

Explicit Strategy Training for Teaching Reading: Some Classroom Findings

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This paper presents the findings of a strategy training exercise undertaken with students on a reading/writing English proficiency course at the National University of Singapore. The motivation for the training arose out of this teacher/researcher's observation that students used mainly sentence-level content-based reading strategies. Students did not attempt a holistic understanding of text and failed to see the connections between different parts of the text. Three types of data were collected at the pre- and post-training phases of the study. Data from both phases are analysed to show that explicit strategy training has a positive effect on students' understanding of expository texts.

INTRODUCTION

The impetus for this study arose out of this teacher-researcher's observation that students on a reading/writing English proficiency course at the National University of Singapore used mainly sentence-level content-based reading strategies. They did not attempt a holistic understanding of text and failed to see the connections between different parts of a text. This study shows how students were taken through a strategy training exercise to raise their awareness of reading texts for global understanding. This paper is divided into three parts: the first phase of the research is the pre-strategy training; the second is the strategy training during course work; the third is the post-strategy training. The pre- and post-strategy training data are analysed to show the effect of training strategy.

Strategy Training - A Review

Before presenting the research design it is important to understand the hypothesis on which this study is based and why specifically

strategy training was adopted. The following sections preview studies that have been carried out on strategy training.

There is strong evidence that training students to become aware of the way texts are structured and their organisation signalled leads to better recall of information and better task performance using that information (Pearson & Fielding, 1991). In the case of expository prose, research has demonstrated repeatedly that students with a better knowledge of the organisational structures in a given text (comparison-contrast, classification, cause-effect, problem-solution) recall more information from the text and perform better on comprehension tasks (Armbruster, Anderson, & Osterag, 1987; Carrell, 1992; Pearson & Fielding, 1991; Taylor and Samuels, 1983). In the words of Pearson and Fielding (1991: 832):

We have found incredibly positive support for just about any approach to text structure instruction for expository prose. It appears that any sort of systematic attention to clues that reveal how authors attempt to relate ideas to one another or any sort of systematic attempt to impose structure upon a text...facilitates comprehension as well as both short-term and long-term memory for the text.

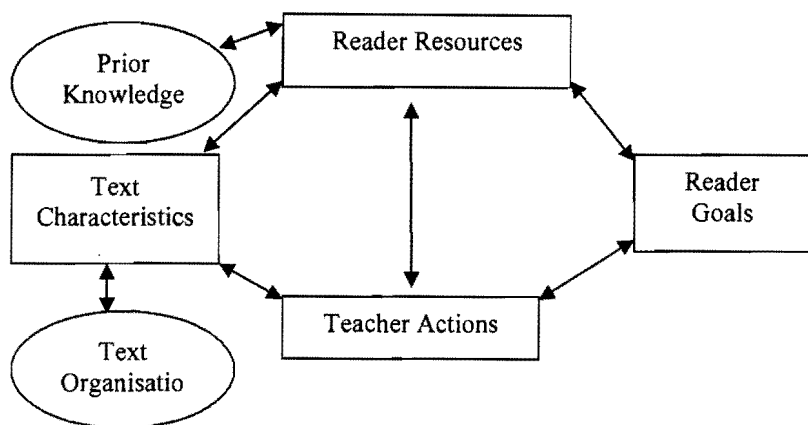
Thus the strategy training involved in this study was concerned with how a writer organises information at the paragraph levels in terms of meaning relations and how these paragraphs combine to contribute to overall organisation. This is because expository texts have certain patterns of organisation. Within individual paragraphs, several kinds of thought relationships can exist. An author can begin a paragraph by stating a problem. He could compare or contrast the problem under consideration to another situation. In subsequent paragraphs, he could discuss the causes for the problems followed by solutions. So the strategy training methodology suggested here is that instead of dealing directly with content, an alternative method is to sensitise students to the way a writer organises information and guide them to interact with the text to access the information. In this way students are not merely looking for content but are more involved with the text. They are not merely extracting information but doing so with understanding. Such an involvement would help information understanding and retention.

Crombie (1985) is of the opinion that coherent discourse is characterised by a number of simple operations or semantic relations. She further adds that “an understanding of these relationships is clearly an important aspect of an understanding of the dynamics of linguistic communication” (Crombie, 1985: 33). Where these relations are not explicitly signalled by cohesive devices, she believes, like Hoey (1983) and Brown and Yule (1983), that they have to be worked out with reference to a wider context. Such relations are “few”, “finite” and “quite manageable” (Crombie, 1985: 33) for the purpose of language teaching, in the case of this study for teaching reading. According to Dymock (1999: 175),

Some readers intuitively acquire text structure knowledge through continual exposure to different text structures. However, many readers are not so lucky. It is up to the classroom teacher to inform the not-so-lucky students about different text structures and how to look for these structures as they read.

