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TEACHING TO THINK

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ABSTRACT

Given that a devolved curriculum empowers a teacher to educate for change, and indeed encourages cross-curricular critical and creative thinking, this article offers a broad review of three current strategies for helping anyone to think critically and creatively - instruction in formal logic, training in focusing attention, and creating a community of inquiry. It concludes that the latter is the preferred mode of teaching thinking for understanding and responsibility, both in schools and in pre-service teacher education, because it captures the best balance between student engagement, the presentation of external social standards and the need for ongoing reflection on both of these and because it provides an inclusive model of inquiry which is neither closed nor relativistic.

If we are going to look for change in thinking in society we shall have to look to education to carry out its most fundamental task which is to teach thinking skills. This is more important than anything else. Education is remarkably reluctant to do this mainly because people are locked into a system which has

an extremely limited view of what thinking is about.

(de Bono, 1990: 248)

Recent proposed revisions to the K-12 curriculum have focused on a developmental model which claims to eschew a certain academic elitism of the past and move beyond a model of transmission of the cultural heritage towards a skills-based curriculum. Statements of ethos now generally focus on ensuring that school students master a broad range of skills and dispositions, including respect for others, a responsibility towards the environment and critical and creative thinking skills, and this relegates the necessary transmission of knowledge to achieve those skills to a lower position. While teaching thinking skills might not be as fundamental as de Bono claims, it is at least important in providing a way of linking acquired information to changing contexts of practice and inquiry.

There are problems with requiring a minimal set of skills, thinking or otherwise, for all school students if one is not confident that teachers already possess them. This is certainly true of language

proficiency, when often secondary teachers show themselves unable to summarise or analyse passages because they have not been given the skills to do so. While Lipman has found that the thinking skills of students do not often change beyond Grade 5, there is some evidence to suggest that teachers are often incapable of teaching critical and creative thinking and that even at primary school level, some pupils are better at it than their teachers (Pears, 1995). This paper briefly analyses some of the currently available models for helping student teachers to think more creatively and critically in the light of the need to foster the same disposition/s in their students.

To a certain extent, the model of reflective practice advocated by Schon (1983) seems a step in the right direction. It presents a challenge for students, teachers and teacher educators to identify and recognise their own beliefs about learning and effective teaching and to clarify, develop, reframe and ultimately to act on new ways of seeing within the specific context of their own practice (Beare, 1989). But even that does not work if, as with many practices of metacognition, it turns out to be a refinement of yet a further branch or form of knowledge which is imposed upon teachers and thence upon students (Haynes, 1991). The relation of what

Green (1973) called subjective and objective modes of reasoning and what we might these days term informal and formal discursive practices in student and teacher learning will be one of the pivotal foci in this discussion of how to teach thinking.

In a recent article in this journal, McLaughlin and Hanifin (1995) showed that while some pre service students were able to reflect critically on the dimensions of their teaching practice, the reflection in their writing was largely descriptive, the issues reflected upon were often technical and the reflective activity engaged in often took the form of a self dialogue which assisted the students to adapt and reconstruct their own self - image. McLaughlin and Hanifin believed that to make student teachers even more reflective they should be encouraged to reduce the dichotomy that often exists between the formal theory of course work and the reality of practice, through discussions that focused on perceived contradictions between the planned professional practices and the students' experiences, beliefs, ideals and practices. They showed that, to a certain extent, the use of spoken and written language appeared to encourage the students' disposition to engage in reflective activity. The issue of what it is that the students are reflecting on was found by these researchers to be less

important than the procedure of reflective decision making and they considered the procedure to be crucial to the students' professional development. Let us examine to what extent the same is true of encouraging thinking skills, especially for teacher educators.

INSTRUCTION IN FORMAL LOGIC

In the epigraph above Edward de Bono refers to educators being locked into a system which has an extremely limited view of what thinking is about. It is clear from his other writings that he is referring to the type of reasoning espoused by what he has called (de Bono, 1990) the Gang of Three - Socrates, Plato and Aristotle - who have bequeathed us a legacy of syllogistic and propositional logic, based on truth tables, which has come to be known as formal logic. Familiar to most first year philosophy students, and indeed to many philosophy of education students from the sixties and seventies, it is the basis of Robert Ennis's *Logic in Education*. Formal logic is usually taught by exercises with truth tables, the translation of sentences into symbolic form, instruction in symbolic notation and proof of various theorems of logic, including learning by rote de Morgan's Laws. Many teachers from my generation will remember having to cope with Copi's Introduction to Formal Logic as part of their teacher training. In the eighties, Ennis (1989) was still

claiming, in the introduction to the Cornell Critical Thinking Tests, that formal logic underpinned all informal logic and therefore was essential knowledge for those intending to become teachers.

Noddings (1995: 78-85) retains formal logic as the first of the three main analytic approaches to teaching critical thinking. Even where she would confine its teaching to a highly-talented mathematics class, she sees it being of value in introducing students to "a way of thinking that encourages carefulness and precision". That makes its value rest on an assumption of transfer of skills from one area to another, an assumption for which there is no current evidence.

