
Valuing the Situation: A Referential Outcome for Top-level Structurers

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Readers who attempt to process a text at various levels of critical thinking and memory, and to identify or create its key information, are halfway there in terms of acting on such intention. They also need to know what to do. It has been suggested from previous studies that one way to get both intentions and skill together and working well in terms of academic and workplace performance goals is by "top-level structuring." This strategy is a procedural action aimed at highlighting or fabricating the key element of structure when presenting or encountering an array of information, and using that key element (its "top-level structure") to transfer or transact what's important, what's eye-catching, what screams for attention. Some people do this naturally. Others have learned to do it following deliberate interventions. In either case, those who top-level structure appear to be great communicators—better at being smart, literate, lyrical, coherent, attentive and interpretative than they were before, or than those who do not yet have the strategy. Students who do it write better assignments and find textbooks friendlier than they had previously. Managers who do it become more communicative and believe their management style and its outcomes to be more effective. University students who do it have higher GPAs and are seen by themselves and others as smarter. In this presentation, an account is given of some of the top-level structuring terrain that has raised, tested, and supported the proposition of its effectiveness as an organisational strategy—across ages from early years to late seventies and eighties. A story using "theory of mind" will be spun to explain and predict its action.

Introduction

In studying human memory, educators have found particular purchase when literatures project applications for familiar tasks, such as teaching how to read enjoyably and productively, or to write effectively. One such literature centers on the research of Bonnie Meyer (e.g., Meyer, 1971; Meyer, Young, & Bartlett, 1989; Meyer, Middlemiss, Theodorou, Brezinski, McDougall, & Bartlett, 2002) who proposed that ideas in prose may be unitised and understood as relatively important by observing the frequency with which they interrelate and the ways that interrelating happens. Inherent in this proposition is that there is a logical structure to any piece of writing, and that this structure is what gives text its texture or fluency.

This is not a new notion for linguists; nor was it forty years ago when Meyer began her work. She had borrowed heavily from theorists such as Grimes (1975) and Frederiksen (1977). However, Meyer's focus was memory and she (Meyer, 1971, 1975) had observed that the frequency with which a writer's ideas interrelated and the position at which they appeared in the logical structure of text passages predicted their relative memorability.

Typically, a text's logical structure looks something like a trunk, branches, and twigs of a pine tree. It provides the infrastructure upon which the writer's ideas fit like leaves to provide a shaped content. To shift the simile to metaphor, a combination of ideas and relations grows hierarchically as the writer builds a healthy or coherent tree, and as readers deconstruct or reconstruct that experience in the acts of comprehending and remembering. The idea to which all others are interrelated is at the pine tree's top with the others fanned out below it on branches and twigs reflecting their relative contributions to the sense of the main idea and to the overall meaning of the text. Ideas located high in a structure are those that are more interrelated and more supportive of the main idea. They are also more likely to be retrieved. Those at the bottom are least interrelated and are not greatly supportive. They are the details of small sections of the text and in normal circumstances are least likely to be remembered.

The combination of ideas and relations at the high end of the structure provides a scaffolded entity of key information. Meyer called this cluster a text's "top-level structure." It is a rhetorical relation that formats the interrelated content into such structures as a description, or list, or a comparison. If one accepts that the cluster of ideas to which all others are most related, along with the particular organisational format that binds them together, represents a writer's main message, then getting to find "top-level structure" is important for those who want to capture the writer's point. Successful readers do this. At a literal level, successful comprehension may be explained by it.

As top-level structurers, readers gather information from text with strategic knowledge that texts are organised in predictable ways. There is a finite number of possible organisations (Meyer et al., 2002). I have said elsewhere (Bartlett, 1978, 2002) that this knowledge helps them to search out and use evidence of an author's pattern of interrelations among and including content elements at its macrolevel—hence the term, "top-level structure." Having made the match, learners then are able to construct main idea by dressing the selected plan with content that may occur at different points throughout the text, but which explains how the plan "works." For example, if a comparison organisation is identified, the main idea will be a statement of what is being compared. If the organisation is causal, the main idea will be a statement of what is causing what. Similarly, a problem and solution organisation will generate a description of what is problematic and what ideas surround a solution, and a list structure will build into a statement that the main idea is a list of the topic's elements. The fifth possibility is a messy or disjointed organisation, where the lack of cohesion in the writer's text requires readers to impose one of their own.

Meyer described this beneficial effect for university students' memory performances (Meyer, 1975). Specifically, those who reproduced the top-level structure of test passages during recall, retrieved more total ideas, more main ideas and more details - and they remembered them longer. In comparison, those who had not recalled the key, top-level structured information performed poorly. The former group not only appeared to better understand an author's message through their command of the gist of a text, but also was better performed in remembering information at various levels of supportive detail. She also observed (Meyer & Freedle, 1984) a bonus effect for reader-rememberers when ideas at the top level of a logical structure are organised as a comparison rather than as

any of three other commonly occurring structural systems (lists, problem-solution organisation, or causation). Significantly, she (Meyer, Brandt and Bluth, 1980) had been able to test various predictors of reading comprehension and memory, concluding that performance in reproducing the top-level structure from a text was more powerful than such alternatives as measured reading comprehension ability, vocabulary level, gender, or reading age.