Strategy training was based on some of the concepts from the schema theory represented in Figure 1. The Schema Interactive Model of reading represents learning from text as a process in which readers bring together all their resources to interact with the text to create meaning. It represents three categories in which teachers can help their students learn from text: Text Characteristics, Reader Resources and Reader Goals. It is a known fact that **Teacher actions** affect all other components of learning from text. The teacher plays an important role in choosing texts, helping students develop reader resources and indirectly setting goals by selecting and administering tests (Yopp & Singer, 1985).

Figure 1. Schema interactive model of reading



(Simonsen & Singer, 1992: 203)

Similarly, it is the teacher who can exploit **text characteristics** for raising students' awareness of how certain text features lend themselves to particular types of reading strategies. One of the important characteristics of a text is its organisation. The strategy training in this study mainly focused on the organisation of information in expository texts. Knowledge of text characteristics and knowledge of reading strategies appear to be more important (Schoonen, Hulstijn, & Bossers, 1998) with regard to metacognitive knowledge.

The concepts from the schema theory relevant to this training are the concepts of *prior knowledge* and *text characteristics*. Carrell (1987) and Omaggio (1996) mention two kinds of schemata under prior knowledge: formal and content schemata. The focus of the training was on formal schemata, about raising students' awareness of how expository texts are organised by the writer by using meaning relations. It is the way information is organised that gives a text its structure or unity. Teacher actions consist of raising students' awareness of this organisation by analysing the characteristics of texts.

Text structure here refers to the unity in meaning (Halliday & Hasan, 1976) that can be found in expository texts, what Widdowson (1979) calls rhetorical patterns or what Vacca & Vacca

(1989) call text patterns. It is these patterns that can guide students to make the required connections while reading. According to Swaffer, Arens, and Byrnes (1991: 26), “Rhetorical organisation refers to the way the writer connects the different macro propositions in a text using different relations to support the macro message he wants to convey”. The ability to discern relationships between the various parts of a longer text is both important and complex. Students need to comprehend the contribution made by each part to the macro gist or argument in the text and the accumulating evidence of a writer’s point of view.

Expository texts consist of highly ordered consistent patterns of organisation. An identification of these patterns of reason-result, cause-effect, problem-solution relations can help students comprehend a text. These patterns or semantic/meaning relations or logical relationships are represented by certain words and phrases such as *but, as a result of, because etc* and other lexical words that are used in a text. These connectors will link ideas within and across sentences. The actual number of such connectors is limited. If the students can learn to identify a set of logical relationships with the help of these connectors, they will be able to cope with any semantic relation in their readings. More importantly, through these relationships, they will be able to interact meaningfully with a text and see for themselves the writer’s connections between different parts of a text. It is on these concepts of text characteristics that the strategy training was based.

In summary, strategy training on text organisation forms an important component of reading skills for NUS students. This is because “knowledge of text structure and knowledge of strategies were the best indicators of metacognitive knowledge about reading” (Grabe & Stoller, 2002: 147).

Objectives

The focus of this study is in examining the outcome of a strategy training based on the following questions:

- To what extent can students be made aware of generic patterns of information organisation¹ in expository texts?
- To what extent can students be sensitised to perceive and internalise these patterns of organisation?
- To what extent can raising students' awareness about these patterns of organisation have a positive effect on their reading comprehension?

RESEARCH DESIGN

The student participants involved in the study were 13 first-year undergraduates from the Arts and Social Sciences Faculty, National University of Singapore. These students were assigned to an academic writing and English proficiency course called EA1101 at the Centre for English Language Communication. The focus was mainly on teaching writing strategies and raising their English proficiency to meet their academic demands.

The Singaporean students on the course are the main focus of this study. Such a group is more homogenous in terms of schooling and language exposure. These students had had twelve years of schooling with six years in primary, four years in secondary and two years at the junior college levels. The kind of reading practice that they had been exposed to was mainly comprehension exercises consisting of local, inferential and evaluative types of questions. They were the target group for these reasons.

The same group of students were involved in the three phases of strategy training.

¹ The phrase "generic patterns of information organisation" for the purpose of this study mainly refers to the recurring semantic patterns of meaning relations such as problem-solution, reasons-result, comparison, contrast and which can be typically found in expository texts at the level of the paragraph.

Instrumentation

Preliminaries

A preliminary exercise on a small scale was carried out to test the hypothesis that students tended to read line by line and paraphrase content. At this phase, think-aloud data about students' reading methods was collected from this group of 13 students. More than 90% of the students used mainly sentence-level content-based reading methods. The data show that students mainly paraphrased by reproducing content. One student's comment on the reading method she uses is, "...so basically, I read through, pause at different words when I don't understand and read through again". Another mainly paraphrased content saying, "this paragraph, basically talks about abortion and contraception. It is about moral responsibility, talking about good and bad....." and yet another,

I finished the first paragraph regarding cloning. It is a futuristic problem. This is the second time I'm reading through this paragraph. I think I can understand better after this. This paragraph is about this, regarding cloning. The first paragraph is talking about whether society should carry on with cloning or not and society should decide what good there will be from cloning.

This seemed to be the general trend in the students' think-aloud protocols. Students obviously were not aware of reading texts for holistic understanding based on a writer's organisation of information.

