

Literacy improvement : Operationalising and contextualising a conceptual model.¹

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Literacy, the conversion of written information to knowledge, is seen as a key educational outcome. Improvement in outcomes is a challenge that confronts many educational institutions. This symposium examines improvement in three contexts: a primary school, a secondary school and an educational system.

A major reason for the difficulties institutions have in achieving acceptable literacy outcomes lies in the complexity of the literacy learning process. This symposium reports improvement in three contexts: a primary school, a secondary school and an educational system, that share a conceptual model of literacy learning and differ in how it was contextualized. It examines the model, its operationalisation in each context and the outcomes achieved.

The three contexts examined in the symposium share a common conceptual model of literacy learning. They differed in how this knowledge was contextualized. The symposium examines the model, the means by which it was operationalised in each context and the reading outcomes achieved. Difficulties achieving acceptable outcomes lie in the complexity of literacy learning.

1. The model of reading

The cognitive complexity of the activity of reading frequently limits the extent to which barriers to its acquisition can be identified. It is necessary that educators have a clear framework for

- understanding why some students do not progress in literacy learning at the rate of their peers
- diagnosing the specific cause of reading difficulties for particular readers
- recommending the most appropriate intervention for particular readers based on their approach to reading difficulties.

Contemporary models of reading acquisition have focused on how mature readers read and describe reading acquisition in terms of this. These models have generally noted that reading involves active engagement with a text and is a complex process of creating, interpreting and analysing meaning from text and then integrating three sources of information; readers recognise and use

- semantic cues in the text
- syntactic cues in the text
- graphophonic cues in the text

Luke and Freebody (1990) identify four roles that readers implement as text users

Code breaker	uses knowledge of the relationship between the spoken sounds in language and the graphic code and symbols used to represent those sounds.
Meaning maker:	uses knowledge of the meaning patterns operating in written and spoken texts
Text user:	uses knowledge of the functions of various kinds of literacy.
Text analyst:	uses knowledge of the ways texts represent different points of view

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The model of reading used to understand, diagnose and remediate reading difficulties in the present research elaborates this approach. It

- (1) describes reading knowledge as comprising
 - knowledge of written text,
 - metacognitive knowledge and
 - oral language knowledge.
- (2) sees written text knowledge as comprised of five types, that match the kinds of meaning units in written prose;
 - word,
 - sentence,
 - conceptual,
 - topic and
 - dispositional features.
- (3) sees each type of written text knowledge as comprised of :
 - a knowledge of the appropriate text units (for example, letter clusters, sentence templates);
 - relevant reading strategies for aligning text units and reader knowledge; and
 - an awareness of the value of the units and strategies at that level.

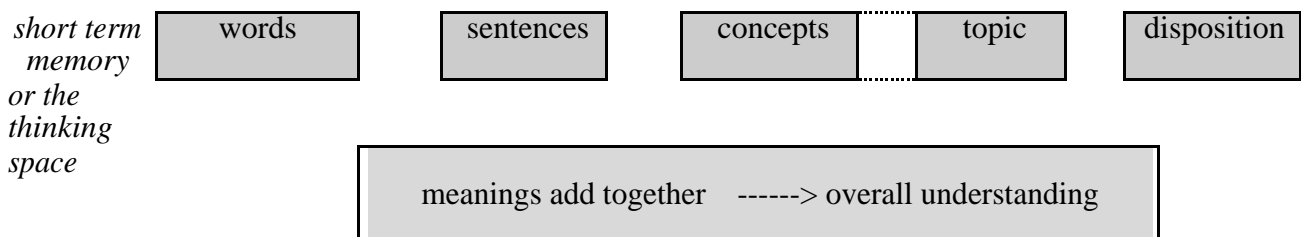
The areas of knowledge used in reading are shown in the following diagram.

Multiple levels of text processing model (MLOTP) of reading We read by processing text at a number of levels.

Levels of text	knowledge of structural text features , the 'what', conventions of writing	reading strategies, 'how to'	value of each level; reader's beliefs
word level	word bank containing 3 forms of word: how it is written, said, means, • letter clusters, rime families • types of written words • word structures	• match text word directly with stored letter cluster knowledge • convert letter clusters to sounds, blend • segment words into functional units and recode	• why reading/ working out words is useful
sentence level	• grammar to link words • sentence propositions (how meanings are linked) • punctuation, written sentence structure	• visualise, paraphrase sentence • re-read • ask questions about the ideas, • listen to ourselves as we read, • pause and consolidate	• how visualising a sentence helps reading • you can talk about the strategies you use as you read
conceptual level	'idea bank'; set of ideas linked in • networks similar to text links • episodes - contextual links • linking prose in paragraphs • paragraph propositions	• backtrack / read ahead within / across sentences to link concepts • predict, anticipate, infer ideas, feeling • what other words might be in text ? • recode imagery to words	• why it is useful / interesting to predict
topic level	• structures used to link ideas to a topic	• use title, scan or skim text, select key words to guess its general theme	• why it is useful to note the topic of text
dispositional level	• values, attitudes intended by a text	• how to detect the attitudes in a text	why you need to know attitude of writer
Self-management and control strategies			
<ul style="list-style-type: none"> • frame up reasons or purposes for reading a text, plan how they will read • monitor our reading, initiate corrective action, decide when to re-read, self-correct, how they use what they know at each level, monitor how their reading is progressing, take remedial actions if necessary and, having read, • review and self-question to see whether reading goals achieved, review or consolidate what they have read • organise the information gained from reading to fit our purposes for reading 			
Existing knowledge			
Oral language knowledge			Experiential knowledge;
<ul style="list-style-type: none"> • at word level, what words mean, how they are said, awareness of sounds in words • at sentence level, how ideas are linked into sentences, grammar. • at conceptual level, how ideas are linked into themes • at topic or theme level, how a theme is communicated in a narrative, description • at the pragmatic or dispositional level, how the social context affects how ideas are communicated, the attitudes and values of the writer towards the ideas in the text. 			<ul style="list-style-type: none"> • experiences, visual imagery knowledge • action, motor knowledge • knowledge of symbols
Sensory input to the knowledge base			Motor aspects of expressive language
Auditory input	Visual input	Touch, feeling input	Motion input

The five types of knowledge are used to process written text in a parallel or 'simultaneous' way; we use all of the levels of processing at once, or simultaneously. Comprehension at any time is a synthesis of outputs from all five types of literacy knowledge. We use what we know about

- how words are spelt, what they mean and how they are said
- grammar and how sentences are written
- how concepts are linked or go together
- topics
- the purpose of a text, the values and attitudes it assumes.

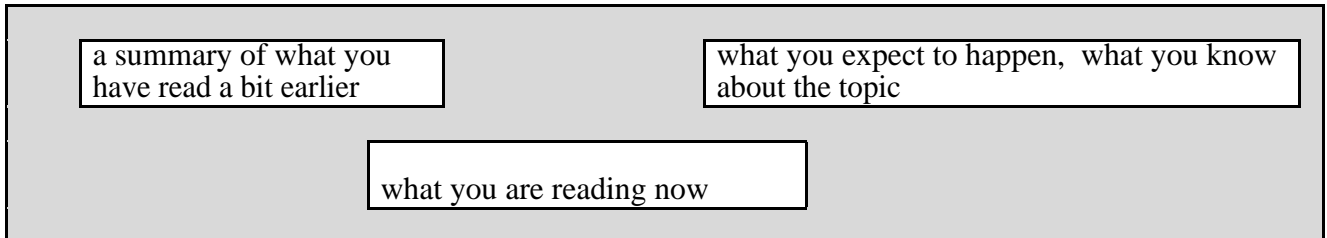


Because we are using several sources of knowledge of knowledge at once, we can recognise when the meanings suggested by different sources clash. This tells us that everything 'doesn't' add up and that we may need to re-read what we have just read.

We 'take in' the written information in two ways:

- visually (what we see) and
- phonologically (what we tell ourselves we see).

At any time while you are reading you are retaining various bits of knowledge in your working memory



Knowledge of each type is acquired developmentally.