These findings raised a number of exciting possibilities for me as an educator and researcher. First, I wondered whether those who did not remember and comprehend in ways that Meyer had discovered, could be taught to do so. If they could, would the learned procedure stick, and would it provide benefits of the same order as Meyer had found with those who used it naturally? Second, I wondered if natural users knew what they were on to—whether the way that they had retold information from stories to mums and dads, and from texts to teachers and professors, managers and workers was a consciously strategic action, and whether they could describe what they did. Further, I thought about what might happen if they became more aware and communicative about their strategic behaviour, particularly whether there might be some incremental advantage in a more savvy application of top-level structuring. Third, I wondered at what age such a strategy might be acquired if educators like me decided not to wait for it to happen of its own accord. Finally, I questioned my existing notions of intelligence and learning potential. I had watched as children in my home country were streamed into schools for special education on the basis of an intelligence test scores and various measures of achievement in standard areas of literacy and numeracy. I had participated in this practice. I now wondered how different the scores and schooling may have been if only some of these children had known early about top-level structure and how to look-out for it as a communication tool. Our system was still 20 years away from its evolution into an inclusive education institution of the mid-1990s (Bartlett & Power, 1997; Power & Bartlett, 1999), and from a considered application of school-wide positive behavioural support such as Jacki Anderson (2003) theorises elsewhere in this publication.

Bonnie Meyer became my doctoral supervisor and lifelong mentor and my research pathway to answering these questions began in Arizona, USA, a quarter of a century ago.

Question 1: Can non-strategists be taught to be strategic?

I addressed the first of the questions as my doctoral dissertation (Bartlett, 1978). This research showed that those who were not "natural users" of top-level structure when recalling text could be taught to know and use the strategy. High schoolers following an intensive, hands-on instructional encounter operated on newly-constructed knowledge of text to become hardy and effective "top-level structurers."

As Year 9 students, subjects in the dissertation study came to learn about what was happening as they bound ideas as spoken and written messages. They also formed opinions on how and with what effect others did the same thing. I had demonstrated how in some model texts that I had provided, message was more deliberately signalled than in others. We checked what meanings they saw in such texts against criteria for forming meanings. Few knew of any such criteria. Increasingly, they adopted critical stances, describing some of my texts as badly-organised, acknowledging others as

coherent and well-structured for readers. They brought along their own texts, and we analysed them together, checking different relations amongst ideas and on how different words, or format features such as bullets and numbering, signalled different top-level structures. We built our criteria for making and giving meaning.

We had used environmental texts such as advertisements and brochures as well as extracts from fiction and from classroom textbooks. I modelled the construction of new texts as we drafted responses to homework and classroom tasks. The students practiced with increasingly longer pieces of writing and varied the use of signals that telegraphed to their readers what organisational scheme they had used at the top-level structure of their writing. We designed ways that students could test whether the strategy made any difference to their memory, comprehension and composing, and under what conditions it was most effective. I had built retrieval loops deliberately into the sequence of lessons to support those who needed additional or different scaffolding to master the reception role (as readers and viewers) and production role (as writers and speakers) of strategist. We also talked lots about the goals and process we were using for teaching/learning and provided feedback and reinforcement for each other throughout. For me, the feedback pointed to strengths and weaknesses in my preprogrammed planning and to where immediate and future effort was needed as instructor.

Knowing about textual features was important, but knowing how to use such knowledge deliberately was a key target of instruction. Across the series of lessons students had learned about coherence and its structural signals from writer and reader perspectives. They now moulded this knowledge into a special stepwise plan for reading and reproducing text.

So, the mind plan underpinning strategic action began with knowledge of top-level structure as a construct. It moved to searching for a known structural form by checking an author's text and its signals, or applying one in the case of encountering muddled or ambiguously organised text. Next, readers "dressed" the structure they had found with ideas from the text, and then restated the text beginning with its top-level structure. In terms of the earlier metaphor, they were now able to recognise the infrastructure in others' "pine trees", and to grow and shape their own. Reading and recalling had become a matter of locating top-level structure and using it to roll-out remembered ideas in an organised way. In composing and writing, the plan changed to accommodate an imposition of well signalled top-level structure as the critical starting step.

We called the implementation of this mind plan, "top-level structuring." Students knew that by first thinking to top-level structure and then acting planfully on that thought, they were being deliberately strategic. Part of their education had been to test for themselves the effects of using the strategy. They had found that it increased what they remembered and the time that they could recall it, and that it made for better writing. They also did this with talk, looking at how an oral presentation would be more organised and effective with a deliberate an audible top-level structure. So, they knew at the point of implementation as speaker, listener, writer or reader that their action was highly likely to be beneficial.

Tests before the intervention, immediately after and again three weeks later, were free-recalls of texts specially matched on difficulty-levels, type of top-level structure,

number of words, readability and interest. Additionally, alternative passages were counterbalanced across students and testing times, and results assessed against those for the control classes where I had taught punctuation across the same period of instruction.

