science, technology and society.

In advancing these arguments we are affirming a position adopted already by many teachers and researchers in fields such as English language and literature, media studies and social education, namely, that popular media

are texts in their own right and that they merit close reading by both teachers and learners. The next stage of this study will be concerned with exploring and exemplifying ways in which a variety of forms and examples of popular media can provide a point of entry for critically examining the dominant discourses, narratives and practices of science and technology education. Some specific forms of popular media that will be explored include:

• sf (speculative fiction, science fiction, science fantasy) in various print and audiovisual media — novels and short stories, graphic novels and comics, cinema and videos etc
• science journalism in various print and audiovisual media, with particular attention to the devices used by journalists to camouflage evidence of its status as fictio and their interests in promoting the dualisms of fiction versus nonfiction, science versus art etc
• children's literature, with particular attention to the ways in which contemporary 'kiddilit' embraces postmodernisms

Critical analyses of physical education discourses and practices

This study sought to engage physical education student teachers in critical discourse analysis. Major topics for analysis included: technocratic rationalism in physical education teacher education; understanding professional ideologies; mesomorphism, healthism, individualism and gender issues in physical education. Students were required to respond in writing to a selection of issue papers. Diversity and freedom in the nature and style of their response was encouraged, including dialogues, personal stories and formal analyses in skeptical, cynical, humorous, argumentative and reflective styles. As a result, we hoped that students would be more disposed to engage in critical discourse and able to employ the language of ideology critique in analysing the issues presented to them.

Course evaluations suggested that a majority of students found the issue papers to be 'jargon-ridden' and difficult to understand ('if I'd wanted to do a course in philosophy, I'd have enrolled elsewhere'). While others appreciated the chance to consider broader issues they still felt that the ideologically-oriented issue papers needed a 'softer' introduction if more students were to become predisposed to examine the issues further without the contingencies of course assessment procedures. A small majority wanted the course to focus only on the 'how-to' practical/technical challenges involved in surviving the first teaching round.

Although many found the issues to be 'thought provoking', many regarded having to make a one-to-two page response which was also supposed to be 'honest, relevant and reasoned' as a 'joke'. When they realised it was the number of papers responded to rather than the quality of their reactions which would affect their grade, these students wrote their replies at the last minute just to satisfy the quantitative course requirement.

Students were also asked a question on an end-of-semester test which

required them to engage in discourse analysis. Students were presented with two short stories about Natalie and Danny, two children with quite different school and home experiences with respect to issues of health and physical activity. They were asked to analyse the two stories using 'any of the terms from this semester's issue papers to make brief points about the values, beliefs or commitments lying beneath the surface of the stories. Not all issues will be relevant to each story'.

Despite the cynicism expressed in the course evaluations, almost all students were able to use the language of ideology critique to reach beneath the surface of the narratives to achieve 'readings' of the texts of which they had hitherto not been capable. Typical examples of students' capacities are provided here, although it should be pointed out that these responses probably required the heavy prompting of test conditions for such thoughtful criticism to occur.

'Natalie's parents are very concerned about their bodies and consequently are influenced by the ideology of mesorphism whereby individuals conform to the pressures of having a mesomorphic body type to the point where emotional stress creates eating disorders and exercise fanaticism.'

'The technocentric ideology creeps in here as well whereby the school is more concerned with what it teaches rather than how it teaches and its goals.'

'Health is not available to everyone – factors inhibit individuals from being healthy, eg, race, economic circumstance, education etc'

The researcher chiefly involved with this study made the following critical reflections:

(Open long quote) The potential of narrative inquiry lies in its capacity to help student teachers to 'find their own ways in' to the issues of the profession and to establish well thought out professional ideologies. However, the course evaluation serves to remind us of that well-established pedagogical principle: match tasks to learners' abilities. The presentation of critical narratives (issue papers) was done at a relatively abstract conceptual level and almost certainly violated this principle.

What seems clear, at this early stage, is that these student teachers found critical perspectives difficult to adopt because of the abruptness with which they were exposed to them, in the second semester of the third year of a Bachelor of Education degree best characterised as a fine example of narrow vocationalism.

Narrative inquiry's ability to call on the personal biographies of students to generate 'cases' of more general principles in education serves to remind us of the tendency of some teacher educators to overestimate the conceptual abilities of students. When students can use their own stories to generate cases of more general phenomena, the depth of understanding of

the lessons learned is likely to be far deeper than occurs when complex
terms from critical ideological discourses are presented for their
consideration.

