FAST FORWARD
READING INTERVENTION FOR YEARS 3–8

SUMMARY OF RESEARCH FINDINGS
BY THE UNIVERSITY OF MELBOURNE
DEPARTMENT OF LANGUAGE, LITERACY AND ARTS EDUCATION

Legend
OT: Original text
MV: Modified version
FV: Final version
ESB: English Speaking Background
NESB: Non English Speaking Background
ESL: English as a Second Language

INTRODUCTION

This report presents a summary of findings of the study conducted by staff from the Department of Language, Literacy and Arts Education at The University of Melbourne ('the University') and commissioned by Thomson Learning Australia ('Thomson') to research new levelled texts (levels 6, 7, 8, 10, 12, 13) that form part of a new reading intervention program for years 3–8 entitled *Fast Forward*.

The research aimed to investigate the following questions:
1. Can specifically designed texts support struggling readers, ie is there a distinctive contribution that text design and content can make to encourage reading accuracy and comprehension?
2. What is the effect of such texts in terms of reading accuracy and comprehensibility?
3. What are the specific features (grammatical, lexical, etc) that better support older struggling readers?
4. What teaching practices support struggling readers in the middle years of schooling?

METHODOLOGY

The research was conducted in three schools targeting 60 learners (years 3–8) experiencing difficulties with reading, comprising the following groups: (i) low socio-economic and English speaking background (ESB); (ii) low socio-economic and English as a second language (ESL) background; and (iii) high socio-economic and ESL background. The basis of the research methodology was to gather data from differentiated samples of learners whose variables are socio-economic status (high/low), and language background (ESL/ESB), but who have in common the fact that they are experiencing difficulties with reading.

STAGE 1 – STUDENT PRE-TESTING

Teachers identified students experiencing difficulties with reading and this initial assessment was verified through the use of an informal reading inventory (Parkin, Parkin and Pool, 2002) and PM Benchmark texts (Smith and Randell, 2000). These measures provide information concerning a child's reading behaviour, level of reading accuracy and comprehension.

STAGE 2 – EVALUATION OF LEVELLED READING TEXTS

The learners were divided into a control and experimental group. Half the learners were tested against the original Thomson texts, while the other half read texts modified by the researchers. The modifications focused on vocabulary, phonological patterns and meanings. The modifications resulted in a new version of texts to address possible problems identified in the texts.

Students were required to undertake six text-tied assessment tasks for each text (modified or unmodified). These tasks included: book orientation, silent reading, reading aloud, oral retelling, response to a series of comprehension questions and, finally, response to questions intended to elicit the students' attitude towards the text. A running record (Clay, 2000) was taken while the student read aloud. This measure provided information concerning the child's reading behaviour and level of reading accuracy.

STAGE 3 – DATA ANALYSIS

The data was analysed, contrasting the comprehensibility of the modified versus the unmodified texts for learners in the student categories identified.

OVERALL PROJECT FINDINGS

The following section presents a summary of the major findings based on the trialling of levels 6, 7, 8, 10 (factual and fiction) and 12 (fiction only) texts and the evaluation of levels 6, 7, 8, 10, 12 and 13 texts by researchers. This section also makes recommendations for future directions in relation to the development of *Fast Forward*.

The research uncovered considerable evidence of specific linguistic features, patterns of language and meanings that better support older struggling readers and provide suitable alternatives in improving comprehension of levels 6, 7, 8 10 and 12 texts.

It is important to note that the findings also include the face-value judgement and professional interpretation of the researchers. Therefore, the University combined data from trials with the professional criticism and literature review conducted by the researchers. However, the small sample size limited the extent to which the conclusions drawn can be generalised on and considered conclusive. Tentative conclusions can also only be drawn due to the researchers' limited ability to control the many variables (eg students' previous background topic knowledge, semantic knowledge, grammatical knowledge) that affect reading comprehension (Clay, 1991; Gee, 2004; Koda, 2005).

The overall project findings showed that the fundamental design principle of *Fast Forward* appears to be sound and valid. Based on available documentation, the principle is:
- **A high-interest level, low-readability level intervention program aimed at students in the middle years of schooling or the upper years of primary school who need high level support to improve their literacy skills**

The program:
- **develops reading competencies with attention to the following skill areas: phonics, vocabulary, comprehension and fluency**
- **develops literacy skills using high interest, low readability, finely graded levelled texts that are linked to curriculum content (including relevant text types) and that are age-appropriate in terms of design and size.**

As a result of the research conducted by the University, Thomson undertook the task of making the recommended changes to the *Fast Forward* texts across all levels of the program (levels 6–25):

- **The use of controlled wordlists was reviewed and, whenever possible, Thomson has introduced greater flexibility in terms of permitted categories and examples of words, particularly for factual texts.**
- **A more comprehensive view of the basis and means for levelling of texts has been adopted (see Brabham and Villaume, 2002, p 439). The matrix developed by the University's research team, the *Framework for Evaluating and Modifying Levelled Texts*, has been adopted as a much more elaborate guide for the description and development of levelled texts.**
- **Levelling *Fast Forward* texts now encompasses:**
  - **Text and print features**
  - **Vocabulary (ie difficulty of words in terms of problem solving)**
  - **Range of high frequency words**
  - **Range of subject-specific vocabulary**
  - **Sentence complexity**
  - **Content (ie concepts and themes)**
  - **Text structure**
  - **Language and literary features**
  - **Themes and illustrations and relationship of text to image**
  - **Organisation of information (ie layout and design)**
  - **Text length**
- **Commissioned writers are now being offered professional development based on the modifications that have been made to trialled texts and the *Framework for Evaluating and Modifying Levelled Texts*.**
- **Thomson now reviews authors according to text type, and the authors' characteristic use of language. Thomson's writers show considerable skill in creating supportive and**

comprehensible texts using controlled vocabulary lists, a skill that has been further enhanced with the use of the *Framework for Evaluating and Modifying Levelled Texts*.