The MLOTP model provides a framework for understanding the types /sources/cause of reading:

Level of text	knowing writing conventions, the 'what'	reading strategies, 'how to'
word level	<p>word bank has less accurate sound and /or spelling forms</p> <ul style="list-style-type: none"> • difficulty manipulating sounds in words; phonological /phonemic difficulties. • difficulty learning, storing letter clusters; difficulty with alphanumeric symbol encoding. • take longer to recall names and sounds of letters, clusters, words; slower naming speed (RAN). • don't develop an letter cluster learning capacity, use what they know about some words to read others. <p>word bank has restricted semantic encoding properties; restricted vocabulary, literal vocabulary, immature meaning networks.</p>	<ul style="list-style-type: none"> • use distinctive visual features to read words • convert each letter to a sound and blend sounds rather than letter group-sound matching. • don't make analogies between words. • don't recognise letter clusters or digraphs in words; segment letter strings into letters or inappropriate clusters
sentence level	<ul style="list-style-type: none"> • restricted, immature grammar • limited sentence propositions (how meanings are linked), punctuation, written sentence structure • restricted verbal short-term working memory , slower to recall verbal information, less likely to rehearse, chunk. 	<p>They don't</p> <ul style="list-style-type: none"> • visualise, paraphrase, re-read, question ideas, • use text structure to expect ideas before reading or organise text information while reading, • ask questions to assist them to comprehend and remember text
conceptual topic levels	differ in how they organize and use what they know : ideas in episodes / context links rather than in networks similar to text links, paragraph propositions etc.	<p>They don't</p> <ul style="list-style-type: none"> • use prior content or text structure when reading • organise text data in working memory • elaborate, infer or summarise while reading

Self-management and control strategies Students with reading disabilities are 'non strategic or passive' readers; they are less likely to direct and regulate the use of reading strategies, to

- decide when and why to use each,
- evaluate its effectiveness in terms of some goal or purpose
- monitor our reading, initiate corrective action, decide when to re-read, self-correct, how they use what they know at each level, monitor how their reading is progressing, take further strategic action if necessary.
- review and self-question to see whether reading goals achieved, review or consolidate what they have read
- organise the information gained from reading to fit our purposes for reading

Existing knowledge

<p>Oral language knowledge Disabled readers may have difficulty</p> <ul style="list-style-type: none"> • <i>at word level</i>, learning how words are said ("crinimal" for 'criminal'), less aware of sounds in words, remembering names of items, particularly RAN, poorer concept of word --> building a word bank, smaller expressive vocabularies, difficulty learning word meanings and a less developed network of word meanings (they use context but not as efficiently to induce the meanings of unfamiliar words). • <i>at sentence level</i>, reading underachievers have difficulty understanding complex grammatical forms in oral comprehension • <i>at conceptual level</i>, how ideas are linked into themes • <i>at topic or theme level</i>, how a theme is communicated in a narrative, description • <i>at the pragmatic or dispositional level</i>, how the social context affects how ideas are communicated, the attitudes and values of the writer towards the ideas in the text. 	<p>Experiential knowledge;</p> <ul style="list-style-type: none"> • experiences, visual imagery knowledge • action, motor knowledge • knowledge of symbols
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Sensory input to the knowledge base and motor aspects of expressive language

Auditory input; auditory perceptual processes for perceiving speech patterns	Visual input	Motion input	Articulatory processes; producing speech patterns
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These relationships are not clear-cut:

- some may have a 'reciprocal causal' relationship with reading.
- many of these processes are developmentally limited.

The MLOTP model provides a framework for

- evaluating the reading knowledge of individuals and groups
- identifying of specific areas of existing literacy knowledge
- identifying specific improvement areas
- implementing relevant teaching procedures and
- organising pedagogic knowledge about literacy knowledge within a school.

Characteristic difficulties at each level

text levels	knowledge of text features, the 'what'	reading strategies, the 'how'
word level	<ul style="list-style-type: none"> • restricted letter cluster knowledge- very small letter patters, can analyse into small parts, attempt 2- syllable but not 3- syllable words • difficulty saying the first few letters, but when told, can say the word or don't finish word- say the first part • reverse words, eg., 'of' for 'for' • read blends incorrectly • difficulty using prior knowledge of words to read words in words • lack of recognition of key words, restricted set of known automatic words • Read few words automatically, need to invest attention ? • Show excessive use of distinctive visual strategies and letter by letter reading • Take longer to say written words • Difficulty recalling individual meanings of words, inflexible word meanings 	<p>Use low level word analysis decoding strategies:</p> <ul style="list-style-type: none"> • segment words into letters and recode to sounds, sound out letter by letter. • say correctly one part of word but not others • say each part of word correctly but have difficulty blending sound segments. • difficulty applying stress patterns to poly syllabic words • difficulty using word knowledge to read unfamiliar words
sentence	<ul style="list-style-type: none"> • poor use of punctuation while reading aloud; show 'run on reading', inaccurate intonation when reading aloud, don't use punctuation to segment sentence into digestible bits • say words, make omissions and insertions that don't fit with grammar • say words that don't fit with meaning of sentence, substitute words that clash in meaning but don't recognise clash • don't self correct • don't know when to re-read • can't paraphrase, can't tell what the action was in a sentence • poor intonation, poor fluency (read too fast or too slow), stop inappropriately, phrasing of sentence lacks natural language fluency, word by word reading • literal comprehension difficulties 	<p>When reading a sentence, difficulty</p> <ul style="list-style-type: none"> • paraphrasing the sentence • saying, retelling the sequence of ideas in a sentence • answering literal questions about the sentence • retaining all of the ideas in a sentence • recognising idiom, slang, cultural literacy • deciding when to re-read when grammar or meaning is disrupted in sentence
concept	<ul style="list-style-type: none"> • say words, make omissions and insertions that don't fit with context, say words that don't fit with context, topic of the text • difficulty linking ideas within text and with what they know, difficulty applying existing knowledge bank, can't carry ideas across sentences • difficulty predicting • response is semantically correct but cannot answer questions • not able to use context to give meanings of novel terms • inferential comprehension difficulties, difficulty reading between the lines • lack knowledge of different genres, text structures and how to use them. 	<p>When reading two or more sentences of prose, difficulty</p> <ul style="list-style-type: none"> • predicting ideas • saying, retelling the sequence of ideas in a sentence • answering inferential questions about the text • summarising the ideas in a paragraph or • recognising idiom, slang, cultural literacy • deciding when to re-read when grammar or meaning is disrupted in sentence • suggesting possible concepts that might be in a text to be read • matching prediction with what was in text

topic	<ul style="list-style-type: none"> • poor use of topic sentences • difficulty identifying the topic of a text • difficulty using grammar such as pronouns, tense across sentences • can't use headings, titles • poor prioritising, for example, recognising main vs subordinate ideas, poor use of topic sentences • poor topic attack skills • difficulty transferring knowledge, eg., filling in a concept map 	<p>Difficulty</p> <ul style="list-style-type: none"> • selecting topic sentences • selecting key words • deciding the topic of a text when beginning to read • prioritising the information in a text into key and subordinate ideas • revising and changing guesses about the possible topic • activating prior knowledge to scaffold the reading
dispositional	<ul style="list-style-type: none"> • poor identification of disposition of author, what author believes 	<p>Difficulty</p> <ul style="list-style-type: none"> • deciding the author's intended purposes • reading critically

Difficulty

- saying what strategies to use, don't use them spontaneously, framing up reasons or purposes for reading a text, planning how to read.
- using attention efficiently.
- monitoring reading to ensure comprehension, re-reading miscues inconsistent with theme
- initiating corrective action, attempt to correct miscues by re-reading
- organising the information gained from reading, not aware of what constitutes a reading outcome ("We've read that poem", but can't say what it says, etc)
- participating spontaneously in the reading activity

Their self talk suggests lack of interest, engagement, lack of control, focus, lack of relevance

What areas of oral language knowledge do you need to teach to help reader scaffold the reading: to

- understand better what words mean, how they are said ?
- work better at the sentence level, to structure words and intentions into sentences ?
- link related ideas, to predict and infer orally ?
- organise ideas into topics or themes ?
- comprehend the social context of how ideas are communicated, attitudes and values of writer to the ideas in the text.

Do you need to teach

- strategies for monitoring meaning in oral language transactions, listening comprehension ?
- phonological and phonemic awareness ?
- strategies for retrieving concepts from long-term memory ?
- verbal reasoning strategies ?

Do you need to teach readers to recode their nonverbal knowledge of a topic to oral language knowledge, to 'get ready for reading' their imagery or action knowledge so that it can be more easily matched with the verbal format of written text.

2. Literacy improvement in a primary school : Bellfield Primary School Literacy Intervention : A Case Study

A range of interventions have been implemented in recent years in Australian schools to target early literacy learning difficulties. While these have contributed to a significant decrease in literacy learning difficulties, estimates suggesting that up to 20 % of primary school students continue to have literacy learning difficulties.

The continued emergence of these difficulties and the observation that they are resistant to the novel teaching procedures that characterise the contemporary early literacy curricula and intervention programs suggest that the cause of these difficulties lie outside the domain of the conventional learning programs. In particular, it is reasonable to assume that those students who continue to have difficulty showing effective literacy learning progress lack specific areas of prerequisite knowledge that allow them to make effective use of the curricula.

The potential specific areas of prerequisite knowledge that these students may lack, and the reasons why they haven't acquired them, are indeed broad. The synthesis of a plethora of cognitive developmental processes, environmental factors, earlier experiential opportunities, emotional, sensory and physical factors interact to lead to a range of capacities that influence students' early literacy learning abilities.

The school

Bellfield Primary School was seen as a disadvantaged school in West Heidelberg, Melbourne. Based on the proportion of students who receive EMA, who have been rated as mobility, it was located in Category 9, the most potentially educationally disadvantaged category of school. It had been characterised as a school with a 'strong whole language' approach to literacy learning.