About 40% of the high-schoolers across the sample had used top-level structure when they recalled a pre-test passage. This is shown in distributions across Strategic Level 1 (being able to tell us accurately what structure they had used strategically) and Level 2 (not being able to tell us) in Table 1 below. The majority gave no indication at all of the strategy in their recall or its description (Level 3). This compared with the 60% of university freshmen whom Meyer (1975) had reported as strategic, and was consistent across four classes of Year 9 students. The relative distribution was similar for all four classes on the pretest and remained constant on posttests for the two classes that constituted the control condition for the research. Interestingly, though the distributions were consistent for the control group, there were considerable shifts in who performed at each level. This suggests instability in production of strategic behaviour amongst those I have previously called "natural users" (those operating at Levels 1 or 2).

The situation was significantly different for those instructed in top-level structuring. After the intervention, 89% used the strategy as shown in Table 1. This was statistically significant and membership at Levels 1 and 2 was relatively stable.

Table 1

Distribution of strategy use in the free recall performances of Year 9 students across three tests

STRATEGIC PERFORMANCE LEVEL	PRETEST		IMMEDIATE POSTTEST		DELAYED POSTTEST	
	Experimental	Control	Experimental	Control	Experimental	Control
	5	6	40	4	35	4
	17	18	7	19	5	17
	31	25	6	26	13	28

Importantly, those who had received and responded so positively to strategy instruction now remembered twice as much as controls (Table 2), and more than they themselves had done before using the strategy, particularly of idea units constituting the gist content.

Table 2

Free recall performances of Year 9 students across three tests

PRETEST		IMMEDIATE POSTTEST		DELAYED POSTTEST	
Experimental	Control	Experimental	Control	Experimental	Control
Mean (s.d.)	Mean (s.d.)	Mean (s.d.)	Mean (s.d.)	Mean (s.d.)	Mean (s.d.)
24.4 (13.8)	25.4 (16.6)	57.8 (24.2)	30.2 (19.5)	51.8 (24.0)	30.0 (17.0)

Thus, "educated" strategists retained both top-level structuring as a strategy, and its memory benefits in the longer-term. Multivariate analysis of difference in recalling idea

units across the testing times indicated no within-treatment differences for classes, and statistically-significant, between-group differences that favoured the strategy-instruction group. The learning had stuck. Significant numbers of Year 9 students were now strategic. They were remembering much more than they had done previously, and reconstructing main idea in terms of the highest placed information in the logical structure of texts they read. Most accurately described the type of structure they had used to strategically organise their performances.

The effect of putting into action a procedural knowledge about idea-organisation in text was dramatic. New top-level structurers remembered at least as much as natural users had on the pretest. Even natural users amongst them improved how much they recalled, perhaps because of the new awareness and control they had as strategists. Each of these effects was stable across the immediate and delayed posttests—and with broader consequences as indicated months later from the teacher/Yearmaster at the school:

... My subjective opinion is that the strategies taught had definite carryover into the next unit of study and ultimately throughout the first quarter as those classes taught the strategy had higher class grade averages than those who did not (Leavenworth Wheeler III, November 1978, Note 1).

The relative GPA data for the groups prior to the instruction had been: Experimental (*Mean* = 2.15; *s.d.* = .67); Control (*Mean* = 2.45; *s.d.* = .80). Furthermore, and in relation to the longevity of students' learning and operation of strategic knowledge, he wrote:

I might add that I have asked, on occasion, for students in the classes having received the specialized training to identify how a paragraph is constructed. I have never found them unable to answer. Conversely, in classes that did not receive the training the performance was sketchy and their attitude was uncertain.

Within a short time replications (Bartlett, 1981; Bartlett, Turner, & Mathams, 1980; Blohm & Colwell, 1983; Brooks & Dansereau, 1983; Hiebert, Englert, & Brennan, 1983; Hoskins, 1983; Meyer, Young, & Bartlett, 1989, Meyer et al., 2002) had confirmed that the strategy could be learned by non-users (those originally at Level 3), and level and productivity of use improved for apparent users (Levels 1 and 2). The following appeared as part of an open letter in the *Journal of Reading* to a hypothetical high-school teacher:

We should be teaching more students to use top-level text structure (Shannon, 1985, p. 429).

The first question had been answered in 1978—for the first of many times, anyway. Furthermore, the associated research had provided insights into ways that the second and third questions might be approached.

Question 2: Do those who use the strategy naturally know what they are on to?

People who are planful are often described as "strategic" (Pintrich, 1995; Zimmerman, 1986); to have a plan suggests there will be action that is planful and productive. Stephen Elliott (2003) writes of strong association between academic enabling behaviours and students' development and learning. Particularly, Elliott observed that study skills ("behaviors or strategies that facilitate the processing of new material and generally have been viewed as prerequisites for learning"; see p. 11) have a

demonstrable effect on academic performance in middle and high school, if not at kindergarten through Year 2 levels. Why not younger children? It seemed from the dissertation research (Bartlett, 1978) that some who appear to be strategic may not always be planful, and a critical distinction loomed in my question between "real" and "apparent" strategists.

Opportunity in the thesis research to track "natural users (of top-level structure)" in the control classes across three test occasions had shown irregularity in who produced the strategy. The conclusion was that some did, sometimes—an inefficiency that Flavell (1979) had described when theorising strategy development, generally. Yet, there was no parallel inefficiency with those who had learned to be planful with their knowledge. The new strategists had proven to be consistent in producing the target strategy, and were able to internalise and recount a procedure for their applications. This suggests that to be genuinely strategic, people need to be "planful" about more than mastering declarative features of their knowledge or study skill.