THE TEXTS

The following section of the University's research findings presents an examination of the texts based on the professional judgement of researchers and on the data collected during the trialling of levels 6, 7, 8, 10 and 12 texts.

Nine key features of supportive fiction and factual texts for struggling ESB and ESL readers in the middle years of schooling have been identified.

Features relevant to fiction and factual texts:
- Supportive linguistic features, language patterns and meanings
- Use of authentic language that provides rich models of language
- Clear and supportive visual information (eg illustrations, photographic images, graphs, maps)
- Interesting, appealing and engaging topics.

(Gibbons, 2002; Winch et al, 2004)

Features of particular relevance to factual texts:
- Relevant topics and concepts related to students' social/cultural background with links to curriculum content
- Clear overall text organisation
- Clear layout and signalling devices (eg use of headings, titles, clear topic sentences, text cohesion)
- Appropriate conceptual density (ie taxonomic organisation and development, topics and concepts logically and clearly developed from broad to specific)
- Use of clear instructional devices in factual texts (eg chapter headings, glossary of terms, index, summary chapters, graphs).

(Garibaldi, 1994; Gibbons, 2002)

These characteristics provided the framework for the study of levels 6, 7, 8 10, 12 and 13 texts. While many of the characteristics are drawn from Gibbons' work on ESL learners (2002), the effects of the changes also support ESB struggling readers.

The following section discusses the levelled texts in relation to each of the aforementioned features of supportive texts. As a result of the University's findings, Thomson undertook the task of incorporating the majority of the recommended text changes into all levels of *Fast Forward*. In some instances, recommended text changes were not incorporated, due to *Fast Forward*'s use of controlled vocabulary and a controlled new word ratio, and in a number of instances Thomson made further modifications to the recommended changes, again due to the use of controlled vocabulary and the controlled new word ratio. For those texts that include linguistic features that will challenge some students, the research reveals the importance of pre-teaching those specific features before reading, to improve comprehensibility.

Linguistic Features, Language Patterns and Meanings

Identifying specific linguistic features, patterns of language and meanings that support struggling readers – ESL learners in particular – in the middle years of schooling was a key area of research for this project.

The data collected suggests that specific linguistic features, language patterns and meanings that appeared in trialled unmodified, and in some instances modified, texts were particularly problematic for both ESB and ESL learners.

Exceptionally problematic language structures and meanings for ESB and ESL learners include:

Atypical verb choice replaced with naturally occurring verb

A common modification made to many of the original texts involved replacing an atypical or uncommon verb with a naturally occurring or typical verb group. Students' responses to the comprehension and attitude questions suggest a possible link between comprehension and verb choice.

While not directly affecting comprehension, the use of *'look at'* in the Level 8 text *Sheep Station* caused some confusion:

> First, they **look at** the wool to see if it is clean. (*Sheep Station*, OT, Level 8, p 9)
> First, they **check** the wool to see if it is clean. (*Sheep Station*, MV/FV, Level 8, p 9)

Some of the modifications the University made did not have a significant impact on comprehension, for example:

> "*Come on*, Max!" I **said** again. (*Max and the Tornado*, OT, Level 7, p 7)
> "*Come on*, Max!" I **shouted**. (*Max and the Tornado*, MV/FV, Level 7, p 7)

However, some examples of modifications made to verb groups do appear to have had a considerable and direct affect on comprehension. These include:

> First, she **looks a**t all the animals to see that they are alright. (*Animal Hospital,* OT, Level 10, p 5)
> First, the nurse **checks** all the animals. (*Animal Hospital,* MV, Level 10, p 5)
> First, she **checks** all the animals. (*Animal Hospital,* FV, Level 10, p 5)

> This gas **is** carbon dioxide. (*Caves*, OT, Level 6, p 11)
> This gas **is called** carbon dioxide. (*Caves*, MV/FV, Level 6, p 11)

Tense change

Modifications to tense were made by the researchers for one or more of the following reasons. In some instances these changes formed part of a greater change to the text, as is shown below.

(i)   Tense choices considered semantically demanding and complex for students at lower levels

> I was walking along the beach looking for anything that my family might need. I sometimes found wood that had been washed onto the beach. Wood was good for starting fires.
> (*Surviving a Tsunami*, OT, Level 10, p 8)
> I often walk along the beach to look for wood. My family uses the wood to start cooking fires.
> (*Surviving a Tsunami*, MV, Level 10, p 8)

In this instance, Thomson made a further modification, using the past tense as appropriate for a recount:

> Most days, I walked along the beach to look for wood. Wood is good for starting a fire.
> (*Surviving a Tsunami*, FV, Level 10, p 8)

(ii)   Atypical tense choice (eg timeless present common in factual texts)

> At the same time, another nurse **will arrive** to care for the animals into the night. (*Animal Hospital*, OT, Level 10, p 14)
> At the same time, another nurse **arrives** to care for the animals into the night. (*Animal Hospital*, MV/FV, Level 10, p 14)

> Some people **might go** by car. Some people **might travel** on a bus. (*Travelling Around*, OT, Level 10, p 4)
> Some people **travel** by car. Some people **travel** on a bus. (*Travelling Around*, MV, Level 10, p 4)

Some people **travel** on a bus. Many people **travel** by car. (*Travelling Around*, FV, Level 10, p 4)

The effect of these modifications on comprehension was considerable and can be linked to the reason for modifying the original text version. For instance, the data shows that a modification in tense due to perceived semantic complexity often resulted in higher levels of comprehension when compared to the original versions. In contrast, type (ii) changes often resulted in small or insignificant impact on student comprehension.