In terms of educational achievement, in 1996 it had 80 % of its students performing below state literacy benchmarks in 1996, in 2001, 90 % of their students are at or above them and in 2002 this has rose to 94 %. In 1996 84 % of Preps were judged to be at risk of severe literacy underachievement. This fell to 44 % in 1998 to 0 in 2001 and 2002. Its level of progress in literacy learning over the following 5 years has attracted the attention of educators throughout Australia.

	1998	1999	2000	2001
Preps reading level 1 text with > 90 % accuracy	56 %	76 %	85 %	100 %
Grade 1 reading level 15 text with > 90 % accuracy	66 %	82 %	84 %	94 %
Whole school reading scores on Reading Progress Test : Standard score (mean = 100)	94	95	107	113

Staff knowledge and expectations of literacy achievement

The staff in 1996, particularly in the early and middle school levels, had a strong orientation of 'whole language' approaches to literacy development. They were involved in the trial implementation of the state early literacy teaching program. The observation that the procedures had not successfully enhanced students' literacy knowledge confirmed for them that the students at the school were simply unable to acquire literacy knowledge at the same rate as their peers in other schools. They attributed this to the students' general environments, lack of motivation to read, lack of reading models, etc. They believed that it was unreasonable to 'expect the students to change'. The improvement is attributed to an on-going literacy initiative that included a number of issues:

Beginning the initiative

A new principal in 1996 put in place a program for literacy enhancement. The principal

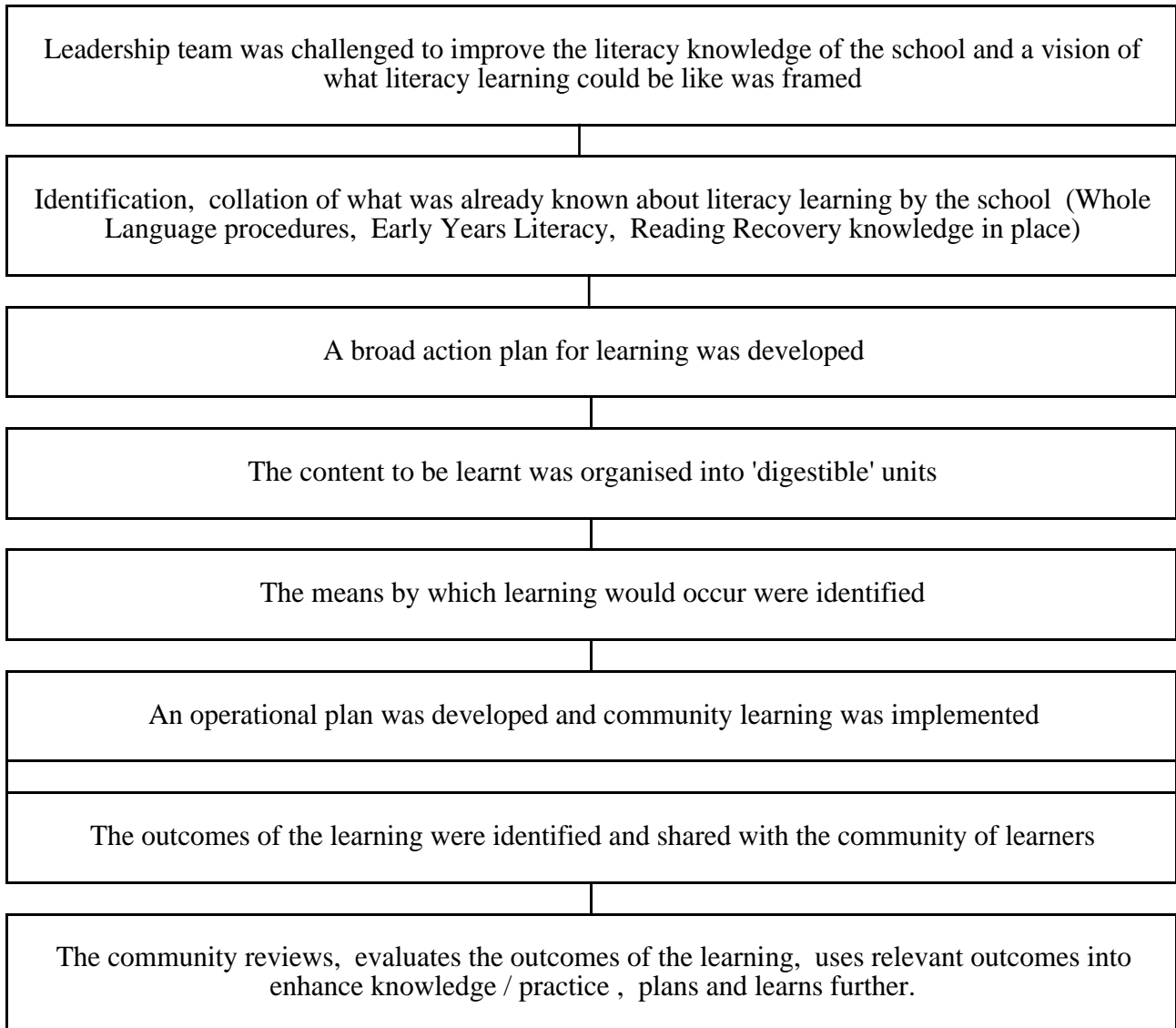
- was not satisfied with the level of literacy /numeracy achievement at the time. He did not accept the inevitability of the prognosis.

- had a vision of what he would like the school to achieve and believed that his staff had the ability to learn appropriate teaching procedures that could bring about literacy improvement.
- put in place careful procedures for monitoring students' literacy learning progress and decided that EYL and RR were not sufficient to improve literacy learning for many of the students. He believed that these programs assumed that the students had entry level psycholinguistic knowledge that several of his students seemed to lack.
- decided that the literacy ability of students could be enhanced through the implementation of teaching procedures that (1) targeted students' existing knowledge (2) targeted explicit, small changes in students' literacy knowledge (3) displayed an expectation that all students could improve their literacy knowledge (4) were data-based at any time.
- used the model initially to describe the entry level literacy learning knowledge of the students in the school, regardless of the possible environmental factors that may have led to this level of knowledge. From this was inferred that the student group was characterised by
 - Lack of sound knowledge (phonological and phonemic) to support literacy.
 - Immature learning task engagement strategies, with the associated expectation that they could learn successfully, immature knowledge of how to use linguistic means to self manage learning and task engagement.
 - Immature vocabulary and grammatical knowledge, immature verbal meaning network knowledge necessary to support literacy learning.
 - Immature use of effective listening strategies.
 - Low level of expectation that they could learn successfully at school.

The school used the MLOTP model to identify mismatches between the school's literacy education curriculum and the literacy knowledge of its student cohort. It implemented an intervention program across all grade levels that targeted initially knowledge acquisition at the word level of the model, with associated metacognitive and oral language. The program included the systematic and explicit teaching of phonological, phonemic and orthographic knowledge at all year levels in a developmental way. As gains for word level knowledge emerged, conceptual and topic level knowledge was targeted, with associated teaching in the areas of strategic listening and higher order thinking strategies.

School community learning program

The following key steps were involved in the learning :



Leadership at various levels initiated and guided aspects of the improvement.

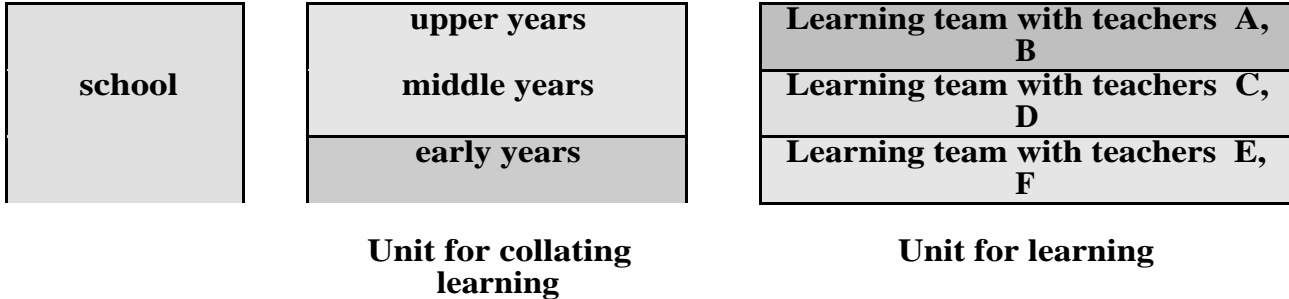
Developing the action plan

The action plan for how the staff learning might proceed included the school leadership

- explicating and operationalising its vision. The school leadership team that had a clear, explicit vision of the intended goals and demonstrated a practical commitment to realising it. The principal's belief that Bellfield students could learn literacy as well as other students and that his teaching staff could make a difference provided a base. He demonstrated a clear expectation to all staff and students what he expected all students to learn. He was supported and encouraged by the District Liaison Principal. Aspects of the principal's vision became the responsibility of staff. While many aspects of his vision were negotiable, this wasn't. All that he said and did communicated this message unambiguously.