There are plans, and there are plans, and few of the "natural users" in Meyer's early work and in my dissertation research were able to describe the organisation in the text they had read and recalled. If they had intuited the structural treetop from which the text drew its coherence and used this knowledge deliberately, most had been unable to give their action even the most rudimentary description. Argyris and Schon (1974) warned that people may have quite different mind plans for saying what they do/will do and what they actually do. Notably, we often are unaware that we have mind plans, that they underpin our espousals and actions, and that there are, or may be, differences between the two. I have found this a useful distinction. I suspect that "apparent" strategists either need greater connectedness between mind plans for espoused theories of what they do and for usage theories that show when they actually do it, or, that they need greater consciousness of the distinctions. "Real" strategists have both.

The "theories of mind" argument as it applies to top-level structuring is that a strategic plan that incorporates a knowing and deliberate sense of what to do when remembering or composing, and a capacity to communicate this, is a theory-in-use. If a top-level structurer says what she/he will do and does what is said, the connected mind plans will be more efficient and serviceable as a theory-being-used than as either an espousal plan or an action plan alone. As a student, the strategist will be more able to interact with a teacher about how she/he chose a main idea and remembered and/or composed. S/he will be less likely to mislead self, teacher, and others in his/her educational contexts with deliberate or accidental notions of practice and capability. The strategist also will be better positioned to self-regulate in various roles that successful readers and writers fill, and more likely to integrate successfully into the school environment as Leavenworth Wheeler III's statements above suggest.

What allows a strategist to be effective is well documented in the literature (see for example Almasi, 2003; Garner, 1990; Pressley, Borkowski, & Schneider, 1989; Raphael & Kirschner, 1985; Zimmerman, 1986) and these characteristics indicate what content should be part of a workable theory-in-use. Strategists typically have an appropriate knowledge base about the strategy and its potential benefits. They also have a capacity to be metacognitive about being strategic and what that means for achievement, satisfaction

and enjoyment. They are skilled in recognising when and how to apply an appropriate strategy in a presenting situation, and have appropriate language to communicate the content and procedure underpinning their strategic action. They have a theory-in-use that combines mind plans for what they say and for what they do.

The inconsistency in production of top-level structuring shown by many natural users in our studies (Bartlett, 1978; Bartlett, et al., 1980; Meyer et al., 2002; Meyer, Young, & Bartlett, 1993) indicates that they did not yet have an effective theory-in-use. When they received and responded to instruction, they became not only more consistent in producing the strategy, but also better performed in their retrieval (Bartlett, 1978; Meyer et al., 2002). It appears that prior to developing a working and communicable knowledge about their strategy many of them did not know what they were on to. They had the "know-what." Education provided the "know-how." It helped again with youngsters (Bartlett et al., 1980) and seniors (Meyer, et al., 2002; Meyer & Poon, 2001). It assisted high-schoolers (Bartlett, Lapa, Wilson, & Fell, 1998; Bartlett, Liyanage, Jones, Penridge, & McKay, 2002) and university students (Bartlett & Fletcher, 1997, 2001; Meyer et al., 1993, 1989). And, it worked with television newsreaders and advertising copywriters, and Queensland Rail's training staff, managers, and track workers (Bartlett, Roberts, & O'Rourke, 1996)—as Shannon, 1985 had suggested it would.

The final word on the question belongs to a teacher who sent the following e-mail to me just before I left as part of a team to deliver the President's Invited Address on literacy at the Year 2002 conference of the American Educational Research Association:

Dear Brendan

He opened with an introductory phrase, sensitizing his audience to the significance of this award—to him now and for the future. Then he listed the factors that had lead him to this prestigious position. "Firstly", he said.... "Secondly", he continued.... "Finally", he stated ... then concluded his acceptance with a summary sentence that gathered all his thanks together in one simple statement of appreciation.

Oh the bells rang and the chorus chimed! A superb speech! Top level structure at its most functional level. A speaker who knew purpose and appropriate language—and who understood the context—including the fact that this was TV and the last thing he needed was his special words cut short by an ad break. 'Who taught this boy English?' I yelled, fists punching the air.

Lyndell Town.

Lyndell's reaction (Town, Note 2) was to a national TV coverage of a young man's Australian sporting award the previous night. He had just received the honour as the country's top rising cricketer and went on to selection in the national team. He had been in Lyndell's Year 10 class 5 years earlier, a class where several teenagers were nervous about public speaking, writing generally, and academic writing particularly, and unpracticed in building frameworks to guide their thinking and presentations. Her position on the question is clear.

Question 3: At what age might the strategy be acquired?

Studies generally have shown that age and efficiency and effectiveness as a strategist are strongly related. For example, young adults (18–32 years) tend to remember more from

their reading than older adults (62 years and older), though there are important mitigating factors related to verbal ability and practice that appear to affect usage of strategies such as top-level structuring (Meyer & Rice, 1985, 1988; Meyer, Young, & Bartlett, 1989).