Ambiguous use of pronouns

An analysis of the students' responses to comprehension questions designed to investigate the possible relationship between pronoun versus noun and comprehension suggests that in specific instances the use of pronouns in original text versions created ambiguity and lowered comprehensibility of texts. The data shows that modifications made to the original version of the texts involving replacing a pronoun with a noun reduced ambiguity and resulted in increased levels of comprehension. Examples of modifications that resulted in improved comprehension include:

When the petrol is burnt it makes harmful gases. **It** can also make some people sick. (*Travelling Around*, OT, Level 10, p 7)
When the petrol is burnt it makes harmful gases. **These gases** can also make some people sick. (*Travelling Around*, MV, Level 10, p 7)
When the petrol is burnt it makes harmful gases, **which** can also make some people sick. (*Travelling Around*, FV, Level 10, p 7)

It makes holes in the rock. (*Caves*, OT, Level 6, p 13)
Carbonic acid makes holes in the rock. (*Caves*, MV, Level 6, p 13)
Carbonic acid eats away the rock. **It** makes holes in the rock. (*Caves*, FV, Level 6, p 13)

Vocabulary replaced with naturally occurring language

The data suggests a link between comprehension and the use of everyday or naturally occurring language. For example, one ESL learner provided an inaccurate response to a vocabulary comprehension question that related directly to the clause *"It was a black night"* (*Noises in the Night*, OT, Level 6). Another ESB student, while correctly answering the same comprehension question, noted that the expression *"It was a black night"* had created confusion, qualifying this by stating, *"It made me think of a knight on a horse"* (year 5 ESB learner). This data shows the importance of pre-teaching linguistic features such as more unfamiliar language before reading the text, to improve comprehensibility.

Use of literary language

The use of literary language was particularly problematic for both ESB and ESL learners. An example of this is the use of *"the coming of the new year"* in the factual text *Celebrating New Year* (Level 6). All students assessed against the original version of the text were asked comprehension questions to ascertain their understanding of *"the coming of the new year"*. Both ESB and ESL students misunderstood its meaning. In contrast, no student assessed against the modified version of the text in which *"the coming"* was deleted responded incorrectly to the same question. Other examples of literary language that appear to have negatively affected comprehension or were identified by students as problematic include:

He **lay still**. (*The Call of the Wolf*, OT and MV, Level 12, p 4)

Women had **to fight for the right** to vote. (*Voting*, OT and MV Level 10, p 13)

Then Dad **sat** the seaweed on top of her fish. (*Dad and Dan Go Fishing*, OT, Level 6, p 16)

Literary language is a feature of many of the text types that students will encounter at school and in their wider reading. While the University found some instances of literary language that caused comprehension problems for some students trialled, it was considered a significant enough feature of some text types to maintain the language. Also, many instances of literary language were retained because of vocabulary restrictions. This data shows the importance of pre-teaching linguistic features

such as literary language. Literary language that occurs in the books is identified and discussed in the relevant teacher's guide.

Language replaced with subject-specific vocabulary to reduce ambiguity

Where deemed appropriate, language in factual texts that was perceived to be highly ambiguous by the researchers was replaced with subject-specific or technical vocabulary. For example:

> **A lot of people** go there to ride their skateboards and to be with groups of people.
> (*Skateboarding*, OT, Level 7, p 7)
> **Skateboarders** go there to ride their skateboards and to be with groups of people.
> (*Skateboarding*, MV, Level 7, p 7)
> **A lot of people** go there to ride their skateboards and to be with groups of **skateboarders**.
> (*Skateboarding*, FV, Level 7, p 7)

Authenticity and Richness of Language

An area of weakness of some factual texts was the oversimplification of concepts, often resulting in inauthentic language and poor models of language (Unsworth, 1993).

The use of restrictive/controlled word lists and the 1:16 new word ratio may account for some of the original factual texts lacking authentic and naturally occurring language. The research findings suggest that an overly zealous application of this ratio is counter-productive to reading comprehension and works against the general purpose of *Fast Forward*, which is to provide struggling readers with stimulating texts.

Pictorial Support (pictures, illustrations and photos)

The print features (ie number of pages, words and lines on page, type, colour and size of font, spaces between words, placement of phrases and sentences, placement of print and illustrations, use of reading frames) of the texts were found to be a very positive feature of the texts the University examined (Fountas and Pinnell, 1999).

However, in some texts there existed the possibility to expand or elaborate on the meaning of the written text by including maps, charts or diagrams. For example, in the original text *Celebrating New Year*, the Fact Box on page 7 provided information about a sophisticated concept, specifically time zones. The written information was able to be supplemented by a map clearly showing the location of the cities the written text makes reference to, namely Kiribati and Samoa.