The leadership team unpacked the vision with staff, negotiated parts of it with individual members of staff and groups.

- judging the relevant existing knowledge of the staff, that is, what they knew about learning and the procedures it could take for identifying and collating this knowledge
- deciding what would be the unit of change or growth. The school decided on the 'professional action learning team', a sub group of each department as the unit for growth and for collating the learning outcomes. The HoDs would be seen as 'leaders of literacy learning'.



- examining the processes it had in place for staff learning and the processes it might need to implement to provide a broader range of staff learning opportunities. Within each department the staff worked in small collaborative learning teams in which they could pursue action research projects.

This is shown in the broad based action plan for learning in the following.

An action plan for learning

Effective literacy learning enhancement : 3 year vision

In three years time :

What will students be doing ? Reading with comprehension more effectively

What will teachers be doing ? Appropriate pedagogy to foster literacy.

What will the institution be fostering ? ' The school organisation 'sees' its students as able literacy learners, and will have clear pathways for literacy growth with indicators of progress.

Development process

The context for teachers learning and changing their literacy practice

Teaching as a developmental process. Teachers as learners.

Institution fostering and directing the development. The institution's management team developed an implementation plan for the initiative. Issues include

- clarifying, explicating literacy learning policy, action plan at the institutional level
- opportunities provided by institution to consolidate, review, plan ahead
- how individual teacher growth is fostered, how feedback is provided to staff

Teaching the leaders of learning. HODs were trained to direct, facilitate and manage literacy development in their department. They were seen as team leaders of effective literacy learning and teaching at each level

Improving teachers' knowledge of effective L&T principles. Teachers explicate their beliefs re literacy learning, increase their knowledge of literacy learning and map these into improved teaching procedures, identify options they have in their teaching for describing, analysing and solving problems.

Professional teaching team approach to manage the development in each department:

- processes of the team are negotiated, action plan is developed by the department team
- each member has responsibility for particular aspects of literacy learning, members working in PALTs plan and implement action research projects that examine teaching aspects of the literacy initiative
- means for monitoring progress are identified, procedures for collating new knowledge at the departmental level are implemented.

Where are we now ?

Vision of preferred outcomes, stated explicitly by staff, departmental teams, administration, community and presented at school meeting.

Identification and audit of

- existing knowledge of staff re effective literacy learning and teaching,
- resources available (eg, procedures for determining how students learn), staff perception of students' needs, available existing data, students' and parents' perceptions of needs
- what staff, departments believe they need to be able to improve teaching, what they need to learn.
- what staff believe are reasonable outcomes for students

Staff review current literacy teaching practice and their perception of students' needs

Institutional plan for prioritising activities (in terms of time, resources), plan for operationalising, implementing, monitoring and evaluating programme.

The school leadership team recognized the complexity of the staff learning outcomes to be achieved for genuine improvement to occur and mapped the action plan into a content plan that involved an 'un-packing' of the content to be learnt. It also recognised the need for a teaching plan by which staff would have time to explore and implement aspects of the learning interactions model in their teaching and for each department to consolidate its knowledge about 'best practice pedagogy'. It integrated these into an operational plan that described how the various aspects were implemented.

The content to be learnt was organised into 'digestible' units

This included an examination of the development of phonemic and orthographic knowledge and a phonological-orthographic program that included a set of related instructional procedures designed by Dr Munro. This program teaches in a systematic way an understanding of the sound structure of spoken language and how this maps into written language. It begins with what students know, follows a developmental pathway from Prep to Grade 6, has clear and explicit learning outcomes throughout and focuses on teaching students how to use what they know when they read. The activities and outcomes at each year level were integrated with other literacy work done. This supplemented the state-wide Early Years Literacy program and Reading Recovery.

The content to be learnt

Focus for the year	Key activities
1997	Phonological and phonemic knowledge and its links with literacy acquisition: developmental trends, teaching strategies. Possible options for dealing with literacy problem areas identified by the school were identified and teaching strategies for enhancing literacy learning presented.
1998-9	A plan for school wide phonological and phonemic knowledge enhancement was developed with examples of weekly teaching at each year level prepared and used by Leadership Team to implement change. A range of teaching activities for fostering phonological and phonemic knowledge and orthographic knowledge in the context of every class.
2000-1	Possible gains for literacy learning by enhancing other areas of oral language and strategic listening and linking it with literacy. A plan for teaching this is developed and implemented. A range of teaching activities for fostering oral language knowledge and strategic listening in the context of every class.
2002	Higher order literacy comprehension strategies, a developmental trend for teaching these/ A range of teaching activities for fostering higher order literacy comprehension strategies in the context of every class.

How the community would learn

The procedures that would be used to facilitate staff learning were identified and are shown in the sequence below. The teaching enhancement program assisted teachers to modify their instruction, through collaborative teamwork, demonstration lessons and individual teacher coaching. It was based on adult learning models and involved the following aspects shown below.

The sequence of teaching procedures for staff learning

goals for learning	<ul style="list-style-type: none"> • identify current problems in literacy learning as a need for change • identify goals for learning; these were set by the school and negotiated by staff • explicit expectations of school leadership
explicate current knowledge	<ul style="list-style-type: none"> • collate what they know about how students learn literacy, • explicate and reflect on their beliefs and theories of literacy learning • identify what they don't know but would like to know about literacy learning
awareness of new ideas as options, possibilities for implementing improvement	<ul style="list-style-type: none"> • staff introduced to the concepts of phonological-orthographic knowledge and its contribution to literacy development and evaluated the options and possibilities for implementing improvement. • staff developed an awareness how learning can be unpacked or unravelled from something that is too big and amorphous to something that is manageable and can be broken into digestible segments. • staff decided whether the phonological-orthographic options were intuitively reasonable and whether they could in principle target identified problems in teaching.
contextualise the new ideas	<ul style="list-style-type: none"> • contextualise aspects of the model in their department by mapping it into a set of teaching procedures for example, what would the students be doing • evaluate their teaching and see options for fine-tuning how they teach. <p>relevant teaching procedures were demonstrated in teachers', evaluated and analysed in debriefing sessions</p>
see teaching procedures modelled in their classes	<ul style="list-style-type: none"> • observe possible novel teaching practice demonstrated, operationalised in their classes, • were coached to implement the procedures. • evaluated and analysed the procedures in debriefing sessions
trial new teaching procedures in action research, map them into teaching and be assisted to implement them	<ul style="list-style-type: none"> • analyse problem areas in their teaching from a literacy learning perspective and identify areas in which they could improve / fine-tune their teaching • within each level staff worked in small action learning teams to trial and evaluate novel literacy teaching procedures and to integrate them with other literacy activities. • staff were coached individually in the implementation of the program; <ul style="list-style-type: none"> • they identified procedures /aspects they wish to improve • relevant teaching procedures were demonstrated, staff were monitored in implementing these, receive, debriefing and evaluative feedback • negotiation of the next innovation to target.
evaluate, collate the outcomes	<ul style="list-style-type: none"> • staff monitored and evaluated outcomes and reported outcomes to staff meeting; report their trialing to their level team and to the school that showed how the procedure trialed influenced student achievement, engagement and interest, what students learnt about how to learn and their attitudes to the topic and subject
up-date their teaching on-going debriefing	<ul style="list-style-type: none"> • fine-tune their teaching to accommodate changes in approach to learning. • how it can become part of regular teaching practice - code of teaching that characterises the school's core approach to pedagogy. • on-going debriefing, monitoring, tracking and planning at departmental and whole school levels.

Skilling the leaders of community learning

This sequence of staff learning was led and supported by a literacy leadership team that had a sufficiently high level of instructional leadership to foster and guide the staff learning process. They

were seen by the school leadership team as 'leaders of literacy learning'. The leadership team was aware that it didn't have 'all the answers' but was certainly able to 'ask the appropriate questions' so that student learning was consistently targeted.

An literacy operational or implementation plan

The operational plan for 1997 is shown below.