Another justification for the teaching of formal logic was thought to be that it was a description of the rules by which a competent mind naturally works. That is a view largely now discredited as modernist but, as Noddings reminds us, even if it were true, would that be a reason for teaching its explicit rules? Why teach something which under normal conditions functions naturally? She takes the transfer of learning assumption one step further down by giving evidence (Noddings, 1995: 82-3) that even learning the rules of formal logic does not help one to think logically or critically, and an awareness of validity does not necessarily result in valid

conclusions being drawn. Even when Scriven (1976) says that we do not need to teach formal logic, he displays his mastery of it in his text. Many who were trained in it have fed it into their language habits and passed it on unconsciously, through their practices. Witness Ennis's (1990) defence of young children being able to learn logic at a pre-formal stage because they demonstrate it very early through understanding such statements as "If I turn on the switch, the light will go on" by turning on the switch and expecting the light to go on. Some people, on the other hand, have never mastered it and cannot be persuaded that it is of any worth. One might surmise that, far from being a natural ability, formal logic may gradually die out of our language practices if we cease to promote it in schools, as knowledge of grammatical structure seems to be doing. Would this be good or bad?

When de Bono mirrors Noddings - "We use little explicit logic in our everyday life because we have fed it into our language habits already" (1990:150) - he still believes that it is too limited to be used as the basis for teaching thinking skills. de Bono criticises the dominant place of formal logic in Western culture, based on analysis, judgement, argument and criticism (1995: 9) because:

1. *It does not adequately deal with "perception", which is by far the most important part of thinking in everyday affairs.*

2. *Argument is a poor way of exploring. It is limited because it is more concerned with winning an argument than exploring a subject and sets up unnecessary adversarial positions.*

The "boxes" derived from the past may not be adequate to deal with a changing world, which is very different from the past.

4. *Analysis is insufficient to solve all problems. There is a need to supplement it with design.*

5. *The notion that criticism is enough and that somehow useful progress will be made is absurd.*

6. *There is insufficient attention to the generative, productive, constructive and creative aspects of thinking.*

7. *The huge importance of the possibility system is largely ignored.*

Others have suggested that while the formal rules of logic provide a tether for reason, the process of formalising everyday language, of standing aside from it to look at the patterns is enough to achieve the purpose of "objective" reflection and that one does not have to

take the further step of applying the rules of formal logic . Teaching it explicitly appears to have little effect on the thinking skills we actually use (McLaren, 1988). We might agree that formal logic (that is, the valid manipulation of symbolic forms) does not appear to have much direct use for teaching teachers to think critically and creatively, but defend it simply for its use in locating and analysing the form, acknowledging that it does not, without further tools, encourage reflective practice or change practices and policies.

Others have suggested that further tools may be those of informal logic, a second analytic category of teaching thinking mentioned by Noddings and also used in many popular books for trainee teachers (Thouless, 1965: Smith). There are two main ways of defining informal logic. It may be defined as any mode of thinking that is opposed to formal logic, in which case it covers all other types of thinking, including offering opinion, daydreaming, storytelling, categorising and feeling angry, and therefore loses meaning for our purpose, because any strategy will meet some particular need but not all needs. The other usage is derivative from formal logic, more obviously practical and closely related to ordinary discourse in form but depending on formal logic for its revelation of "crooked" thinking. This

latter usage is common to Noddings (1995), a younger Ennis (1962), Govier (1985) and Schemer (1962). Thouless (1965: 170) says that his is a practical book, not a study of formal logic - "If we have a plague of flies in the house we buy flypapers and not a treatise on the zoological classification of *Musca domestica* ... The present book bears to the treatises of logicians the relationship of fly-paper to zoological classifications". Yet even he describes his thirty-eight "dishonest" tricks as "fallacies" and classifies them in accordance with the logical principles they violate. It is, to use a politically-incorrect term from Austin, a skirt word to the trouser word of formal logic: that is, in Derridean terms, formal logic is the trace which provides meaning to the notion of informal logic.

The most common fallacy of informal logic is that of *ignoratio elenchi* or irrelevance, but irrelevance is usually defined as any statement which does not lead logically to the conclusion (Govier, 1985). The assumptions of formal logic - that a statement is either true or false, that definitions must be precise, that emotional, metaphorical or vague language should be avoided, that facts are best situated in a non-contradictory set of statements - still hold. This mode of informal logic, like formal reasoning, often emphasises form

over content, and often lists as its skills functions derivative from formal logic such as "offering a well-formulated or well-organised line of reasoning, generalising, inferring, stating assumptions, offering counter examples". There has been some attempt to analyse the logical patterns in ordinary language, or contextually-based dialogue (Hamblin, 1970; Girle, 1991) in order to articulate what makes some responses more appropriate than others but little to outline a way of teaching appropriate modes of response. Most work in this area has been done under the rubric of rhetoric, especially in the United States which has been taken over by largely by the English teachers and once again, like formal logic, focuses on the kind of analysis familiar through practical criticism and textual analysis, as with the *dispositio* and *elocutio* which examine arrangement and style. It is a form of analysis which tends therefore to suffer from the same faults of limited applicability as formal logic, even where modern rhetoricians like Mason and Washington (1992: 48) supplement it with activities such as *progymnasmata* - a process of transcribing text, translating it (for instance through tense, mode, genre and person changes) to change its form while keeping the content intact, offering a precis or summary or amplifying the passage.

De Bono rejected formal logic because it was critical rather than constructive, and does not give us advice on how to proceed in any given situation. Because it operates on assumptions of truth/false distinctions and tight static definitions, he calls it rock logic, incapable of adjusting to the "flow" of everyday discourse. His strength, he claims, lies in his ability to have children, adults, business managers think laterally, more flexibly and therefore more productively. To what extent can his methods succeed better than formal logic in teaching critical and creative thinking?