There are developmental trends with children that suggest students as young as 6-7 years (Year 2) are able to learn and use top-level structuring (Baumann, 1981). Recently, Carole Park State School included it in its School Literacy Policy as a targeted skill from preschool through to Year 7 levels. The preschool teacher (Champion, Note 3) informed me that her young students use the four major forms of structure easily and well to organise their observations and talk. They set up lists of items and characteristics of given topics that are then transcribed by herself and teacher-aides and placed around the Centre as exhibited work. They compare features, look for relations between problems and solutions, causes and consequences. Moreover, they talk about what they have done in getting their thoughts together organisationally. These activities are grouped under a heading of "Cognitive Development" in the Preschool's curriculum document. In interesting ways the children appear to be developing strategic cognitive skills that show in their oral language when accounting for their research, and when reflecting on choices in processes such as "making a list", "making a comparison", or "finding an answer for the question." The teacher is guiding them to develop knowledge of top-level structuring through investigating the natural ways in which they are using it. Furthermore, their learning includes capacity for metacognitive growth in the scaffolded exercises. The children describe the plans behind their applications, and the successes they have in recognising when and how to apply the strategy in a presenting situation. Importantly, they "talk the talk" of strategic action when communicating their command of topic content after "walking the walk" of being strategic.

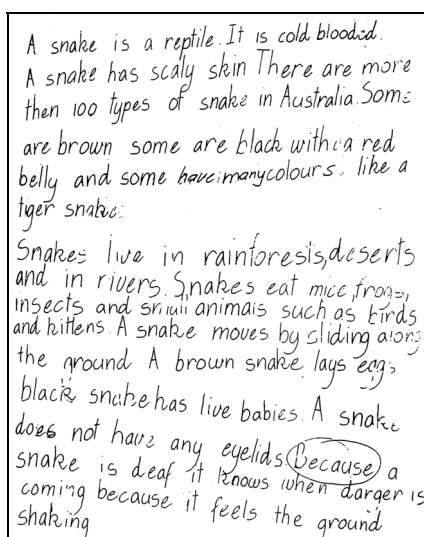
Empirically, the evidence with young children as readers and writers has indicated that 10-year old students can learn to do this. About 15% of Year 5 children are natural users and 40% (Bartlett, et al., 1980) readily adapt their autobiographic experiences and knowledge during instruction to incorporate the deeper knowledge of top-level structuring that "real strategists" use. Instruction again was associated with statistically significant increases in what and how much information children in this study remembered in free recall tasks.

The immediate effects on greater strategy use and better memory were retained in a further test three weeks later. Significantly, when the children were tracked at the end of their first high-school year (Year 8), we (Bartlett & Turner, 1985) found most were still using the strategy, could still describe their strategic action when top-level structuring, were academically successful, and reported positively on its effects on their school achievement.

But, could this happen with younger children? Teachers in Australia and the US have sent to me some of the work their students have produced using top-level structuring. These data generally support Baumann's (1981) contention that younger children will respond positively to instruction. The following are from North Queensland where a Year 3 teacher had encountered "one of those years." It was a year in which she had observed across students in her class unusually poor levels of writing performance and general reluctance to write. In mid-Term 1 she had decided tactically to focus her literacy

program and instruction for the remainder of the year on helping students to top-level structure. The texts below were produced as first drafts after sessions on the topic, "Animals." Students were required to write about one of several types the class had researched. They had set up mind-maps to organise the collection and preparation of content, and then drafted - having experimented with the four common structures to use when writing and after making a conscious choice on one of them.

The first shows a lengthy composition in a list format. The child reportedly had plenty of fun and enjoyed producing such a quantity of work. The teacher was pleased about that, too. Her circle around the child's signal word ("Because") indicates where she intended going next in working with the child to play with alternative formats and to write for different purposes.



A snake is a reptile. It is cold blooded.
 A snake has scaly skin. There are more
 then 100 types of snake in Australia. Some
 are brown some are black with a red
 belly and some have many colours like a
 tiger snake.
 Snakes live in rainforests, deserts
 and in rivers. Snakes eat mice, frogs,
 insects and small animals such as birds
 and kittens. A snake moves by sliding along
 the ground. A brown snake lays eggs.
 black snake has live babies. A snake
 does not have any eyelids. (Because) a
 snake is deaf it knows when danger is
 coming because it feels the ground
 shaking.

Figure 1.

Child Text 1: Snakes (Dick).

The second is from a classmate who demonstrates her theory-being-used to mix and match information on "Reptiles" against a list-comparison hybrid structure. Her affective involvement with the content is obvious (and infectious for me) and the teacher reported that Melanie felt she liked the way she had said all the important things people needed to know about "Snakes." The teacher loved Melanie's work.

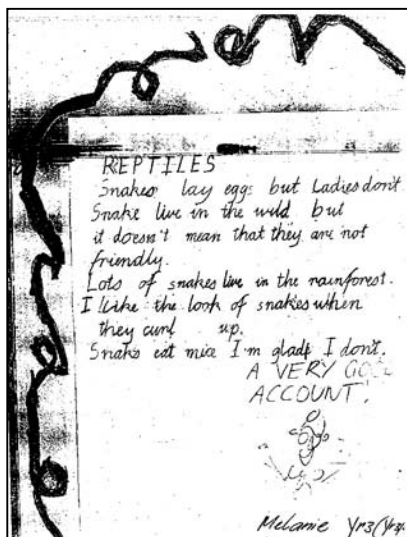


Figure 2.
Child Text 2: Reptiles (Melanie).