The University recommended considered responses to the following questions developed by one of the research team members, Dr Merle Illes, when making decisions in relation to the placement of phrases and non-verbal information in non fiction texts:

- How much of the page does the reader have to read?
- Does the reader have to take in the whole page?
- Does the reader have to take in a double page spread?
- Does the illustration add more meaning to the spoken text and therefore should the illustrations come before or after the written text?
- Or do the illustrations give the struggling reader clues about the written text and therefore should the illustrations come first? If the illustrations add more meaning then they should go after the written text.

Topic Appeal

Fast Forward is based on the belief that interesting and stimulating texts are rare for middle years children who are experiencing difficulties with reading. As a result, the research sought to uncover student attitudes towards the texts. The data shows quite overwhelmingly that the students were generally favourably disposed towards the fiction and factual texts. Therefore, it would seem that most of the trialled texts can be described as 'high interest level' texts.

Issues in relation to student attitudes and language background, gender, age and socio-economic background have been identified.

Attitude and language background

The data shows that language background had no obvious bearing on students' attitude towards texts. Students who expressed positive attitudes towards the texts were both ESB and ESL learners. Similarly, both ESL and ESB students disliked the least popular texts.

Attitude and gender

The data does not suggest a strong relationship between interest level and gender. Generally, the most popular texts, such as *Animal Hospital* (Level 10), *Surviving a Tsunami* (Level 10), *Join Up Now* (Level 10), *Shark* (Level 10), *The Call of The Wolf* (Level 12), *Sheep Station* (Level 8), *Animal Disguises* (Level 8) and *The Mystery of the Missing Bike* (Level 8), were liked by both girls and boys. Similarly, both girls and boys disliked the least popular texts. These texts include: *Harry Helps Out* (Level 7), *At The Shops* (Level 6), and *Ben Fox Saves The Day* (Level 6).

Attitude and age

There is some evidence to suggest a relationship between attitude and interest level. Year 8 ESL students were particularly forthcoming in offering opinions about the age appropriateness of specific texts. For example, most year 8 ESL students indicated that most texts – fiction texts in particular – at levels 6, 7 and 8, were more suited to primary-aged students in years 3−6. The year 8 ESL students identified the following texts as more suitable for younger readers: *Bertha* (Level 8), *Bridges* (Level 6), *Anna Goes to the Zoo* (Level 6), *Ben Fox Saves the Day* (Level 6), *Harry Helps Out* (Level 7), *Dad and Dan Go Fishing* (Level 6) and *Noises in the Night* (Level 6).

These findings highlight the need to keep content high in factual texts, however to also maintain a level of sophistication of content appropriate to the age of readers in the middle years of schooling.

Attitude and socio-economic status

There is insufficient data to draw reliable conclusions concerning the relationship between attitude and socio-economic status.

Relevance and Suitability of Topics and Concepts

Generally, students appeared to bring some previous knowledge to texts, in particular factual texts. This would appear to suggest that themes, concepts and topics are generally culturally appropriate and linked to curriculum content. However, some issues in relation to ESL learners, specifically new-arrival ESL learners, were identified in the trialling of texts. Some factual texts (eg *Sheep Station*, Level 8) trialled with new-arrival ESL students discussed topics that were very unfamiliar to the students. The University does not suggest the exclusion of texts on the basis of students' existing background knowledge, rather it is recommended that the importance of building students' background topic knowledge before reading a text is made very clear in the teacher's guides (Garibaldi, 1994, p 116; Gibbons, 2002, p 83).

The trialling of Level 7 texts also revealed interesting issues concerning the suitability of concepts. Overall, the concepts in texts at levels 6, 7, 8, 10, 12 and 13 appear to be age-appropriate in terms of content. However, two year 3 and 4 teachers indicated that some concepts at Level 7 texts appeared to be too sophisticated for year 3 and 4 students who were reading at Level 7. For example, the factual text *Who Are You?* makes passing reference to the concept of 'genes'. This scientific concept requires pre-teaching before the child meets the lexical item in the text. Similarly, the Level 8 factual text *Making a Cake* refers to the scientific concepts of chemical and physical change. It is important that such concepts be discussed prior to reading the text.

Text Organisation

The overall organisation of the texts is a positive feature of the samples the University examined at levels 6, 7, 8, 10, 12 and 13. Information in the factual texts is generally clear and well organised. All texts include many of the most useful key elements of factual texts (title page, contents page, chapter headings, glossary of terms and index). Some texts also include a summary chapter in which key information is presented in dot-point format. Similarly, the organisation of the fiction texts is a positive feature of *Fast Forward*. Fiction texts include elements of short chapter books, namely contents page

and chapter headings. Many of the texts have three to five chapters organised chronologically that build on one another and have an orientation, complication and resolution narrative structure.

Use of Signalling Devices

A range of appropriate signalling devices is evident in most fiction and factual texts, including titles, chapter headings, topic sentences and suitable cohesive devices.

Titles and chapter headings

Titles and chapter headings cue the reader to what the text might be about. Therefore, clear and accurate chapter headings are vital, particularly for struggling readers reading texts at lower levels (Szymusiak and Sibberson, 2001). Generally, the titles and chapter headings reviewed are appropriate, however some texts include ambiguous titles and chapter headings. For example, the Level 8 text *Hot and Cold* suggests that the text might be about hot and cold objects, but in fact the text discusses how air temperature is measured and extreme climates in different parts of the world. A further example of an ambiguous title is the Level 7 fiction text *Max and the Tornado*. The title and the illustrations on the cover of this text suggest that the text will be about a boy named Max, whereas Max is the boy's dog.