TRAINING IN FOCUSING ATTENTION

De Bono is concerned to move away from the limitations of textual analysis into the open world of daily behaviours. If financial success and popularity were any indicator of success, he would have demonstrated that critical and creative thinking can be taught simply and easily through repeated practice. His recent book *Teach Yourself to Think* (1995) presents a very simple five-stage framework for thinking:

1. The TO stage: Where am I going? With what do I want to end up?
2. The LO stage: Looking at the situation. What information is available and what is needed? What are the perceptions?

3. The PO stage: generating possibilities.
Setting up alternatives and new ideas.
4. The SO stage: Choosing from among
the possibilities. Reducing the choices
to a line of action.
5. The GO stage: going ahead and putting
the thinking into action.

So how does buying his books help trainee teachers to teach themselves to think creatively and critically? Those who have read his earlier books will recognise this as yet another frame of attention-directors, like that found in the Six Thinking Hats. In this program used at primary school level and in business schools, one imaginatively selects a White Hat to seek information and facts about the situation; a Red Hat to examine feelings and intuition; a Black Hat to focus on the negative logical aspects, to exercise caution through critical thinking; a Yellow Hat to look at values and benefits; a Green Hat to seek alternatives and generate possibilities; or a Blue Hat to define the problem, offer an overview and control.

The other de Bono program picked up widely in Canada, Mexico, Ireland, South Africa, Malaysia, Singapore and Australia (and, indeed, mandatory in Venezuela) is the Cort Thinking Program, which uses the attention directors such as AGO (focusing on Aims, Goals and Objectives), PMI

(Plus, Minus and Interesting), C&S (Consequences and Sequels), FIP (First important Priorities), APC (Alternatives Possibilities and Choices) and OPV (attention to Other People's Point of View).

De Bono describes all of these as a very direct tool approach to the teaching of thinking. They are used explicitly and directly, practised on short thinking items rather than texts, building up skills, which can then be transferred to other situations. They are a formal way of directing perceptual attention in a defined direction. John Edwards at James Cook University believes that these attention-directors offer a quick and effective method of changing thought behaviour and therefore should be encouraged. I would compare it with the use of electric cattle prods to prevent severely autistic children from self-destructive behaviour - it acts as a stimulus to change past habits without necessarily reinforcing useful future strategies. Those teachers who are opposed to behaviour management on the grounds that it only deals with surface behaviour and does not affect deeper commitments and values might well ask whether this sort of training strategy will encourage teacher trainees or students to really consider different options, to reflect on their assumptions in any meaningful way.

Any use of question - begging terms such as "really" should be suspect, but the possible criticism applies to de Bono too. De Bono was trained as a doctor and, despite his claim to be open and lateral, his approach is consistent with a narrowly scientific behaviourism or a post-Quinean naturalism which assumes the brain works as a passive and fairly mechanical device. There is a major inconsistency between his promotion of attention-directing devices and his theory of mind which he has neither acknowledged nor addressed. He wrote (1969) that mind cannot be separated from brain, and that perception and processing occurs in

"a self-organising information system operated by the nerve networks in the brain. Information and the surface have their own activity and the information arranges itself as groups, sequence and patterns. The process is similar to rain falling on a landscape and organising itself into stream, tributaries and rivers".

This is still a fairly passive notion of thinking (de Bono, 1995: 38-9). The brain forms patterns from experience. Actually experience self-organises itself into patterns within the brain. We seek to fit things into the appropriate pattern. We seek to use the boxes and definitions derived from experience. We usually call this recognition, identification or

judgement. In his latest book he writes that "Computers are nothing without software. The human brain is just an excellent memory mechanism. It requires software to turn this memory mechanism into a 'thinking' mechanism". He admits (1995:39) that:

In some ways the purpose of thinking is to abolish thinking. Some people have succeeded in this. The purpose of thinking is to set up routine patterns so that we can always see the world through these routine patterns, which then tell us what to do. Thinking is no longer needed.

What is it in his books that does the thinking? Who is the "we" that he refers to? This question does not arise out of any of his attention directors, but it confronts his own horizons of reference. The de Bono training approach underlies most programs espousing metacognitive strategies -through naming and repeated practice of certain behaviours, the attention is focused on processes which are repeated often enough to become automatic. It makes de Bono's training methods largely irrelevant to those educators like myself who still believe that education is about helping children and teachers to grow as persons within a changing social context of values, and about helping them to change current practice and theories for the better. There is no place for meaning-making or

the mature reflection we call wisdom. This makes the title of de Bono's latest book, *Textbook of Wisdom*, superbly ironic. His conception of the development of wisdom has nothing to do with making choices and connections - up to 5 we ask "Why"? From 6-12 we ask "Why not?" And from 12-75 we say "Because" (de Bono, 1996: 16) . His notion of wisdom is an extremely passive one - we are wise when "our individual perceptions settle down to give us our personal view of the world" (de Bono, 1996: 3). I would argue that just as formal logic is inadequate to cater for creative and practical thinking, the attention directors are inadequate to offer capacity for critical or creative change, evaluation and deep reflection. De Bono believes that "perception" is by far the most important part of thinking in everyday affairs, and once again it is a passive conception of "perception" which is very similar to sensation (Haynes, 1978). "Perception is how the mind organises the information that is coming in from the world outside" (de Bono, 1996:28) . How does it do this? There is no mechanism which can allow for even the critical application of his own attention-directors to his own work. They function on a short-term basis to snap people out of past habits of thinking. Like the formal logicians he criticises, de Bono is locked into "a system which has an extremely