The following analysis of Melanie's text indicates the ways in which she has composed her ideas against the list-comparison top-level structure (see Figure 3). The teacher adapted the diagram and used it in stimulating reflection and recall from Melanie about the preparation and composition elements of her story, what made her smile when she reread it, what other readers had enjoyed most and why she thought this was so, and to springboard future work.

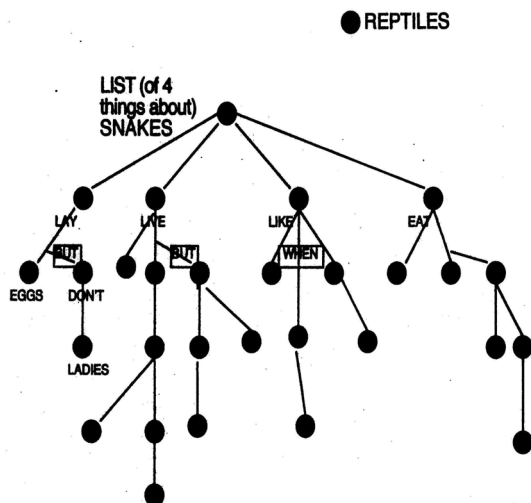


Figure 3.

Melanie's text analyzed into levels of content and relations:
Four clusters indicated and one shown in full.

The third is from a boy whose 3-year struggle with composing text was ongoing. But now it was accompanied by greater willingness to write according to the teacher. His use of a list format and of a capacity to import content from charts and texts available around him had resulted in an informed and informing text about kangaroos. The teacher was elated.

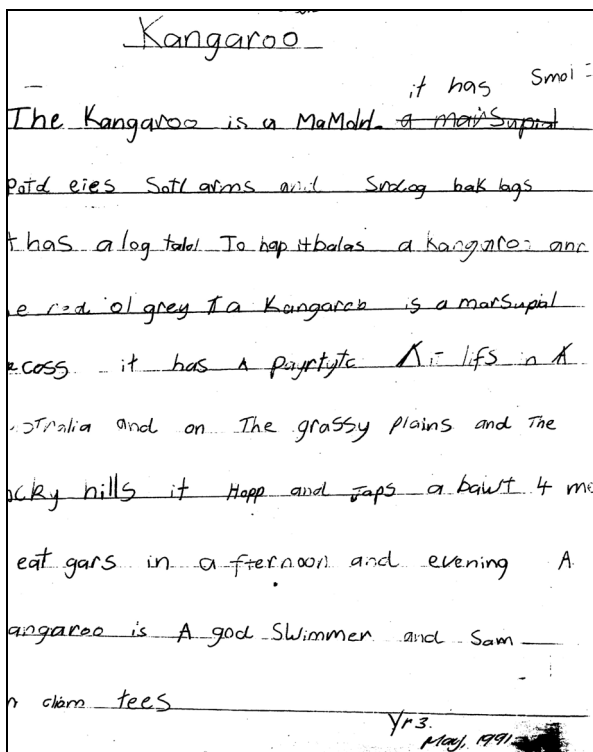


Figure 4.

Child Text 3: Kangaroo (Simon).

The last shows some work in progress with Year 2 children early in a school year at a Brisbane school. It is interesting to see how the two children have used the teacher's scaffold differently in relation to their organisation of factual content. Kate has a comparison of lists where sequences of data on each of the two items are fairly exhaustive. She has used the geography of the page to signal comparison. Rebecca has organised her content as a list of comparisons where the content items are fewer than Kate's and the signalling is linguistic—wonderfully so.

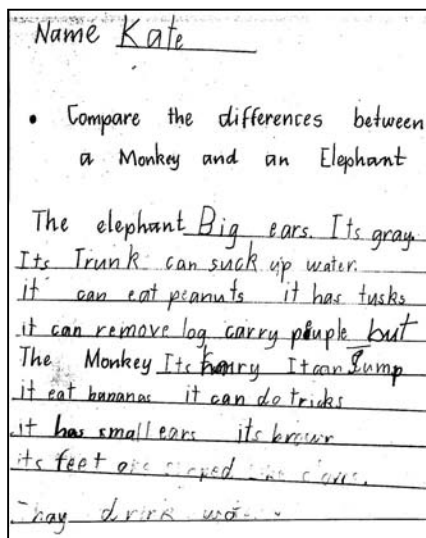


Figure 5.

Child Text 4: Monkey and Elephant (Kate).

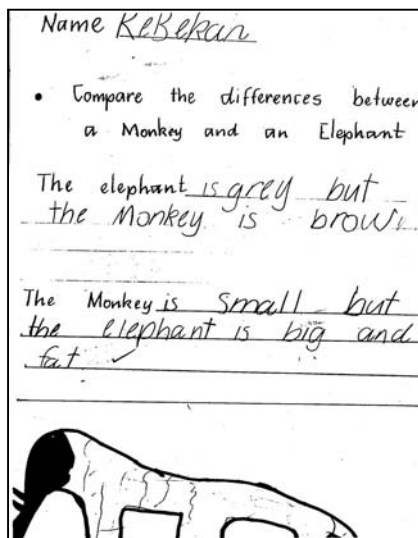


Figure 6.

Child Text 5: Monkey and Elephant (Rebecca).