Topic sentences and cohesion

An area of weakness of some factual texts was the lack of topic sentences. Specifically, topic sentences were added to original texts to improve overall textual cohesion and more importantly to introduce new knowledge that was later expanded and elaborated upon in the original text version.

Use of Clear Instructional Devices

A positive feature of the factual texts is the use of instructional devices such as glossary of terms, index, fact boxes, contents page, use of photographic images and illustrations, chapter headings, summary charts, maps, diagrams and captions.

Conceptual Density

Evaluation of the factual texts in relation to conceptual density, that is the interval between the introduction and elaboration of new concepts and topics (Gibbons, 2002, p 100), suggests that an area of weakness in many texts is the lack of taxonomic development or progression of concepts from broad concepts at the point of entry. For example, the Level 7 factual text *Ice On Earth* discusses ice sheets, however does not explicitly describe ice sheets. As a result, the concept of ice sheets remains unclear to the reader (unless the reader has very sound prior knowledge of ice sheets) and as a result overall comprehension is diminished. This finding demonstrates the need for pre-teaching and discussion of background knowledge prior to reading.

OTHER RELEVANT FINDINGS BASED ON THE TRIALLING OF LEVELS 6, 7, 8, 10 AND 12 TEXTS

The data collected provides useful information about two other features of texts, namely problematic vocabulary items and explication, that have implications for teaching ESB and ESL struggling readers.

Problematic Vocabulary Items

Students identified problematic vocabulary items in the texts after reading. Many of the vocabulary items identified by both ESL and ESB students as 'hard' or 'tricky' include:
- Subject-specific vocabulary or technical language (eg carbon dioxide, chemical, Fahrenheit, Celsius, camouflage, tawny frogmouth, disguise, mustering, genes, language, customs)
- Vocabulary with unusual spelling patterns (eg knelt, caught, attacked, idea)
- Names of countries or cities (eg Kiribati is an example of unconventional English pronunciation – it is pronounced Kiribass not Kiribati)
- Names of characters (eg Isaac).

The data shows that at levels 6, 7 and 8 both ESB and ESL learners identified 'hard' or 'tricky' vocabulary. This demonstrates the importance of explicit pre-teaching of new vocabulary and subject-specific language to both ESB and ESL learners before reading a text.

In contrast, the majority of students who identified problematic vocabulary items and language structures at levels 10 and 12 were ESL learners. Examples of language structures identified by ESL learners at these levels include:

- 'Women had **to fight for the right** to vote' (*Voting*, OT & MV Level 10)
- '**to keep a car**' (*Travelling Around*, OT, Level 10)
- '**to run a car**' (*Travelling Around*, MV, Level 10)
- '**He lay still**' (*The Call of the Wolf*, OT & MV, Level 12)
- 'He **peered** into the box' (*Gemini*, OT & MV), Level 12)
- 'Jack grabbed the object and **studied** it' (*Gemini*, OT, Level 12)

Interestingly, these language structures are examples of literary language, which is not always appropriate for this target audience. The research shows the importance of pre-teaching literary language before reading a text with ESL learners to increase its comprehensibility.

Explication and Elaboration of Content

Modification of original text versions sometimes involved adding circumstantial information or a noun group. This modification was made to original text versions to reduce instances of ambiguity. The data shows that in most cases explication and elaboration of content such as that shown in the example below resulted in increased levels of student comprehension.

New animals arrive all the time. (*Animal Hospital*, OT, Level 10, p 10)
New animals arrive all the time **at the animal hospital.** (*Animal Hospital*, OT, Level 10, p 10)

RECOMMENDATIONS

Given the importance of providing struggling readers with highly supportive texts, particularly at the lower levels (ie levels 6, 7, 8 and 10) and the necessity of providing rich models of texts to support both reading and writing development, the University made the following recommendations:

- Modifications made to original texts be retained in the finally published version.
- A review of untrialled texts using both the matrix developed by the research team and the framework used by researchers to evaluate levels 6, 7, 8, 10, 12 and 13 texts.
- Consideration should be given by authors when writing texts for *Fast Forward* to the linguistic structures, language patterns and meanings identified by the researchers as problematic for struggling readers.

Thomson has incorporated the majority of the recommended changes to the trialled texts. In addition, Thomson has incorporated the research findings into untrialled *Fast Forward* texts across all other levels.

RELEVANT ISSUES AND THEMES

The following section explores relevant issues and themes in relation to modifications and comprehension that have emerged from the trialling of levels 6, 7, 8, 10 and 12 texts. Specifically, the report explores the possible relationship between the following themes:

- Improvement effect and types of modifications made to texts
- Improvement effect and language background
- Comprehension and gender
- Comprehension and socio-economic background.

Relationship Between Improvement Effect and Types of Modifications Made to Texts

The data suggests a possible relationship between the types of modifications made to the original version of individual texts and a measurable improvement effect (ie high, medium, small, minimal and no impact). Specifically, the data shows that a correlation probably exists between the number and type of modifications made to a text and students' reading comprehension. For example, the modifications made to texts that resulted in high improvement in reading comprehension were also texts that included a large number of problematic linguistic features and language patterns. These texts include *Move It!* (Level 6), *Harry Helps Out* (Level 7), *Ice On Earth* (Level 7) and *Voting* (Level 10).