limited view of what thinking is about", a sensation model of thinking (one might even say sensationist) which does not include any capacity for the reflective reasoning considered by many to be the mark of higher-order thinking skills. f lis attention directors provide no means of accessing higher-order tools for evaluation or change of those practices, no means of the creative capacity to try out new ideas. If formal logic and attention directors each have their own value but are each insufficient to provide thinking skills to teachers, would a combination of the two suffice to improve thinking skills? Even combined, they seem to leave out the necessary engagement of the thinker. Dewey (1933) established strategies to encourage methodical thinking, and saw it as necessary to define thinking in tighter terms than the underived informal logicians did, but to move outside any tight disciplinary framework which might constrain growth. Though, like de Bono, he saw his five steps of thinking as description as much as prescription, he included personal meaning in his agenda. He saw the fourfold interest of children as making things (construction), finding out (inquiry), expressing themselves artistically and communicating (Dewey, 1900). Thinking begins with a nagging sense that something is problematic,

something is unsealed. Exploration yields a hypothesis that must be tested. Next the thinker has to devise a plan - a set of means - by which the hypothesis can be tested. In each stage of exploration, the thinker considers alternatives. What then are the competing hypotheses? What other means might be used? Then of course the plan must be enacted. The thinker undergoes the consequences of the previous decisions and evaluates the results. Careful thinkers reflect on the process. They consider whether other methods or explanations might look even better, and they also look into the future. How might what they have learned here be used in future situations? They make an attempt at generalisation. Dewey's (1916) notion of the reflex arc shows that a passive stimulus-response conception of thinking does not adequately reflect the active and purposive actions required to make sense of external stimulations.

His five-step pragmatic approach to education enabled many teachers to use his problem-solving model for the teaching of thinking which was grounded in students' experience of their real world, although many teachers made it so specifically focused on particular problems that it became more atomistic than transforming critical and creative thinking, it was nonetheless more situated in real concerns

and solutions than de Bono's attention directors. His focus on the individual learner was particularly useful for science teachers who wanted students to engage in constructing their individual theories about the world from concrete experiences. In order for those students to be able to generalise from their own experiences, they had to reflect on them and re-present their experiences into a form that would allow them to transfer the skills acquired from one problem to another. It is compatible with Piagetian constructivism but tied a little too closely to a modernist belief that the child can individually construct his own reality. From where does the child set standards for progress in thinking? By a genetically determined structure of rules, as Piaget and Chomsky would have us believe? By a Rortyan pragmatism which requires the thinking to work in social and physical world? By a stimulus-response mechanism that is the time consuming trial and error testing of consequences?

John McPeck is probably the best known critic of the notion that "critical thinking" can be generally identifiable by any of these standards. While he agrees that it is laudable to help students think critically about everyday problems, he claims (1981; 1992: 201) all such thinking manifests itself as an application of one or more of

the historically-formed disciplines. The disciplines are the fruits of critical thinking in all the problem domains of human experience, and they embody what it means to think critically. On this ground student teachers would be helped to help their students to become critical and creative thinkers, by demonstrating mastery of their subject areas themselves, by knowing and being able to defend the assumptions on which their discipline or "form of knowledge" rests. Students who learn critical and creative thinking can thereby adopt an attitude of reflective scepticism towards claims in a given field, but to criticise it, they must also have a command of the technical language of the field and the accepted criteria for its use in argumentation. This may seem reasonable for secondary school teachers, for whom a requirement of three years of university teaching in their major curriculum area and a course in basic epistemology would seem to promise some hope of mastery. However, for the generalist primary school teacher, the requirement presents something of an impossible challenge. Moreover, the presentation of disciplines as if they were the forms of knowledge seems as dated a notion as that of the formal logicians in an age of critical theory. The disciplines are a useful social tool for creating systems of thought which enable us to communicate meanings more

or less coherently but the responsible thinker will want/need to think beyond those forms.

Metacognitivists may have thought they provided a solution by having children write down and therefore reflect upon the thought-processes they had used naturally while problem-solving. Such reflection should enable them to generate either heuristic strategies, or better still, algorithms, to apply to new situations. This is not inconsistent with the reflective practitioner model of teacher training which requires the trainee teacher to reflect on his/her own assumptions and to generate new possible theories to test in future action. Many teachers have claimed that teaching any school subject well means teaching not only their accumulated content but also what underpins them, their assumptions and their epistemologies and therefore that metacognition should be a process in which training teachers become involved. But, as with problem solving, the solutions became couched in step-by-step presentations which often precluded certain outcomes, rather like the Socratic model of inquiry which presumed there was a correct structure or ideal answer at the end of the metacognitive process. How can one be metacognitively aware or reflective without a language with which to think about oneself?