Operational plan for researching teaching procedures for 1997

Outcome : staff	How it was achieved
audited what they know about the learning of phonological-orthographic knowledge and implications for effective teaching	staff at each level compiled what they knew about phonological-orthographic development and procedures for fostering it. They also identified aspects they did not know.
analysed the contribution phonological-orthographic knowledge development could make to literacy learning in their class, analysed their teaching in terms of the extent to which it facilitates each of the learner interactions	staff at each level mapped the phonological-orthographic program into their teaching, identified the types of teaching procedures that would develop this knowledge, the types of learning difficulty that would indicate the need for each and the assessment tasks they could use.
staff collected literacy relevant student data including) <ul style="list-style-type: none"> • the different ways in which students learn literacy • their students goals for learning literacy • how their students show literacy knowledge • how students transfer and generalise what they know • how motivated their students are to learn literacy 	<ul style="list-style-type: none"> • at the department level, staff teams developed procedures for assessing students' entry level literacy knowledge • staff members assessed literacy ability and compiled profiles of student knowledge
developed procedures for analysing the extent to which they needed to modify existing literacy teaching and to make maximum use of existing literacy materials in the school	at the department level, staff teams developed action plans, what each teacher would do, matched student learning needs with teaching procedures
as part of a self-enhancement action plan, each staff member engaged in a small scale teaching project to examine how the particular aspects of the phonological-orthographic program could be implemented in their teaching	<ul style="list-style-type: none"> • staff in pairs mapped aspects of the phonological-orthographic program into their teaching, trialed the procedures, integrated them with other teaching materials and modified them • staff saw teaching procedures demonstrated in their classes • staff were coached in particular teaching procedures • staff discussed where problems were arising in literacy learning with peers and members of leadership team; a positive dialogue about literacy learning and problem solving was actively fostered • staff regularly collected developmental data re reading progress and monitored small steps in student learning • staff revisited aspects of the phonological-orthographic program and integrated this with their findings • the leadership team spent considerable time in literacy lessons, demonstrating, trialing and discussing aspects of the teaching.
reported the outcomes of their innovation to the staff. All staff were informed of the outcomes of each project. Individual staff and departments were encouraged to discuss the projects of other staff and identify ones that they may trial in their teaching in the future.	This was done in a systematic, consistent way in designated staff meetings. Staff examined the extent to which their findings supported / challenged /elaborated earlier theories discussed.
debriefed in their department group and developed the next teaching research projects.	staff in their department group; <ul style="list-style-type: none"> • reviewed each innovative teaching procedure and how it could be improved in future use • identified ways of improving the research projects • identified the gains in department teaching knowledge • developed an action plan for future innovative teaching research projects.

Outcomes of the community learning

A key aspect of learning is the display of the learning outcomes at various times during the learning. The knowledge gained by each teacher can become group knowledge by being shared with other members of the department or teaching group and with the school community.

Each teacher reported the novel teaching procedure they trialed in the action research and the observed student outcomes. Each outcome was described in terms of the comparative level of achievement of students with earlier years, level of student engagement, students' knowledge of how to learn and their attitude to the topic being taught.

Review, enhance knowledge / practice and continue the learning

This phase of the community learning involves two aspects of reflection on practice: community members (1) reflect evaluatively on what has been learnt and identify valuable outcomes of the learning and (2) reflect 'into the future, contemplating possible directions for future learning.

The community reviews and evaluates the outcomes of the learning. In the above case study innovative literacy teaching procedures were evaluated in terms of their relevance for enhanced pedagogy and an understanding of learning at the department level. Staff identified how they could incorporate these into their teaching and to develop them further. At the school level the implications of outcomes for the school's code of teaching were identified. Schools can identify the extent to which the learning has assisted them to achieve aspects of their community goals or visions.

The community also plans and learns further. Schools can identify how they can re-orient their goals or visions and how they might approach the next aspect of their vision. The school identifies new priorities or goals for its learning and implements the next phase of the learning agenda.

3. Literacy improvement in a secondary school

Literacy problems in the secondary context Literacy improvement in secondary school contexts is frequently more problematic than in primary schools. This problem increases when students need to learn by reading in the various KLAS. Expository text in science, technology, economics and social science is usually more difficult to comprehend than narrative text. It has been exacerbated in recent years with the need to access a range of information sources.

Students who have difficulty converting written information to knowledge are less able to access information, have less opportunity to display what they know in written ways and have less opportunity to have their existing knowledge of a topic 'programmed' in verbal linguistic ways. As a result, they are less able to align what they know about a topic with related written text later.

Many secondary level subject area teachers find themselves in a perplexing situation. They are aware that successful learning in their content area requires students to read and to learn by doing so. As well, because some of their students have difficulty learning by reading, they seek to avoid the need for students to read in their subject and minimise exposure to text.

Over the last four years I have worked with secondary teachers in three secondary colleges to develop an approach to literacy enhancement that attempts to target these problems. It involved identifying and researching a set of explicit literacy teaching procedures that teachers in all subject areas could use to enhance students' literacy knowledge. The procedures needed meet a number of criteria: they needed to

- be known to enhance text comprehension
- be able to be implemented in regular teaching on a whole class basis.
- teach the learning outcomes that teachers were intending to achieve in each lesson.
- lead to reading comprehension strategies that students could learn to use, initially when directed and then independently and spontaneously as the need arose.

Effective Literacy Teaching Procedures (ELTPs).

The MLOTP model was mapped into seven literacy teaching procedures that could be used in regular content area teaching. Each is intended to cue and to foster the use of a matching literacy strategy by students. Students are instructed explicitly to

- get their knowledge of a topic ready for learning and literacy by organising and recoding what they know to a verbal form.
- add unfamiliar verbal concepts to their vocabulary by studying between five and ten verbal concepts to be covered in the content. They say accurately each word or phrase, read and spell it, suggest synonyms and antonyms, clarify its meaning and link with other concepts.
- read aloud short portions of written text that teaches the topic..
- paraphrase or say in their own words each sentence in the text.
- say questions that each sentence in the text answers.
- summarise the text, usually paragraph by paragraph.
- review, consolidate and show comprehension of what has been learnt by reading silently a written summary of the content covered.

The sequence of teaching procedures matches the steps involved in learning new knowledge.

These procedures were identified following initial trialing across all subject areas. They work by suggesting how readers can 'act on' what they are reading in systematic ways. They

- remind the readers to work on making sense of a 'digestible' amount of text at a time.
- suggest actions that readers can take to do this, very gradually.
- suggest readers make lower level links between ideas initially and then more complex links.
- remind readers of what to do to store what they have just read and understood in long term memory so that the new knowledge will be available for later use and further learning.

Studies have reported the effectiveness of teaching that foster the use of these types of strategies, either as single strategies or as part of a sequence..

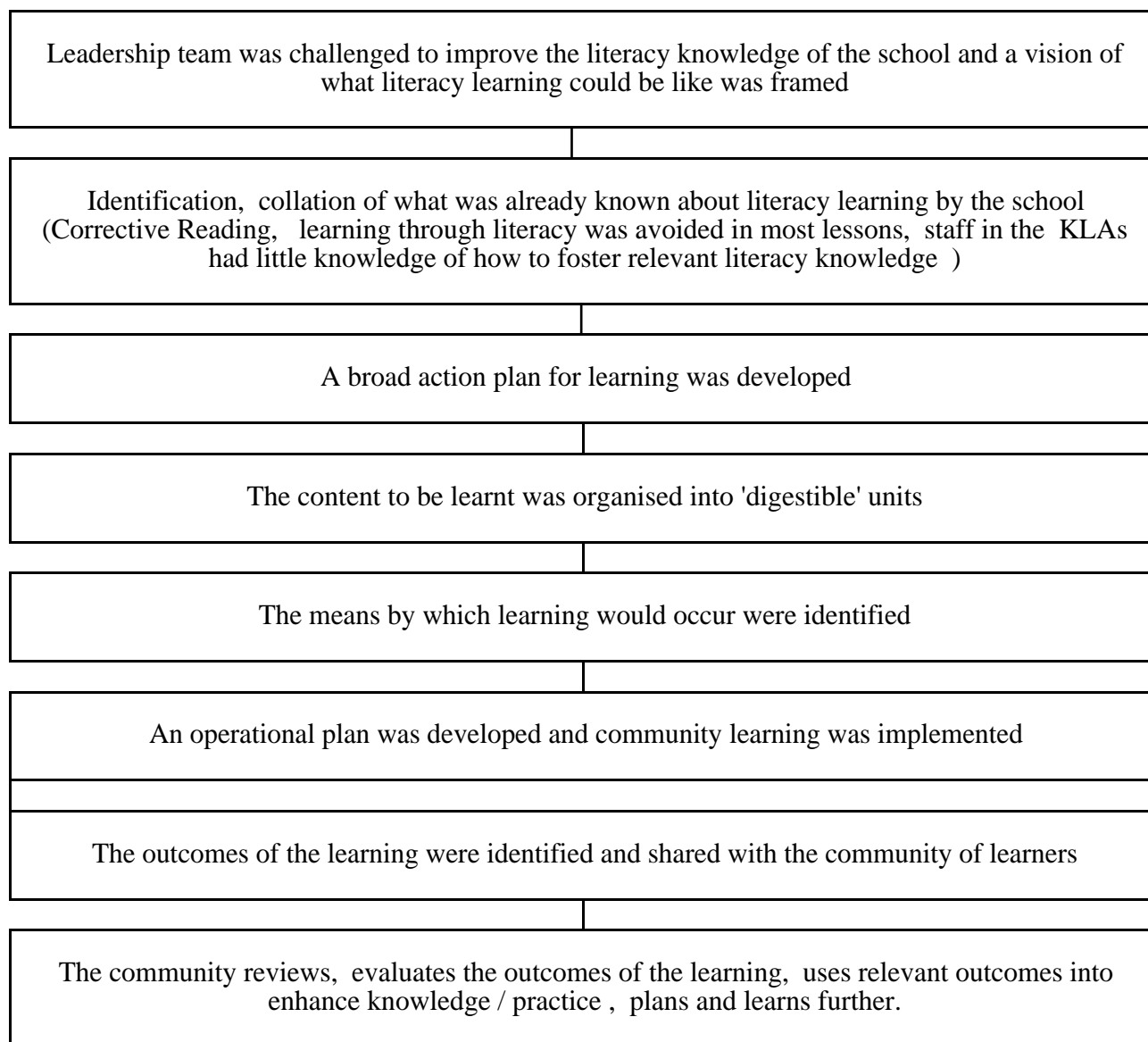
The literacy teaching procedures are described in terms of what students do. This is because they differ in how they are implemented, depending on the subject area, the purpose of the lesson and students' existing knowledge.