These samples show a strategic savvy beginning to grow as the two teachers have worked deliberately with young children—a growth for teachers and children, I suspect. They help me to continue to reimagine my responses to all four questions. In relation to the third one, I am now very confident that procedural know-how is important for a child's productive acquisition of the strategy along with declarative information about literacy and its personal uses and challenges. For about 15% of Year 5 children, this seems to happen naturally (Bartlett et al., 1980). Their experience and success as text-users has provided capacity to top-level structure, albeit there may be inconsistencies and inefficiencies in their production and use of the strategy. However, as shown in the empirical work, it is reasonable to move deliberately on its teaching. The "insider-trading" shown by Meyer's university students years ago is an advantage that can and should be readily available rather than left as an undeveloped asset for many young children. Additionally, programs and pedagogy such as those used by the preschool, North Queensland, and Brisbane teachers and others (Bartlett, 1993; Bartlett, Barton, & Turner, 1989) indicate that it might be established as part of conventional literacy-learning for much younger children.

Question 4: Are there implications for notions of intelligence and learning potential?

The final question had been prompted by thoughts from Meyer's early work that children who have unrealised capacity for strategic competence in dealing with texts might

present misleadingly negative pictures of their intelligence to themselves and others. Along with this was the liberating work of Gardner (1983, 1991, 1999), Costa (1985), DeBono (1999), and McGrath (1998) that opened new vistas for me in considering the notions of intelligence, mind and what schools might do to foster thinking. At one extreme in this emerging scenario was the possibility that some children assigned to special education settings for students with intellectual impairment on the basis of language-laden and unrealistically-focussed testing programs may be locked into an inappropriate response to their special learning needs.

To test this possibility, students at a special school in Brisbane were asked (Bartlett & Briese, 1979) to orally recall texts in pretest and two posttest situations. They were instructed about top-level structuring in much the same design as previously described for high-schoolers (Bartlett, 1987) and Year 5 children (Bartlett et al., 1980). The students then aged between 12 and 18 years (*Mean* = 14.12 years; *sd* = 1.14) and with mild intellectual impairment (recorded IQ – *Mean* = 70.3; *sd* = 8.07) had been placed in special schooling on the basis of policy in practice in 1970s. Their IQ and achievements in literacy and numeracy had been measured on standardised tests and recommendations made to parents that they shift from the mainstream. All were in senior classes of the school; the majority did not write and reading levels were low (14 scored at 7 years 4 months- 8 years 11 months on the Gap Test; 6 were above this range and 6 were below the floor level).

Many of the students were unable (or unwilling) to write. So, in a variation of testing procedure the researcher read the stimulus texts aloud while sitting alongside each subject. Their recalls were recorded and transcribed. Texts were relatively short (79, 77, and 73 words) compared with the 200-word passages used in earlier research and were organised with a heavily-signalled, comparison top-level structure. Strategic performances in recalling the texts were scored for students' top-level structuring on three levels. Level 1 was assigned where a student used the comparison framework and successfully accounted for this in a stimulated recall of the process. Level 3 was where there was no discernible use of the strategy. Level 2 was awarded where the strategy was apparent, but the student could not give an accurate account of the top-level structure used when being strategic—a tacitly systematic construction much like those of most "natural users" from other studies.

Performances shown in Table 3 below indicate the significant shift to Level 2 after instruction. However, there were neither an appreciable move to Level 1, or maintenance at that level for the one student who achieved it initially. Numbers who used top-level structure increased across the posttests, probably indicating an effect associated with their ongoing usage as part of their classroom routines. However despite such practice and teachers' reports that students were talking about their top-level structuring, no student was able to give an appropriate account of the strategy to teachers or researchers on both test occasions.

Membership at Level 2 was stable across the immediate and delayed measures. Retrieval of information also increased significantly and consistently in performances following instruction.

Table 3

Distribution of strategy use in the oral recall performances of students from a Queensland special school across three tests

STRATEGIC PERFORMANCE LEVEL	PRETEST	IMMEDIATE POSTTEST	DELAYED POSTTEST
1	0	1	0
2	0	12	16
3	26	13	9

The students reportedly made gains in other areas of performance, such as with confidence and willingness to present morning talks using top-level structure as an organising format, memory for lists and general talk about how to plan for job interviews and to participate interestingly in conversations (Bartlett & Briese, 1979). Some parents told teachers that their sons and daughters were speaking more and better at home and that they were remembering well in everyday tasks such as with shopping lists. Before the end of the year, two of the students were transferred into high school settings. However despite these interesting formal findings from our tests and anecdotal accounts of the students' applications in their language in use, this first study did not provide evidence that our teenagers had developed a lasting and aware strategic knowledge.

My colleague, Brian Briese became a strong advocate for reform of testing and placement policy for children with intellectual impairment and was instrumental in having the top-level structure strategy included in work programs for senior classes in special schools (then called "Opportunity Schools") throughout the State during the 1980s. By 1993, Jo Diessl and Jo Minchington had pushed through comprehensive changes to policy and practices in matching available special support for learners on the basis of their ascertained learning needs. Part of the ascertainment process is to determine from a wide range of people including the child who supposedly will benefit from the matching, what evidence exists of his/her strategic approaches to the everyday things that matter in his/her world.