Metacognition often simply pushed the issue of not being able to think for oneself one step higher up on a hierarchy of representational thought. Like any competency-based curriculum that emphasises accountability to central standards provided by products and behaviours, it can easily lose contact with the internalised values and affective dispositions of the children who are being educated. Like de Bono's attention directors, it picks up the naturalistic assumption which devalues values and rational autonomous agents and therefore cannot be viewed as an agent of change in schools or teaching. Indeed, it can be seen that both formal logic and the attention directors of de Bono or the metacognitivists operate within assumptions of a fixed order and stable structures of mind and the world which are inconsistent with a poststructuralist position which opens up experience to ongoing questioning and redefinition. If we wish to engage teachers in an ongoing process of critique and reformulation, we will need to help teachers engage in open reflection and critique without determining the answers they might arrive at.

Nick Peim (1993:38) suggests a transformation of the subject, both of English and the individual, by investigating aspects of language and

textuality through various theories of discourses, semiotics, phenomenology, psychoanalysis and reconstruction. These theories all have a potentially interrogative inflection, insofar as they may be used to question established ideas, and may propose alternative ways of looking at current powerfully-dominant ideas (including such oppositions such as masculine/ feminine, reason/madness, normal/deviant, representation/ reality, doing/ thinking). They are not merely reconstructive but can offer different models, break down established definitions and so open new spaces, ways of understanding formerly closed that can be used to change, develop and extend current teaching practices. I support his criticism (1993: 65) that current practices "have been largely founded on very restrictive models of language, models blind to their own constructedness, blind to the political effects of their institutional situation and blind to their implication in politically suspect systems of belief", but am also open to the likelihood that opening everything up to question is likely to leave teacher trainees and school children anxious and floundering. How can one remain all inclusive without denying the value of any single position?

CREATING A COMMUNITY OF INQUIRY

An alternative means of providing the necessary conceptual pegs upon which one can "hang" the reflective process, is to encourage the child to articulate the "hypothesis" for general discussion, getting feedback from both peers and teacher. This may well create more "problems" as others interpret his/her hypotheses from different values and epistemologies, but those very differences are a catalyst which provokes further thinking and the articulation of those further problems and tentative solutions creates an autonomous identity through increasing awareness of a coherent response to unsettledness (McLaren, 1993). One constructs one's identity in opposition to, or in cooperation with, the orthodox conventions, and it is only within a genuinely open community of inquiry that an identity can be formed that enables both social and individual transformation. The surrounding community, whatever its boundaries, provides the different "theories" and texts against which the child or teacher test their opinions, beliefs and values. The structure is taken on trust, as it were, and open to negotiation and experiment. The community may be one of expertise in physics or anthropology; it may be one of school; it may be one of the dominant culture in one's suburb; it may be all of these combined with a global community of humans.

In 1974, Matthew Lipman, frustrated with his inability to help university students think through the normal philosophical teaching methods, left Columbia University to work on a project which would promote communities of inquiry within the primary school. He was largely responsible for producing a series of philosophically-based novels and manuals that has become identified with the Philosophy for Children movement. He established the U.S. based Institute for the Advancement of Philosophy for Children and it has now spread to over forty countries, including Australia. Philosophy for Children consists of a series of novels and teachers manuals which have been translated and taught globally and have been endorsed by Robert Sternberg (in Baron and Sternberg, 1987) as being the most likely program to teach durable and transferable thinking skills. Lipman's *Thinking in Education* (1991) outlines the theoretical foundations in detail. In Australia, the Lipman program is being taught in all States, with possibly the most successful program operating at the Paddington Primary School in New South Wales.

Like Lipman, Splitter and Sharp (1995:117,124) begin from the Deweyan assumption that philosophy may be taken as the central methodology or armature

around which all subjects can be organised, in that it provides a model of discovery and participation that can be utilised by many different teachers for many different subjects. Using the traditional philosophical areas of logic, ethics, epistemology, aesthetics and metaphysics as their foundation, they present a taxonomy that presents the function of schools to develop skills in reasoning and inquiry, concept formation and the making of meaning, through reading, writing, questioning, speaking and listening in the usual learning areas of language and literature, the arts and religion, mathematics, science and technology, the humanities, society and environment and health and physical education. Splitter believes that the teaching of syllogistic and propositional logic is important enough a component of philosophy to be taught only by teachers trained in philosophy and as a separate key learning area in the secondary school curriculum. This is a broader structuralist model than the formal logic model because it encompasses Dewey's fourfold interests of children. There is an assumption that, by participating in a community of inquiry, the student or teacher educator can come both to construct and to know himself or herself.

This model goes beyond Dewey in assuming, as both Habermas and Lacan do, that language in use, as it is in critical and creative thinking, is essentially dialogic, that every speech act springs from previous utterances and is structured in expectation of a future response. Critical and creative thinking, being dependent on language, is neither an automatic nor formal matter - it is mainly a social one used to discover and construct our shared world and our shared selves.

This awareness of the constructive process takes us beyond the training model of de Bono and the metacognitivists and the formal methods of the logicians to make thinking a social practice into which one must be voluntarily enculturated rather than taught (Haynes, 1993). McLaughlin and Hanifin (1995) showed that reflective discussion, rather than written expression, helped students to adapt and reconstruct their own image. If, as Dewey (1900,1933) claimed, children naturally have an interest in constructing, inquiring, expressing themselves artistically and communicating, then maybe the aims of critical and creative thinking may better be met by creating a narrative and conversational style of teaching than by making philosophy a separate and

additional (K-12) key learning area as Splitter desires. To make philosophy another subject would be to run the same risk of turning it into a teacher-centred subject with all the dangers of atomism and alienation from the situation that logic, metacognition and de Bono's methods encourage.