In contrast, for texts that included only a few problematic language structures, the improvement effect on comprehension of text modification was small. Examples of such texts include *Dad and Dan Go Camping* (Level 10), *Noises in the Night* (Level 7), *Taking Off* (Level 8), *The Call of the Wolf* (Level 12) and *The Game* (Level 12).

Of particular interest is the data collected for *Shark* (Level 10, fiction). A total of four modifications were made to this text. Of this number, none were identified as particularly problematic linguistic structures, language patterns and meanings. Interestingly, the modifications made to *Shark* appear to have had no impact on students' comprehension.

For this reason the University recommended the labelling of the specific linguistic structures, language patterns and meanings identified by researchers as problematic for struggling ESB and ESL learners.

Relationship Between Improvement Effect and Language Background

There is no data to suggest a relationship between language background and improvement effect of modifications on comprehension. Rather, the data shows that students from both ESB and ESL backgrounds benefited from the modifications of the original version of the texts. This finding suggests that the linguistic features, language patterns and other structural problems of the texts represented a barrier for both ESL and ESB learners.

Relationship Between Comprehension and Gender

The data collected suggests no apparent link between gender and comprehension of either the modified or unmodified texts.

Relationship Between Comprehension and Socio-economic Background

There is insufficient data to draw conclusions about the possible link between socio-economic background and comprehension of modified and unmodified texts.

CONCLUSION

The University found that the fundamental design principle of *Fast Forward* appears to be sound and valid:
- A high-interest level, low-readability level intervention program aimed at students in the middle years of schooling or the upper years of primary school who need high level support to improve their literacy skills

The program:
- develops reading competencies with attention to the following skill areas: phonics, vocabulary, comprehension and fluency
- develops literacy skills using high interest, low readability, finely graded levelled texts that are linked to curriculum content (including relevant text types) and that are age-appropriate in terms of design and size.

The University stated:
'There are very few resources currently available in the Australian market that are specifically designed to support struggling readers or students with low literacy levels in the middle years of

schooling. On this basis, Fast Forward is quite innovative and even groundbreaking as distinct from the majority of Australian commercially produced reading resources available today. Fast Forward is therefore a unique and very commendable product aimed at supporting struggling readers in the middle years of schooling.'

Appropriate Texts for Students in the Middle Years of Schooling

In the middle years of schooling, students should be provided with a broad and rich range of texts (Winch et al, 2004). These texts should respond to various purposes for reading, namely to gain information, to understand, or to gain pleasure and enjoyment. The University's research has shown that *Fast Forward* at levels 6, 7, 8, 10, 12 and 13 responds well to this 'rule of thumb' of reading, since the series includes a range of text types. However, it is well known that reading material for students who have difficulty with reading is often unmotivating and descends into an overly didactic and formulaic mode that can be counterproductive. In general terms therefore the University found *Fast Forward* to be "a welcome and very commendable break from what dominates in the market for such readers".

Criteria for Levelling Texts

The University does propose some improvements, in addition to the specific ones noted earlier, to the design principle of the series. *Fast Forward* relies on criteria for the design of levelled texts that calls for a controlled wordlist and 1:16 new word ratio. While such criteria can be useful, the University's research found that an overly strong implementation of these principles would produce considerable problems, weakening in many cases, and defeating in other cases, the essential principle of the series itself, which is to make the texts assist readers to read. Therefore, a more wide-ranging view of text levelling, such as that set out in Brabham and Villaume (2002, p 439) would be appropriate.

In particular, the research challenges the premise of the 1:16 new word ratio. Struggling readers typically persist with reading texts that they might otherwise discard if they find the topic interesting, stimulating or engaging in some important way. There is ample evidence in the preceding data that the University's modifications to texts, which added complexity in the interests of greater clarity, in fact enhanced comprehension and on occasion even reading accuracy. The University found many of the topics, in both fiction and factual works, would not be capable of sustaining reader interest without the use of subject-specific vocabulary, and such vocabulary is on some occasions what interests readers.

Factual texts by their very nature aim to introduce new vocabulary of a technical nature, the labels for new items of information, or new ways to 'chunk' or categorise existing information, and which are indistinguishable from that new information itself. To avoid such terminology often requires writers to engage in circumlocution, or to report inaccurate information. For older readers this can result in a serious problem of disparity between language level and concepts, a problem noted by many students who rejected certain texts, saying that they were only suitable for much younger readers than themselves. Of course technical language needs explanation, exemplification, illustrations and other modes of getting meaning across. The University found some texts were excellent in this regard, but a considerable number required revision. In this respect the teacher's guides were found to be of major importance, the pre-teaching activities in particular. Relying on the teacher's guides was not found to reduce the key aim of *Fast Forward* – to produce levelled texts that make a contribution to promoting reading – but, in fact, enhance this central goal of the series.

In addition, a prescriptive use of wordlists can contradict the interactive nature of the reading process. Controlling language (Clay, 1991) involves some move away from naturally occurring language, and some reduction of literary and technical language, and each is required in appropriate measure in the appropriate texts.

For many of the very popular and good texts the University evaluated, the levelling criteria have still allowed texts that the students enjoyed reading and from which they benefited. In other cases the rigid adherence to controlled word lists and the 1:16 new word ratio seems to have contributed to development of texts that:

- lacked authentic and naturally occurring language
- did not provide rich language models
- oversimplified scientific concepts, sometimes leading to inaccurate factual information.