These procedures were incorporated in the code of teaching that characterises the school's core pedagogic practice. Teachers have been assisted, through explicit demonstration, modelling, coaching and professional action research to implement them in their teaching.

The aim	optimise learning at LSC by improving students' literacy knowledge and abilities of
Vision	all teaching in the school will include regularly explicit and systematic use of the ELTPs. They will be a key aspect of the school's code of teaching practice.
Elaboration	<ul style="list-style-type: none"> • The procedures will be used to help students learn to be independent learners. • Any student, parent and the school community can expect these procedures to be implemented in all KLAs. • Consideration of them will be included in teacher reviews

School community learning program

The following key steps were involved in the learning :



Developing the action plan

The action plan for how the staff learning might proceed included the school leadership

- explicating and operationalising its vision. The school established a 'leading literacy learning' (LLL) team that included senior members of each KLA. It evolved gradually its vision of the intended goals. This team was identified as the panel for facilitating literacy change.

The leadership team unpacked the vision with each KLA, negotiated parts of it with individual members of staff and groups.

- judging the relevant existing knowledge of the staff, that is, what they knew about learning and the procedures it could take for identifying and collating this knowledge
- deciding what would be the unit of change or growth. The school decided on the 'professional action learning team', a sub group of each KLA as the unit for growth and for collating the learning outcomes.
- examining the processes it had in place for staff learning and the processes it might need to implement to provide a broader range of staff learning opportunities. Within each department the staff worked in small collaborative learning teams in which they could pursue action research projects.

The means for achieving the vision

Progress towards the vision is managed within each KLA group. The 'leaders of literacy learning' were committed to achieving the vision. The project is co-ordinated by the Literacy Co-ordinator.

The professional development pathway for achieving the vision is shown in the following.

	Phase of training	Means of implementing
2000	Awareness of literacy learning at the secondary level and teaching options Plan for school wide literacy enhancement	<ul style="list-style-type: none"> Options for dealing with literacy problem areas identified and teaching strategies for enhancing literacy learning presented. ELTPs are demonstrated in classrooms Literacy Committee Plan sees the KLAs as the unit for implementing change LLL's training; discuss, revise literacy plan, identify key literacy strategies in each KLA, identify and audit staff knowledge re literacy learning in KLA, procedures for screening what students know / do re key literacy strategies. Year 7 to 10 students' literacy progress was monitored using the TORCH.
2001	KLA teachers <ul style="list-style-type: none"> see ELTPs modelled in their teaching trial ELTPs 	<ul style="list-style-type: none"> teachers in KLA experiment with and trial ELTPs as teaching options, are coached in their use, receive de-brief, feedback re their implementation teachers see the ELTPs demonstrated in their regular classes in each KLA LLL monitor the trialing lesson plans that demonstrate the key strategies are written. Year 7 to 10 students' literacy progress was monitored using the TORCH.
2002	<ul style="list-style-type: none"> LLL proceduralise the notion of LSC as a school characterised in its teaching by ELTPs; how the school will achieve these, why the school needs to achieve them Teachers develop small scale action research projects to explore ELTPs as part of regular teaching. 	<ul style="list-style-type: none"> LLL planning session. Each leader reports on literacy work done in 2001 and plans for 2002. Group PD activity that shows how the literacy strategies can be incorporated into teaching - examples of lesson plans and the range of alternative activities for each key ELTP. teachers trial them by applying them to topics to be taught in Term 1, 2002. They work with a 'buddy' to plan and trial an ELTP procedure in their teaching. They analyse and evaluate the project from teacher and student perspectives by noting how well the ELTP facilitated learning. Indicative behaviours include whether the students <ul style="list-style-type: none"> learnt the content better, showed a higher level of achievement were more motivated to achieve, were more on task, could more easily show what they knew, transfer and generalise better or answer higher level questions. They pool their findings with other members of their team and report back to staff in Terms 1, 3 in a poster at a joint staff presentation on a professional development day. Each report specifies <ul style="list-style-type: none"> the teaching problem area targeted the specific teaching behaviour trialed what the students did student outcomes; achievement, level of engagement, learn about learning time line. They discuss how Terms 1 and 3 topics could be improved teachers are coached to implement the ELTPs, have a classroom action plan, a set of teaching activities, a checklist for monitoring student progress and a procedure for reporting the outcomes. teacher use of the ELTPs in classes is monitored
2003	Teachers assisted further to implement ELTPs explicitly as part of regular teaching	teachers display ELTPs in their teaching - a code of teaching practice

Helping students get their knowledge of a topic ready for reading and for learning

Type of activity	Example of activity
<i>What does the title tell you ?</i> Give students the title of a text or some of the topic sentences in a text. They suggest the ideas that might be included in it. They discuss how they decided. They can learn to ask themselves "What does it remind me of?" or "What pictures does it suggest?"	Write this title: <i>Tools used when working with Timber</i> <i>Panda places</i>
<i>What do these mean to you ?</i> Give 10 topic words from the text to groups of students. They <ul style="list-style-type: none"> visualise the topic describe what the words remind them of suggest questions that the words might cause them to ask. 	Name Personal details Existing loans Writing Application form What I own How much I owe
<i>This is how it begins.</i> Read out the first sentence of several paragraphs. What do these tell you about the text? What picture/s do they suggest? What do they remind you of?	Like many animals the giant panda needs a special environment to survive While there are many types of bamboo, the panda will only eat four types
<i>Think, pair, share.</i> Readers note possible ideas in a text, pair with other students and share their thoughts.	The Lives of Stars
<i>Ask me about the topic.</i> Students have mock interview activities in which one student interviews another about the topic, for example, one student does a radio interview with another student who tries to get a bank loan when it is harder..	Pythagorus' Theorem Training methods for sports
<i>You write the article .</i> Give students headlines and have them write possible articles to follow. They can work on this in group activities	Pandas in danger of becoming extinct

Learn how to read, spell key concepts, suggest synonyms, antonyms for key words

Area of activity	Type of activity
say accurately each list word	<ul style="list-style-type: none"> If necessary identify each syllable in a spoken word. Draw attention to possible areas of pronunciation difficulty Ask students to suggest similar sounding words Build an awareness of functional sound patterns in words. If possible, teach sound patterns that have a meaning base as well, for example, 'micro', 'nomic', 'ial'.
read each word with you / after you	<ul style="list-style-type: none"> Read each word in syllables, say each part and then blend syllables; loc-a-tion, sev-er-al. Let students see how stress patterns change when you blend syllables. Help students see similarities between words on the lists and words they can read ; use analogy.
work on / explain meanings of key words	<p>Each pair of students</p> <ul style="list-style-type: none"> uses the sentence or prose contexts of words to guess their possible meanings and works on building meaning-making actions. They <ul style="list-style-type: none"> check their impressions through examples, with perhaps three or four examples of each, wherever possible. suggest what they think the word doesn't mean. This helps them to 'put bounds' on the meaning of the word. <p>These activities help them learn 'word meaning building' actions. It is more useful to consult a dictionary once they have formed an impression of what a word might mean, or 'have a feeling for it'.</p> <ul style="list-style-type: none"> has two words and put together their definition, use each word in a sentence that shows its meaning, write a paragraph / short story using the list words. suggests as many synonyms and antonyms for key topic words. suggests the category the topic words belong to, draw a network diagram linking the word meanings. explores several words, that have the same prefix or suffix, eg., re- or micro- They <ul style="list-style-type: none"> link each word both with what they know about similar words and how it is said segment each written word into parts. guess the meaning of the prefix, in this case, re- .

spell the words.	Develop writing and spelling in parallel with reading: <ul style="list-style-type: none"> • show how to get from how word is said • ask students to write down all they know about a spelling pattern • ask students to segment words into syllables and write each syllable. • when correcting incorrect attempts, show the syllables / letters that are in the correct positions . • help them see the value of syllabifying or having words syllabified for them.
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Teachers learnt to use templates such as the following for students to use as they read a text.