Education, it seems, is as much about the reflective construction of self that thinking allows us to construct. How can a teacher give children back ownership of their ideas without making schools an ill-knit rag-bag of self-interested individuals? Is it (as other behaviourists would claim) that the educational ideal of an autonomous, tolerant and judicious person who has a well-thought-out ethical position is a social myth?

Much of Splitter and Sharp's book reflects on teaching practices which either encourage or discourage reasonable thinking on the part of students, and the implications of making students responsible not only to one another but for the global community, for environmental matters, for peace, for health and for tolerance. One can see that this is intended to be a liberating model for education, though Dewey probably would have used the word "democracy" more often than the authors do. It does not fit easily within a school model which limits time for classes

to forty-minute segments and requires evidence of student outcomes.

For instance (Splitter and Sharp, 1995: 6), you could tell whether you had NOT succeeded in helping a class to think critically and creatively if most students by the end of the year:

- ∞ *did not think constructively, flexibly, creatively;*
- ∞ *experienced difficulty when it came to finding reasons for their opinions or scrutinising with a critical eye their own views or the views of others;*
- ∞ *did not welcome challenges to or questioning of their opinions;*
- ∞ *failed to distinguish between knowledge and beliefs - or at least between well-grounded belief and their opinion;*
- ∞ *did not perform well in written and verbal analysis;*
- ∞ *digressed without good reasons in discussion and essays;*
- ∞ *did not display the kind of respect for others and their ideas which would allow them to challenge and accept challenge with some sense of objectivity; and*

∞ *showed little regard for consistency or for the importance of exposing hidden assumptions and values.*

However, it would be very difficult to grade a student's progress sequentially in thinking skills other than by noting the student's growth towards autonomy and authenticity, whatever that means.

McLaughlin and Hanifin (1995:43) comment that limited time for professional discussion and dialogue appeared to be a major constraint to the trainee teacher's engagement in reflective activity. The teacher must rethink traditional pedagogies. He or she is responsible for forming an ethical base by establishing trust in and respect for others through a community of inquiry and modelling the wonderment of philosophical inquiry. The openness with which the teacher considers the questions of the students is part of the entry into the philosophical mode which makes it more than any class discussion (Perrott, 1988). One can claim quite rightly that there is not time in the normal school timetables for students to engage in reflective activities either; and that is partly why students, rushed from one key learning area to another, all with disparate goals and outcomes, often feel alienated and detached from any sense of self growth or

independence. The sense of community *"offers the best hope to those who are striving for true freedom and a sense of meaning in their lives. Coming to see oneself as a person in the world is ... at the heart of the educational process. But coming to see oneself as 'one amongst the others', that is, as belonging to a community - is at the heart of becoming a person"* (Splitter and Sharp, 1995: 2423).

Influenced by Dewey and Habermas, Splitter and Sharp argue that philosophy, based on reasoning and inquiry, concept formation and meaning-making, lies at the heart of all subject areas. Philosophy is not simply thinking about thinking, for that would be too cognitively based. Metacognition is necessary but not sufficient to improve critical judgement and good practice, because cognitive psychology in general misses the essential normative component underlying character-building and reasonableness which allows children to participate in the improvement of society. So do de Bono's attention directors -there is no awareness of quality underpinning the thinking skills. They are named and enumerated for assessment. Only by ongoing evaluation within a community of inquiry which is genuinely open can schooling become less fragmented and meaningless for most students.

The *telos* of education for the community of inquiry is a philosophy which connects a student's experience and opinion with reason, but there is some disagreement in all the preceding models as to where the main emphasis should lie. Sharp adds a Nietzschean distrust of the systematic reason which de Bono might agree with. Many Australian teachers complained that the Lipman program, based on at least eight sequential novels, with accompanying teachers manuals, was too American, uninspiring, and that children came to find it tedious. Philip Cam from New South Wales has published short stories with specific themes, followed up by "attention directors". Like Tim Sprod in Tasmania, de Haan, MacColl and McCutcheon (1995a, 1995b) prefer to use existing children's books for stimulus materials as a way of tapping into children's experiences. Murriss, also tries to move outside the propositional presumptions of an analytic frame and uses pictures to begin what is almost a textual analysis in the classroom. Most Philosophy for Children teachers would want the attention directors to be more than an a priori structure imposed by the teacher and arise more naturally from cues in the children's conversations and comments and questions arising from the text. Sometimes there can be a real hiatus in the class, as the teacher dramatically shifts from

responding to the children's questions to leaping for a page of exercises from a Lipman manual. Favoured in most of the Australian texts is a form of open questions which provoke thought and imagination to allow growth of the individual, questions to which the teacher may have an answer, but it will be only one out of many: questions such as "Does my body belong to me, or do I belong to my body?", "Did we discover or invent mathematics", "Can a cat have a sense of irony?"

The model of promoting critical and creative thinking which is justified at some length in the Splitter and Sharp book, is neither teacher-led discussion, training in habits of directing attention or the rules of formal logic, nor didactic presentation of knowledge. It is a more dialectic model which respects the life-worlds of the students and allows their contributions to discussions to have similar impact on the teacher's schemata as the teacher has on theirs (Haroutunian-Gordon, 1991; Burbules, 1993). To use Ron Reed's analogy, the teacher in a community of inquiry is like the conductor of an orchestra. The children are the musicians, making the music, providing the content as they develop and refine their musical expertise. The teacher facilitates and guides, providing form to the piece or

offering philosophical direction by the provision of open questions.