These research findings support Peterson's (1991) claim about the effect of readability formulas on the construction of texts:

'Readability formulas can take into account only a limited number of text features such as word difficulty, word frequency, word length and sentence length. These formulas are not designed to account for factors such as reader interest, prior knowledge, classroom instruction, text layout or illustration... Many publishers have misused readability formulas to produce textbooks that match a specific grade level. This practice has often led authors to write texts to conform to the specifications of a formula, resulting in short, choppy sentences and the avoidance of rich interesting language.' (pp 120–1)

The University found *Fast Forward* to be an excellent contribution to the available texts in the market and that the addition of a more comprehensive, or perhaps a more flexible, approach to levelling, will make further improvement and distinguish the product in critically important ways. In particular, levelling can take into account factors such as:

- Text and print features
- Vocabulary (ie difficulty of words in terms of problem solving)
- Range of high frequency words
- Range of subject-specific vocabulary
- Sentence complexity
- Content (ie concepts and themes)
- Text structure
- Language and literary features
- Themes and illustrations and relationship of text to image
- Organisation of information (ie layout and design)
- Text length

(Fountas and Pinnell, 1999, pp 17–19; Brabham and Villaume, 2002, p 439; Fry, 2002, pp 287–289).

To this end the University recommends:

- That the use of controlled wordlists be reviewed, specifically the University encourages greater flexibility in terms of permitted categories and examples of words, particularly for factual texts
- That a more comprehensive view of the basis and means for levelling of texts be adopted (see Brabham and Villaume, 2002, p 439)
- That the matrix developed by the University of Melbourne research team, *Framework for Evaluating and Modifying Levelled Texts,* be adopted as a much more elaborate guide the description and development of levelled texts
- That commissioned writers be offered professional development based on the modifications that The University made to trialled texts and the *Framework for Evaluating and Modifying Levelled Texts*
- That Thomson review writers/authors according to text type, and their characteristic use of language, as noted in the research. Some writers show considerable skill in creating supportive and comprehensible texts using controlled vocabulary lists, a skill that will be further enhanced with the use of the *Framework for Evaluating and Modifying Levelled Texts*.

Effect of Levelled Texts in Terms of Reading Accuracy and Comprehensibility

Reading accuracy

In recent research Clay (2002) argues that 90% reading accuracy is required as a basis for reading comprehension. In general terms the present research confirms Clay's principle that something like a reading accuracy of between 90–94% is needed to support comprehension. A total of 352 individual assessments were conducted on the unmodified and modified texts at levels 6, 7, 8, 10 and 12. Each comprised an assessment of reading accuracy and comprehension against a modified or unmodified version of the same text. In this large number of assessments, a total of 352 assessments, there was no evidence to question or discount Clay's claim.

The present research also supports Rog and Burton's (2001) claim that interest level and knowledge have an impact on the readability of a text. While it was not possible to accurately measure students' level of existing knowledge about a topic, a sense of students' prior knowledge was gained by asking them to rate their perceived level of topic knowledge on a scale from 1 (a lot) to 3 (nothing) before reading randomly selected factual texts. The results of this control of prior knowledge on reading suggests that students who had previous knowledge of a topic covered in a text had higher readability scores, encountered fewer difficulties in reading and understanding subject-specific or technical vocabulary than those students with smaller quantities of prior knowledge. This also demonstrates the importance of pre-teaching unfamiliar subject-specific vocabulary.

Comprehensibility

In recent work on comprehensibility, Gibbons (2004, p 100) explores and supports the claim that comprehensibility is tied to the activities teachers use and the kinds of interactions the children are engaged in around texts. In other words comprehensibility is not a free-floating quality, nor is it outside the realm of teacher intervention. Unfamiliarity with aspects of a text, such as topic knowledge, genre and language, appears to cause particular difficulties for second language learners and for ESL children there is a particular need to build this knowledge before reading a text. The present research has uncovered ample evidence of this as well.

Rather than a rigid application of levels it is therefore more appropriate to think of texts in relation to comprehensibility as being arranged on a finer level gradient, or a continuum. As part of the contribution of the University's research team to this project, they developed a *Framework for Evaluating and Modifying Levelled Texts*. This framework takes into account a much larger variety of factors in relation to the production, evaluation and modification of levelled texts and the University therefore proposes it for use in place of controlled vocabulary and new word ratios. The modifications the University made to texts can be identified in the Framework, and since in most instances most modifications improved or enhanced text comprehension, the University believes the evidence is clear that the Framework will assist considerably in achieving the goals of *Fast Forward*.

REFERENCES

Anderson, R. (1994) "Role of the reader's schema in comprehension, learning, and memory", in Ruddell, B. M., Ruddell, R. and Singer, H. (Eds.) *Theoretical models and processes of reading*. International Reading Association.

Bordieu, P., Accardo, A., Balazs, G., Beaud, S., Boudieu, E., Bourgois, P., Broccolichi, S., Cahmpagne, P., Faguer, J., Garics, S., Lenoir, R., OEuvrard, F. Pialoux, M., Pinto, L., Podalydes, D., Sayad, A., Soulie, C. and Wacquant, L. (1999) *The Weight of the World: Social Suffering in Contemporary Society*. Cambridge, UK: Polity Press.

Brabham, E. and Villaume, S. (2002) "Leveled text: The good news and the bad news", *The Reading Teacher* Vol. 55, No. 5 February 2002 pp 438–441.

Bransford, J. and Johnson, M. (1972) "Contextual prerequisites for understanding: some investigations of comprehension and recall", *Journal of Verbal Learning and Verbal Behaviour* 11(6): pp 717–726.