Key word	meaning	1-2 synonyms

Read aloud short portions of relevant text

Each student reads aloud a small portion of the text. Before reading aloud, pairs of students can be allocated sentences or paragraphs on which they can practise and support each other. They can ask for help with words they may find difficult.

Integrating the reading strategies.

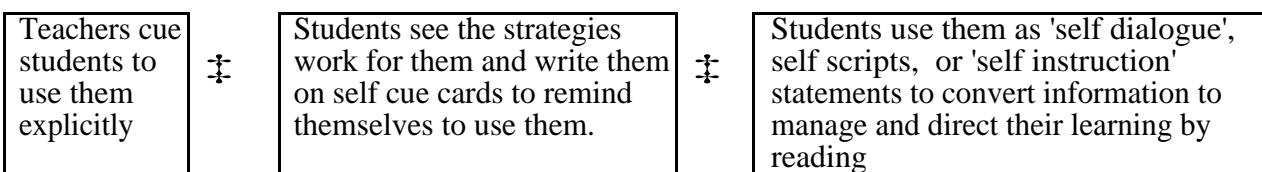
As you read each paragraph of a text

<i>select the key words</i>	<i>summarise it - say what is it about in one sentence</i>	<i>say the main question it answers</i>
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Write these in the table below for each paragraph.

	Key vocabulary in the text	Summarise main ideas of paragraph	Main question answered by paragraph
1			
2			
3			
4			

Students use the procedures spontaneously.



Students can learn to use the strategies in a self diagnostic way. Each strategy leads to a particular type of knowledge about a text. When they have difficulty comprehending a text they can use the sequence to identify which strategies they have used effectively and which ones they may need to re-apply. Do they, for example, believe they understand a sufficient portion of the key concepts in the text? Can they say in their own words enough of the sentences?

Teachers can also use the sequence in a diagnostic way. When students have difficulty learning from a particular text, teachers can identify which aspects have not been sufficiently well understood and re-implement activities for those procedures.

Teachers learn to implement the high reliability literacy teaching procedures

To help teachers embed the procedures in regular teaching, they can use the following planning and review sheet.

Content for session	read aloud short portions of relevant text	paraphrase text	say questions the text read answers	summarise text	work on key words	read silently and show comprehension
1						
2						
3						
4						
5						
Evaluate each activity						

Results

Changes in students' literacy performance

Year 7 and 8 students' literacy progress was monitored using the TORCH. Change in comprehension between February 2001 and 2002 is shown in Table.

Year level in 2001	mean score (stanine)		level of difference
	2001	2002	
7 (N= 42)	4.26	5.35	t(41) = -3.76
8 (N= 45)	4.09	4.48	t(44) = -0.41
9 – 10 (N= 67)	4.16	5.29	t(66) = -2.54

These data show that the 2001 Year 7 and 9 – 10 students made substantial improvement in their reading comprehension, while the rate of improvement for the 2001 Year 8 cohort was not as great.

Stanine score in 2001	Mean gain score		
	Year 7	Year 8	Years 9 - 10
0	2.7	2.6	3
1	2.3	2.4	.4
2	1.0	-.3	2.3
3	1.6	.8	.8
4	1.4	0	-.2
5	1.1	-1.3	0
6	-.3	-2.0	.2
7	.17	-2.4	-.8
8	.25	-.5	-.2

These data show that while the less able readers at all year levels made gains in their reading comprehension, the more able readers in the Year 8 group comprehended at a comparative lower level in February 2002 than they did in February 2001.

Change in teacher behaviour

Teachers during 2001 were asked to report the frequency with which they used each ELTP in their teaching. All ELTPs were reported to be used with approximately equal frequency, with teachers rating their use as 'regular' rather than sometimes, rarely or always.

The frequency of actual use of the ELTPs in lessons was monitored during November, 2001 by observing lessons. In those classes for which the procedures were appropriate, the frequency of use is shown for each KLA and for each year level

The frequency of using each procedure for each KLA is shown in the following table.

procedure	% use					
	Eng	IT	Maths	Arts	Science	SOSE
get knowledge ready for learning	82	78	91	7	14	34
study 5 - 10 key words	79	86	84	26	21	67
read aloud text	72	78	89	14	13	43
paraphrase texts	31	64	76	0	0	25
say questions text answers	24	37	19	0	0	17
summarise text	17	16	0	0	0	0
review, consolidate what has been learnt	0	0	26	14	12	17

The frequency of using each procedure for each year level is shown in the following table.

procedure	% use for each year level			
	7	8	9	10
get knowledge ready for learning	83	62	38	15
study 5 - 10 key words	89	67	29	26
read aloud text	61	48	47	39
paraphrase texts	32	55	19	13
say questions text answers	17	38	0	6
summarise text	8	23	0	0
review, consolidate what has been learnt	8	0	0	0

These data show that the frequency of ELTP decreases with increase in year level and with developing higher levels of comprehension. Some classes used them sparingly.

Discussion

Literacy needs are difficult to conceptualise and to operationalise. Determining secondary students' needs and entry level behaviours are difficult to ascertain. Reading difficulties often become tangled with emotional, engagement and motivational problems, particularly in regular classroom content where the focus for the teacher on literacy is secondary to teaching in the particular subject or domain

Changing teaching procedures is difficult unless teachers can see that the recommended changes

- are relevant and appropriate to their teaching
 - This is why we do the modelling, coaching, have the debriefing
- are manageable and possible by them, can be implemented relatively easily, disrupt the teaching routine least. We encouraged teachers to reflect on what they were doing, attempted to foster a dialogue re literacy learning and difficulties
- will solve problems in the teaching that are worth solving, how they assist in
 - structuring a lesson and for 'packaging up' the teaching information.
 - managing discipline problems because they are not engaged in the teaching (partly because they lack appropriate literacy learning skills).
- is a professional responsibility for all teachers, expected of them by the school leaders, part of their accountability and characteristic focus of the school;
- are linked with positive changes / feedback from students; often hard to see in regular classrooms.

The school's literacy outcomes have improved over the past two years, both in Curriculum and Standards Framework benchmarks and in objective assessment of reading. The program shows that literacy outcomes can be improved by assisting teachers to modify, in specific, validated ways, the teaching procedures they employ.

The outcomes also indicate that pedagogical improvement requires integrated activity at the institutional, departmental, collaborative small group and individual teacher levels. The school itself needs to be seen as a 'literacy learner', with processes that allow its existing knowledge to be valued, access to appropriate teaching information and an explicit pathway for literacy growth.

4. Implementation at the systemic level

The model has also been used in a range of ways to assist a systemic educational provider to optimize its literacy learning support, particularly those who have literacy difficulties.

The Catholic Education Office in the Diocese of Melbourne is one of the largest non-state providers of education in Australia at a systemic level. This educational system has in place a range of literacy support options for students who have literacy difficulties. It was aware that a group of these did not make permanent and stable literacy gains (the 'third wave' readers).

first wave teaching	Most students learn well from regular early literacy education. Positive initiatives implemented by CEO such as ClaSS or Success for All.
second wave intervention	Some students have early difficulties learning to read. They benefit from initial intervention option such as Reading Recovery.
third wave intervention	For some students factors such as language, conceptual knowledge or memory processing contribute to their early literacy learning difficulties. The mismatch between the learning assumptions made by regular interventions and their approach to learning is wider. The teaching needs to target these areas of development and usually needs to be tailored individually.

To optimize support for the needs of third wave intervention students, the CEO implemented an action plan that involved two components

action plan implemented by CEO for research-validated educational provision	
investigation of the specific literacy learning characteristics of these students	PD activity to equip teachers to identify student needs and to implement appropriate teaching

Different students may require variations in their third wave intervention. Given the critical need to identify effective third wave interventions for younger students, the received a research grant in to develop effective interventions for use in Schools with students requiring third wave support.

research activity joint industry-university partnership ARC project between Special Education Staff Group, CEO Melbourne and DLED, Uni of Melbourne	<ul style="list-style-type: none"> • examined the relationship between psycholinguistic characteristics of Grade 1 students and success in Reading Recovery • 472 students in 38 schools completed 20 psycholinguistic and cognitive tasks and a 'literacy learning readiness' profile was compiled for each student. Tasks were in the areas of <ul style="list-style-type: none"> • phonological awareness, • orthographic processing + alpha-numeric symbol encoding, • linking graphemic and phonological knowledge, • oral language (vocabulary, listening comprehension and syntax), • rapid automatic naming, • short term memory (semantic and phonological encoding) • general reasoning (both verbal and nonverbal). The profile assesses accuracy and automaticity in literacy-related processing. • literacy learning profiles mapped into sets of teaching procedures.
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	Efficacy of each teaching procedure was evaluated (approximately 200 students in 21 schools in 3 alternative intervention trials)
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The research activity is providing the education community with	
validated psycholinguistic profile tasks to predict success in early literacy intervention	validated teaching procedures that match the profiles of early literacy underachievers. Three intervention pathways <ul style="list-style-type: none"> • phonological awareness linked to text reading • orthographic awareness linked to text reading • oral language comprehension use linked to text reading