Lipman is not unfamiliar with existentialism and his manual on Suki in particular, dealing with aesthetics, reveals a concern with authenticity that is very Heideggerian. But he remains committed to the need for the philosophically-trained teacher to guide children towards a community of inquiry. Michael Bonnett (1994:134), on the other hand, talks only about the procedures through which a child learns to think, and sees no need for teacher intervention. He uses Heideggerian philosophy to distinguish between calculative and poetic thinking, in two respects: their stance toward things, and the feelings and aspirations they elicit. In the first respect, he sees calculative thinking as self-purposeful and goal-oriented, analysing things into problems to be solved, turning things into defined objects which are manageable and familiar. Poetic thinking on the other hand is celebratory, openly curious, wondering, intuiting the wholeness of things and receiving them as they are, and staying with them in their inherent strangeness. Calculative reason, which seems to have a lot in common with the thinking of Aristotle and Dewey (1933), affects things, seeks control, makes statements and seeks truth as correctness. There is satisfaction as

a result of sorting things out, getting things ordered and made clear, transparent. Poetic thinking is affected by things, allows itself to be vulnerable, "sings" or "says" what it is and seeks truth as revealing, or alethia.

Bonnett (1994:192-3) concludes his book thus:

The development of thinking in its deepest and fullest sense will indeed involve initiation into the essence of the human condition in the way advocated by existentialism ... fully-fledged authentic thinking is not egocentric, but acknowledges the negation which pervades whole-hearted human involvement. Responsibility ... is not a self-conscious deliberation, but a tacit responsibility towards a revealing relationship with the thing itself. This means a responding to what there is there in its arising from what is not, and a sense of wonder that things are. In this apprehension lies poetic thinking's sense of wholeness of the world - its intuitive sense of the ground out of which things arise and in which they are rooted, which is quite different from the discursive sense of interrelatedness conveyed through the impositions of webs of rationally constructed categories upon it.

This is the answer to the deconstructionists, logicians and

behaviourists because it incorporates literally a positive and situated response in an responding world. Heideggerian authenticity, arising from responsible personal response, requires the curriculum to be lived rather than delivered, and much of the concomitant requirement for a teacher to share problems and work towards an openness in which they are resolved gives a sense of ownership and responsibility to all involved. In eschewing pre-specified perceptions of situations and stock answers, in listening to and freely responding to the subtle nuances of particular situations, the teacher is not thoughtlessly pursuing some impractical and irrelevant ideal but "facing up to reality in a fuller sense: the quality of *these* children's thinking in *this* situation, and the potential mystery and many-sidedness of the things and relationships that comprise it" (Bonnett, 1994:188). While Lipman would not find any of the emphasis on wonder, situatedness and openness objectionable (the teachers manual for his Grade 3 book, *Kio and Gus*, is entitled "Wondering at the World"), he would, I believe want to emphasise more than Bonnett does the importance of the teacher or other social representative to provide alternative ways of opening the horizons of awareness.

To what extent is the Lipman program incompatible with the other two modes mentioned here - formal logic and attention-directing? In an unpublished masters thesis from Oxford (1994), Tasmanian teacher Tim Sprod modified Lipman's (1991) model of excellent thinking to include both interpersonal skills and the sort of procedural thinking promoted by de Bono or the metacognitivists where method is emphasised with little content or engagement with the subject. For creating a school environment where children will grow up wanting to learn, and particularly wanting to continue to think philosophically, and where they will be more open to a democratic and responsible society, there has to be some attention directed to the abstract questions which are often overlooked in the grab for the quick fix, the attention-seeking, the immediately showy. While Lipman raises perennially-engaging issues, and provides excellent philosophical training for an adult, the presentation of his texts and manuals as crutches for the *jejune* philosopher-teacher to lean on suffers in principle the same problem as the commercially-successful de Bono texts. They may, if relied on too heavily, prevent rather than encourage authentic dialogue in the classroom. Teaching thinking must be

closer to an Oakeshottian conversation which allows the children to present and re-present their own narratives of their own lives to an actively-listening teacher, who will allow the children to take responsibility for making meaning which has an empirical and social outcome (McLaren, 1993; Giroux and McLaren, 1986).

At the same time, to provide for critical thinking as well as creative thinking, there must be some frame of reference, some set of values through which the criticisms are filtered. In that respect McPeck was right - standards for "better" critical thinking cannot stand outside a frame of reference. It is an advantage for the teacher to have had philosophical training to be able to follow through students' questions with further open questions, but the structure of any one set of de Bono's attention directors might well serve the same purpose. Critical thinking is impeded if these frames are not held open, if they become exclusive of other possible frames. It is the capacity to encourage holistic questioning about the world within an ethical community and a more abstracted analysis that will mark the excellent teachers of thinking. Training in formal logic may help this, but does not seem necessary. To become excellent teachers they need to be provided with the opportunity to enter into conversation with

those who can direct their attention to the issues of life, their assumptions, the consistency of their arguments, in a context which is felt, understood and analysed. By insisting on mutually-exclusionary discourses of thinking, we would foreclose on openness which is one of the most important characteristics of a community of inquiry.