Carrell, P. (1988) "Interactive Text Processing: Implications for ESL/Second Language Reading Classrooms", in Carrell, P., Devine, J and Eskey, D. (Eds.) *Interactive Approaches to Second Language Reading*, Cambridge: Cambridge University Press.

Christie, F. (2005) *Language Education in the Primary Years*. Sydney: University of New South Wales Press.

Clay, M. (1991) *Becoming Literate: The Construction of Inner Control*. Portsmouth: Heinemann.

Clay, M. (1998) *By Different Paths to Common Outcomes*. Maine: Stenhouse.

Clay, M. (2002) *An Observation Survey of Early Literacy Achievement* (2nd Edition). Auckland: Heinemann.

Derewianka, B. (1990) *Exploring How Texts Work*. NSW: Primary English Teaching Association, Australia.

Fountas, I. and Pinnell, G. (1998) *Guided Reading – Good First Teaching for All Children*. Portsmouth, NH: Heinemann.

Fountas, I. and Pinnell, G. (1999) *Matching Books to Readers Using Leveled Books in Guided Reading*. Portsmouth, NH: Heinemann.

Fry, E. (2002) "Readability versus leveling", *The Reading Teacher*. Vol. 56, No.3 November 2002 pp 286–291.

Garibaldi, A. (1994) "Selecting Materials for the Reading Instruction of ESL Children", in Spangenberg-Urbschat, K. and Pritchard, R. (Eds.) *Kids Come in All Languages: Reading Instruction for ESL Students*. Newark, DE: International Reading Association.

Gee, J. (2004) *Situated Language and Learning: A Critique of Traditional Schooling* New York, London: Routledge.

Gibbons, P. (2002) *Scaffolding Language Scaffolding Learning – Teaching Second Language Learners in the Mainstream Classroom*. Portsmouth, NH: Heinemann.

Graves, M. Cooke, C. and LaBerge, M. (1983) "Effects of previewing difficult short stories on low ability junior high school students' comprehension, recall and attitudes", *Reading Research Quarterly* 18(3): pp 262–276.

Green, D. (2003) "Children and print: reading", in Green, D. and Campbell, R. (Eds.) (2nd edition). *Literacies and Learners Current Perspectives*. Australia: Pearson Education.

Harrison, C. (2004) *Understanding Reading Development*. London: Paul Chapman.

Hill, S. (2001) "Questioning text levels", *The Australian Journal of Language and Literacy*. Vol. 24 No. 1, February 2001. pp 8–20.

Hornsby, D. (2000) *A Closer Look at Guided Reading*. Armadale, Victoria: Eleanor Curtain.

Koda, K. (2005) *Insights into Second Language Reading – A Cross Linguistic Approach*. Cambridge: Cambridge University Press.

Luke, A. and Freebody, P. (1991) "Reading Positions and Practices in the Classroom", *Curriculum Inquiry*. 21:4.

Luke, A. and Freebody, P. (1997) "Shaping the social practices of reading", in Muspratt, S., Luke, A., and Freebody, P. (Eds.) *Constructing critical literacies: Teaching and learning textual practice*. St. Leonards, NSW: Allen & Unwin.

Neumann, S. (2001) "The role of knowledge in literacy", *Reading Research Quarterly*. Vol. 36, No. 4, pp 468–475.

New Zealand Ministry of Education (1997) *Reading for Life*. Wellington, New Zealand: New Zealand Ministry of Education.

Peterson, B. (1991) "Selecting Books for beginning readers", in De Ford, D. Lyons, C. and Pinnell, G. (Eds.) *Bridges to literacy: Learning from Reading Recovery*. Heinemann: Portmouth, NH. pp 119–147.

Rog, L. and Burton, W. (2001) "Matching texts and readers: Leveling early reading materials for assessment and instruction", *The Reading Teacher*. Vol. 55, No. 4 December 2001/January 2002. International Reading Association. pp 348–356.

Sharpe, T. (2001) "Scaffolding in action Snapshots from the classroom", in Hammond, J (Ed.) *Scaffolding teaching and learning in language and literacy education*. NSW, Australia: Primary Teaching English Association.

Stanovich, K. (1986) "Matthew effects in reading: some consequences of individual differences in the acquisition of literacy", *Reading Research Quarterly*. Vol. 21 No 4 pp 369–406.

Szymusiak, K. and Sibberson, F. (2001) *Beyond Leveled Books: Supporting Transitional Readers in Grades 2–5*. Canada: Pembroke Publishers Limited.

Tatham, S. (1970) "Reading comprehension of materials written with select oral language patterns: a study at grades two and four", *Reading Research Quarterly*. Vol. 5 No 3 pp 402–426.

Unsworth, L. (1993) "Choosing and Using Information Books in Junior Primary Science", in Unsworth, L. (Ed) *Literacy Learning and Teaching Language as Social Practice in the Primary School*. South Melbourne: Macmillan Education Australia.

Wallace, C. (1992) *Reading*. Oxford, UK: Oxford University Press.

Weaver, B. (2000) *Leveling Books K–6 – Matching Readers to Text*. Delaware, USA: International Reading Association.

Winch, G., Johnston, R., March, P., Ljungdahl, L. and Holliday, M. (2004) *Literacy Reading, Writing and Children's Literature*. (2nd Edition) South Melbourne, Victoria: Oxford University Press.