The other extreme focussed by this third question is a possibility that some children may not be receiving appropriate recognition of their average and superior competence and potential in ways that schools are teaching. What if schools deliberately shifted emphases in teaching away from content area mastery and its demonstration to include nurturing theories-in-use? Goals of such a shift would be that children will learn through education to develop and adapt various approaches to enjoying and benefiting from life as person, social being and difference-maker. Schools that adopted such purpose would be teaching a special type of intelligence - the intelligence of practice.

Reimagining practice and researching change in this way with top-level structuring as a key focus has been attempted at Ipswich Grammar, an Australian private school (Bartlett et al., 1998) and at the Bear Creek Schools in US (Price, 2003). Further research is necessary to test the effectiveness of converting imagination to practice, and practice to good and lasting benefits for individuals, families, and society. It will need to check these conversions and their underlying constructs in the longer term and across broad

and graduate-defined "worlds of things that matter." Early follow-up from the 10-year application at Ipswich Grammar (Bartlett et al., 1998; Kearney & Bartlett, 1998) is promising. Former students have highlighted a strategy-based learning experience at the school in their positive stories about benefiting from tertiary study, from job applications and promotions, from handling challenging social interactions and from reflections on their self-satisfaction and happiness. Top-level structuring was a point of major reference in these accounts and respondents valued the situation of having a theory-to-use from the schooling they had received.

The major academic effect of a successful take-up of top-level structuring as a learning strategy is that it improves students' abilities to "(analyse and use) text structure to abstract main ideas" (Pressley & McCormick 1995, p. 480). Similarly, improvement in writing skills for those taught to be top-level indicates its generative attraction (Bartlett & Fletcher, 1997, 2000; Gordon, 1990; Hammann & Stevens, 2001; Meyer, 1982). However, it is important at this point of reimagination to consider that it is not only written and spoken texts where people form perceptions, opinions, reactions and communications. An analysis of a mother's face, of an artwork, of a kiss a dance and a pumpkin are all presenting encounters where meanings and response are part of what normal people do, normally. A key to being extraordinary in any of these may be to strategically comprehend and compose their constituent ideas.

As you can see, I am still answering the fourth question. Thus far, I have learned more about the question than I have about its answers.

Conclusion

Working through each of the foregoing sections leads me to conclusions much like those that Diane Larsen-Freeman (2003) has drawn. Reimagining practice begins to gear up as an expensive and challenging experience once we consider moving beyond reverie to implementation. Reverie may not always be a sweet dream in the conversion as studies of change remind us. Additionally, many of us as academics in education often neither acknowledge nor confront the prospect of nightmare that practitioners may find in the changes we suggest—albeit with the rider that they need to be researched.

But teacher-practitioners are forgiving and positive people—even though such positive attributions by Australian teachers indicated earlier in the paper may not be as widespread as our researchers and theorists would prefer. Nonetheless, two generalisations set the scene for the positive spin in this conclusion.

First, there is a national awareness that theoretically-framed professional development for teachers and workplace trainers is important and worthwhile (Queensland Government, 2000; Department of Training and Industrial Relations, 1997). Since 1983, federally-funded programs have helped Australian teachers confront a range of approaches to schooling with particular emphasis on reading and writing. These include psycholinguistic, sociolinguistic, developmental, process-based, genre-linked, critical, and, resources model frameworks. Massive inservice work across the States and Territories has focussed on early literacy and its development (e.g., Early Literacy In-service Course [ELIC]), literacy across the grades (e.g., Further Literacy In-service Program [FLIP]), content-area literacy (e.g., English Language Development across the

Curriculum), workplace literacy (Workplace English Language and Literacy Program [WELL]) and on specific areas of application (e.g., programs under the National Indigenous English Literacy and Numeracy Policy, 2000).

Second, measures of what happens following such initiatives have indicated that Australian students and workers are performing well (O.E.C.D. Program for International Student Assessment [PISA], 2000; Gyngell, 2001). Data collected in the Year 2000 PISA by O.E.C.D. revealed excellent standards in relation to the O.E.C.D. mean on each of the three measures taken—Reading Literacy, Mathematical Literacy, and Scientific Literacy.

Thus the call for deliberate teaching of an influential strategy in order to centre children's development of their theories-in-use carries a requirement of large-scale determination by the workforce of its own mind theory for such centering. Professional development of the existing and imminent workforces of teachers is required so that their own mind plans for espousal and for usage are made conscious, critical, intermeshed and instrumental in the change. Finally, resources need to be found and allocated at national and state levels in Australia and elsewhere as change possibilities evolve, to the tasks of practical implementation. Let us use continuing research to lead the way in expositions of what it is our teachers and their students should learn and how this might be done.

In my paper I have reflected on decades of attempted reimagining in relation to four questions that provoked my mind plans for claiming to be an educator and working through research and practice to be what I claim. In two cases I am relatively happy with the answers I have. Two others are works very much in progress. From the sum of this experience, however, I am confident in asserting that education that remains implicit and covert in its attention to how students grow and focus their minds is staid and Dickensonian. If we believe in student-centeredness, if we see problem-based education as a way forward, then it is time to change the production lines of the last century. The tiny issue of top-level structuring as an exemplification of theory-in-use seems a sensible way to begin.

Reference notes

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2. Lyndell Town. Personal communication, February 2002.
3. Janet Champion. Personal communication, November 2003.

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