REFERENCES

- Baron, J.B. and Sternberg, R.J. (eds) (1987), *Teaching Thinking Skills: Theory And Practice*, New York: Freeman.
- Beare, H. (1989), *The Curriculum for the 1990s: A New Package or a New Spirit?* The Australian College of Education, Occasional Paper 12.
- Bonnett, M. (1994), *Children's Thinking: Promoting Understanding in the Primary School*, London: Cassell.
- Burbules, N. (1993), *Dialogue in Teaching*, New York: Teachers College Press.
- de Bono, E. (1969), *Mechanisms of Mind*, London: Jonathan Cape.
- (1990), *I Am Right You Are Wrong*, London: Viking.
- (1995), *Teach Yourself to Think*, London: Viking.

- (1996), *Textbook of Wisdom*, London: Viking.
- de Haan, C., MacColl, S. and McCutcheon, L. (1995a), *Philosophy With Kids. Books 1-3: Activities for Strengthening a Community of Inquiry*, Melbourne: Longman Australia.
- de Haan, C., MacColl, S. and McCutcheon, L. (1995b), *Philosophy With Kids: More Ideas and Activities*, Melbourne: Longman Australia.
- Dewey, J. (1900), *The School and Society*, Chicago: University of Chicago Press.
- (1933), *How We Think* (rev. ed.), Boston: Heath.
- Ennis, R. H. (1982), "A concept of critical thinking". In *Harvard Educational Review*, 32 (1), 83-111.
- (1990), "Critical thinking and subject specificity: Verification and needed research" In *Educational Researcher*, 18 (3), 4-10.
- Giroux, H. and McLaren, P. (1986), "Teacher education and the politics of engagement: The case for democratic schooling". In *Harvard Educational Review*, 56 (3), 213-238.
- Govier, T. (1985), *A Practical Study of Argument*, California: Wadsworth.
- Hamblin, C.L. (1970), *Fallacies*, London: Methuen.
- Haroutunian-Gordon, S. (1991), *Turning the Soul: Teaching Through Conversation in the High School*, Chicago: University of Chicago Press.
- Haynes, F.A. (1978), "Dissolving the jelly model: A broader look at lateral thinking". In *Education Research and Perspectives*, 4 (2).
- (1991), "Towards an archaeology of critical thinking". In *Educational Philosophy and Theory*, 23 (1), 121-140.
- (1993), "Teaching children to think for themselves". In *Creative and Critical Thinking*, 1 (1), 23-27.
- Heidegger, M. (1969), *Discourse on Thinking*, New York: Harper and Row.
- Lipman, M. and Sharp, A. (1984), *Looking for Meaning: Instructional Manual to Accompany Pixie*. Montclair, N.J.: Institute for the Advancement of Philosophy for Children (with University Press of America).
- (1986), *Wondering at the World: Instructional Manual to Accompany Kio and Gus*. Montclair, N.J.: Institute for the Advancement of Philosophy for Children (with University Press of America).
- Lipman, M. (1987), "Some thoughts on the foundations of reflective education". In

- Baron and Sternberg, *Teaching Thinking Skills: Theory And Practice*, New York: Freeman, 151 -161.
- Lipman, M. (1988), *Philosophy goes to School*, Philadelphia: Temple University Press.
- (1991), *Thinking in Education*, New York: Cambridge University Press.
- Mason, J. and Washington, P. (1992), *The Future of Thinking*, London: Routledge.
- Matthew. G. (1980), *Philosophy and the Young Child*, Cambridge, Mass.: Harvard University Press.
- McLaren, P. (1988), "Schooling the post modern body: Critical pedagogy and the politics of enfleshment". In *Journal of Education*, 170 (3), 58-83.
- (1993), "Border disputes: Multicultural narratives, identity formation, and critical pedagogy in post-modern America". In McLaughlin and Tierney (eds), *Naming Silence Lives: Personal Narratives and the Process of Educational Change*, New York: Routledge, 201235.
- McLaughlin, D. and Tierney, W. G. (eds) (1994), *Naming Silence Lives: Personal Narratives and the Process of Educational Change*, New York: Routledge.
- McLaughlin, D. and Hanifin, P (1995), "Reflection, rhetoric or reality: A case study in preservice teacher education". In *Australian Journal of Teacher Education*, 20 (1), 36-44.
- McPeck, J. (1981), *Critical Thinking and Education*, Oxford: Martin Robertson.
- (1992), "Thoughts on subject specificity", In Norris (ed.), *The Generalizability of Critical Thinking*, New York: Teachers College Press, 198-206.
- Morris, M. (1992), *Teaching Philosophy with Picture Books*, London: Infonet.
- Noddings, N. (1995), *Philosophy of Education*, Colorado: Westview Press.
- Norris, S. R. (ed.) (1992), *The Generalizability of Critical Thinking*, New York: Teachers College Press.
- Paul, Richard. (1990), *Critical Thinking: What Every Person Needs to Survive in a Rapidly Changing World*, Rohnert Park: Calif.: Centre for Critical Thinking and Moral Critique.
- Pears, G. (1994), *Critical thinking skills in schools*. Unpublished PhD dissertation, Curtin University of Technology.
- Peim, N. (1993), *Critical Theory and the English Teacher: Transforming the Subject*, London and New York: Routledge.