Where my own practice is concerned, I am now using stories to communicate
the richness of experience which underpins the manifest behaviour of
pupils, teachers, schools and school communities in the area of physical
and health education. Well chosen narratives can provide a strong incentive
for student teachers to begin and continue the long and often difficult
journey to becoming reflective practitioners and not just 'mere
functionaries' in the sites in which they pursue their professional
practice. (Close long quote)

Concluding reflections

We believe that the studies reported above go some way towards:

• illustrating processes in teacher education through which
appropriate language and criteria for the conduct of narrative inquiry may
be sought and defended
• providing examples of defensible language and criteria for the
conduct of narrative inquiry in teacher education and illuminating the
circumstances in which they may be generated and judged to be appropriate
• illustrating specific ways in which narrative inquiry in teacher
education contributes to the development of practical arts through which
teachers (in both preservice and inservice settings) and teacher educators
can pursue unique understandings in unique circumstances
• providing substantive foci for conceptual and methodological
refinement and critique of   narrative inquiry in teacher education.

As a group we are still uncertain or ambivalent about the extent to which
we have achieved (or even pursued in any rigorous way) the overall project
goals concerned with reflecting on our own processes as researchers – that
is, making the poststructural move. Some of us, perhaps all, have certainly
done this on an individual basis. For example, one of us has written in a
personal reflection:

(Open long quote) while I grasp the poststructural premises/promises to a
point, the amount of work we all had/have to do to understand and use them
has meant that the second phase of the project still seems elusive. I'm not
sure about the degree to which we've addressed the implications of our
specific projects in these terms, or in terms of their relevance to teacher
education. I suspect a more interventionist and explicit role needed to be
given to these two aspects in the early stages of the project – both in the
planning and in execution. I have found it difficult to have to write/speak
about ideas and promises I am still in the process of discovering.

The objects of the sort of collaborative introspection we initially
envisaged might include such issues as (i) the power relations and
intentions that obtain between teachers and researchers when working in

schools, (ii) the expectations and ethics involved (who wants what, who delivers what, issues of 'ownership' etc) and (iii) whether the students or the teachers are the subjects/objects of study and how explicit we are about this. For example, certain aspects of the school-based components of one study had a double agenda which was generally covert, and we are uncomfortable about this. A senior teacher who invited us to 'his' school explicitly wanted some professional development for 'his' staff, but our impression is that he did not pass this view on to them, so that they perceived the collaborative activity either as a favour they were doing for us or as simply 'going along with' what had been requested by a senior member of their staff. This is not to suggest that we were unwelcome, or that the teachers did not change eventually in their attitudes both toward us and to the project. (Close long quote)

The forum which came closest to achieving this self-examining aspect of the project was a weekly meeting of the project personnel, which we sustained for much of the year, where we discussed selected readings and each others' work. The difficulty was that in the absence of any staff release from teaching duties for research purposes it was simply too expensive in terms of time commitments when coupled with the reading and writing required.

The following reflection will suffice to conclude this chapter of our story on an appropriately ambivalent note. Though written by only one of us, it encapsulates several of the complex and conflicting understandings and emotions that all of us have experienced in the course of the project to date – senses of both achievement and frustration, and a sense that perhaps our reach did not always coincide with our grasp.

(Open long quote) This project has been very rewarding on many fronts and was a great idea. However, I'm not entirely convinced about its conception. The commonality of our starting points was somewhat nebulous. We were (I was!) never clear about what might emerge from the yoking together of a collection of projects which had in common issues of perception/ construction, challenges to the epistemological bases of their school discipline areas, questions of curriculum change and an individual case study approach.

Undoubtedly the professional development entailed for individual members of the project team has been very valuable. However, the struggle towards some definition of what we were on about, at the superordinate level, has been difficult, and has had as its corollary the likelihood that our early intentions may have been misconceived or only partially met. In terms of the distance travelled, however, and the practical outcomes in my own area, I'm very happy. The perspectives and collegiality offered in our explorations so far have been very rewarding. Who knows where it will all go? (Close long quote)

Of course, this paper is not the whole story of the NITE project. We have tried only to summarise the story so far and, in the spirit of the above reflection, to share the conviction that our aspirations were worth the

struggle of realising them incompletely:

It's like our visit to the moon
        or to that other star
I guess you go for nothing
        if you really want to go that far…
(Leonard Cohen, 'Death of a Ladies' Man')

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Acknowledgement

Note

1   This paper is not the place for an extensive literature review but the following scholars' work has been particularly generative in refining our sense of what 'narrative inquiry in teacher education' might mean: Jean Clandinin and Michael Connelly on narrative inquiry per se (Clandinin et al in press, Clandinin and Connelly 1991ab, Connelly and Clandinin 1988,1990); Kieran Egan (1988) on teaching as storytelling; Madeleine Grumet (1981, 1988) on autobiographical curriculum theorising; Frigge Haug (1987) on

collective memory-work; Hugh Munby and Tom Russell (1989) on metaphor in teachers' professional knowledge; Antoinette Oberg on reflective writing and conversation (Oberg and Blades 1990, Oberg and Artz in press); David Townsend and Richard Butt on collaborative autobiography in action research (Townsend et al 1990, Butt et al 1990); Cynthia Chambers (1990) and David G. Smith (1991) on hermeneutics and textual practice.