The research provided a validation of the model of reading

Enhancing literacy intervention for students with reading difficulties

Tasks used to examine the correlates of reading difficulties

Prose reading	Neale Analysis of Reading Ability	
Receptive Vocabulary	PPVT (Third Edition)	Show the student a set of four pictures and say the target word. Ask the student to point to the appropriate picture.
Verbal Analogies		<i>Finish off sentence . A cat meows, a dog _____</i>
Receptive Syntactic Awareness	CELF 3 / Sentence Structure	Say the target sentence in the test booklet and ask the student to select the appropriate picture
Expressive Syntax	CELF 3 / Word Structure	Show stimulus picture. Say target sentence booklet and student completes it
Imitative Syntax	CELF 3 / Recalling Sentences	Say stimulus sentence and student repeats it
Listening Comprehension		Listen to this story. When I have finished, tell the story back to me. Write down the student's immediate story retelling; setting, initiating event, internal response, attempt, consequence, ending
Short Term Auditory Memory for Words	WRAML / Verbal Learning	Say the 13 words at one word per second and ask the student to recall as many as possible. Repeat on 3 more trials: sand game hat tree ear comb flag wood map door ice nail boat
Delayed recall of Short Term Auditory Memory for Words		
Short Term Visual Sequential Memory for Objects		Show pictures, one at a time. Show the set and students point to the pictures they saw in the order they saw them. Repeat for sets 2-6.
Short Term Visual Sequential Memory for Letters		Use the instructions for Short Term Visual Memory for Objects, 1 second per letter.
Phonological Awareness Tasks	Sutherland Phonological Awareness Test	<ul style="list-style-type: none"> • Rhyme Production • Onset Identification • Final Phoneme Identification • Segmentation (1) • Blending • Initial Phoneme Deletion • Segmentation (2)
Phonological Short Term Memory		I am going to say some strange words. I want you to listen to what I say and then you say them after me. fim lut / fot reg/ grun slev pla
Matching Spoken and Written forms of words		Show box with words in it. Student finds the word said. Note item identified and time taken; n, in, at, hog, ham, lid, brag, rug, cut, stun, limp

Letter-Sound Decoding		Look at these strange words. Listen to how I say them. Buv, Glag, Sotl. I am going to show you some other strange words. They are not real words. Say each one as I point to it. ob_ _mit_ _slad_ _mond
Learning an Orthographic Code		Look at this pattern. Under each letter is a special mark.
Visual Symbolic Processing		Look at this box. Now look at this box. See if you can find one of these (k) in here (u k l p).
Orthographic Processing for Words		I am going to show you a box with letters/ word in it. One letters/ words has been written twice. I want you to find it c E, at ent om isp mop fost gird saw strid
Rapid Naming Ability	RANL RAND	
Verbal Reasoning	K-BIT Expressive Vocabulary	Student names stimulus picture
Non-Verbal Reasoning	K-BIT: 2 Matrices	

Professional development activity

Two PGCE subjects that contribute to a MEd degree

Literacy Intervention Strategies

A research oriented study of literacy acquisition and literacy learning disabilities. Students examine

- explanations and models of literacy processing,
- acquisition of literacy knowledge
- the range of literacy learning disabilities,
- procedures for the assessment, diagnosis and reporting of literacy learning disabilities
- the design and implementation of intervention procedures

Empirical support for the MLOTP model of literacy processing is examined throughout.

Enhancing literacy intervention practice

A research oriented subject. Students

- examine procedures for analysing and evaluating literacy learning difficulties and teaching /intervention procedures
- learn action research procedures for implementing and evaluating innovative literacy diagnostic and intervention procedures
- examine procedures for staff development and knowledge enhancement re literacy intervention.

During 2002, its first year, the course was completed successfully by 52 participants.

Changes in teacher knowledge

Assessment pre- and post- the PD activities indicated that participants improved in their ability to

- diagnose operationally specific reading disabilities

- select and implement operationally effective intervention
- research specific literacy intervention procedures

The model of reading is being broadened in its use at a systemic level:

- as a framework for organising the tasks trialed and validated for the identification of specific types to literacy learning difficulties as part of the ARC-SPIRT project. These tasks are presented on the publicly accessible website <http://webraft.its.unimelb.edu.au/476696/pub>
- as a framework for organising the teaching procedures trialed and validated assisting reading underachievers. These tasks are presented on the publicly accessible website <http://webraft.its.unimelb.edu.au/476696/pub>
- as a framework for ‘unpacking ’ the literacy learning needs of any at risk student by teachers and schools. A checklist based on the framework has been developed by the systemic body and teachers in schools will be trained in its use. The system is recommending schools use the framework to describe the literacy knowledge of those students they refer for special assistance. It will also lead to teachers accessing directly the tasks above and the teaching procedures.

Checklist for Identifying Reading Difficulties at each of the levels

Tick each box that identifies the student's demonstrated reading behaviour.

Levels of text	Knowledge of writing conventions, the 'what' of reading.
<p>WORD LEVEL</p> <p><i>Word bank may have less accurate sound and/or spelling forms.</i></p>	<p>The student:</p> <ul style="list-style-type: none"> <input type="radio"/> has difficulty blending sounds to form a word <input type="radio"/> predicts words on the basis of an individual letter and/or a letter cluster <input type="radio"/> converts each letter to a sound and blends sounds <input type="radio"/> has difficulty sounding out words into sounds (segmenting) <input type="radio"/> has difficulty identifying letters and/or letter clusters <input type="radio"/> takes longer to recall names and sounds of letters, letter clusters and words <input type="radio"/> has difficulty using letter cluster knowledge used in one word to assist reading another word with a similar cluster pattern- analogy (eg. Reads w-ent, should be able to read s-ent, w-ant) <input type="radio"/> doesn't recognise letter clusters (e.g. sp-ent) or digraphs (e.g. oa / th) in words <input type="radio"/> segments words into letters or inappropriate clusters (e.g. wi-nd-ow) <input type="radio"/> is inconsistent with letter identification, learning the visual code
<p>SENTENCE LEVEL</p>	<p>The student:</p> <ul style="list-style-type: none"> <input type="radio"/> has restricted, immature grammar <input type="radio"/> demonstrates limited use of punctuation to gain sequence of meaning <input type="radio"/> is less likely to use rehearsal and/or chunking strategies <input type="radio"/> has limited recall of a story just read <input type="radio"/> does not re-read sentences to assist comprehension <input type="radio"/> does not paraphrase text read <input type="radio"/> has difficulty generating questions about text <input type="radio"/> has difficulty visualising information from text
<p>CONCEPTUAL AND TOPIC LEVELS</p> <p><i>Knowledge may be organised in episodes with contextual links rather than in a networked format</i></p>	<p>The student:</p> <ul style="list-style-type: none"> <input type="radio"/> makes limited use of prior knowledge to assist reading new texts <input type="radio"/> appears unable to link ideas occurring early in a text to ideas that occur later in the same text <input type="radio"/> does not demonstrate knowledge of genre type <input type="radio"/> does not elaborate, infer and/or summarise while reading

Self-management and control strategies

Examples of strategies you might see student's use are:

- *initiate corrective action *decide when to re-read *review or consolidate what they have read
- *monitor how their reading is progressing *take further strategic action if necessary *review and self-question
- *self-correct *organise the information gained from reading to fit purpose for reading

Please tick the most appropriate box

- This student **has the knowledge and demonstrates** reading strategies
- This student **has the knowledge but does not demonstrate** reading strategies
- This student **does not have the knowledge or demonstrate** reading strategies
- Overuses one or two of these reading strategies

Oral language knowledge

Readers may have difficulty in oral language

at word level,

- learning how words are said ('crinimal' for 'criminal')
- less aware of sounds in words
- remembering names of items
- difficulty building a word bank (receptive vocabulary)
- smaller expressive vocabulary
- difficulty learning word meanings
- a less developed network of word meanings (e.g. antonyms, synonyms)

at sentence level

- understanding complex grammatical forms in oral comprehension

at conceptual level

- how ideas are linked into themes

at topic or theme level

- how a theme is communicated in a narrative, description

at the pragmatic or dispositional level

- how the social context affects how ideas are communicated
- the attitudes and values of the writer towards the ideas in the text.

Experiential knowledge;

The student demonstrates:

- use of personal experiences
- visual imagery knowledge
- motor knowledge
- knowledge of symbols

Sensory input to the knowledge base and motor aspects of expressive language

Auditory input

- The student has a history of hearing problems

Visual input

- The student has a history of vision problems

Motion input

- The student has a history of motor problems

Articulatory processes

- The student has a history of speech problems

References

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Luke A, Freebody P. (1990) *Prospect: A Journal of Australian TESOL*. (11).