Armed with the above findings, the study moved on to the next phase "for the express purpose of taking action to promote social change" (Greenwood & Levin, 1998: 6) in the classroom. Action research such as this, which involves intervention, falls into a category called pre-experimental research as it deals with a single classroom rather than with an experimental and a control group.

Pre- and Post-Strategy Training Phases

The instruments used at the pre- and post-strategy training phases of the study were based on two different expository texts of around 700 words titled, "Cloning: A Futuristic Problem" (for pre-test) and

“Population and Natural Resources”(for post-test). Three types of data were collected at the pre- and post-training phases of the study to assess the effect of strategy training.

- A verbal think-aloud based on reading strategies used by students was recorded in a language laboratory. Students were asked to state aloud their thoughts about the reading methods they used and about their understanding of the text every time they paused and at the end of each paragraph. The purpose was to investigate changes in students’ reading methods before and after the strategy training.
- Written answers to two questions investigating students’ understanding of the writer’s information organisation at the paragraph level and awareness of relations between paragraphs.
- A hierarchical summary writing task depicting awareness of writer’s thesis and information organisation at the macro/textual level.

The verbal think-aloud was used because it would provide direct input from students about their reading methods. Think-alouds “can open a window on a learner’s thinking processes, revealing strategies” (Chamot, 1995: 2). Students were given an expository text of around 700 words and asked to state aloud their thoughts about the reading methods they used and their understanding of the text into a cassette tape. The objective of the exercise was made clear to them. They were informed that their input would be valuable for developing appropriate course materials for teaching reading. The sessions were recorded in a language laboratory.

Prior to recording, students were given practice in the use of the recording equipment. They were also given a short sample text to practise their think-aloud. This researcher monitored their think-aloud during this practice session and gently reminded them to talk about their reading methods. But during the actual recording, there was no intervention as the objective was to obtain natural and realistic data without disturbing their thought processes. The

instructions for students' think-aloud can be found in Appendix 1. This activity took around 50 minutes including the practice session.

After this the students went on to do the two written activities. Activity two consisted of answers to two written questions focusing on students' understanding of paragraph level information organisation and the relations between the different paragraphs. Activity three was a written hierarchical summary based on the information organisation of the whole text. The same procedure was followed, using a different text, at the post strategy training phase of the study. The questions for activity two and three can be found in Appendix 1.

Strategy Training Phase

Strategy training was based on analysis of five texts (Table 1). Training extended over a period of five weeks. The total hours spent on training was between 10-15 hours. The chosen texts had to satisfy the following criteria.

- The background information was familiar to students, so that this aspect would not affect the outcome of the study..
- The texts represented some characteristics of discourse especially in relation to coherence and organisation.

Table 1. Texts used for strategy training

Number of text	Text Title	Number of words	Genre type
1	Genetically Modified Food	622	Discussion
2	Food Fight	630	Discussion
	The Family and Socialization	716	Exposition
3	Social Learning School and Language	825	Exposition
4	Food Production and its Consequences	750	Discussion
5			

Student handout - list of meaning relations

Students were also familiarised with meaning relations and their associated logical connectors through an explanation of the following handout.

List of Meaning Relations

Agreement	Evaluation
Claim	Hypothetical (what if situation)
Counter-claim	Orientation
Contrast	Prediction
Comment	Reason/Cause
Comparison	Result/Effect
Conclusion	Resolution
Elaboration:	Real (quite likely situation)
Support (arguments, ideas)	Re-statement
Evidence (factual information)	Situation
	Solution

Jordan (1996: 9) describes meaning relations as academic concepts and functions and uses the terms “define”, “exemplify”, “assume”, “hypothesize”, “compare”, etc. Similarly, Mann and Thompson (1986, 1988) in their Rhetorical Structure Analysis (RST) mention Claim and Evidence and Cause and Result. This study has drawn upon some of these studies to compile a list of meaning relations using simplified terminology that students can identify with.

Stages of strategy training

The five steps which guided students in their strategy training are explained below.

Step 1

As a first step students were asked to look at the title of the text and generate questions that the text is likely to provide answers to. The purpose was to activate students' prior knowledge about the text. Next, they were asked to skim through the assigned text (Text One: Food Production and Its Consequences) and generate questions that the text provides answers to and modify earlier questions if

necessary. The purpose of this activity was to guide students' expectations about the text and to trigger their background knowledge about the topic.

Step 2

The expansion of the acronym SUIGM was used to explain instructions under step two. The purpose of this activity was to raise students' awareness of how the writer organises information at the paragraph level.

- Skim:** Students were asked to skim through the first paragraph.
- Underline:** Next, they were asked to underline logical connectors like but, as a result, etc and cohesive markers like in each case, for, against etc that the writer uses to connect his ideas.
- Identify:** Using the connectors as clues, students identified meaning relations the writer uses to organise information.
- Generate:** Students generated "WH" questions to identify the writer's focus in the paragraph such as the claim the writer is making and how he supports it etc.
- Main idea** Using the above meaning relations as clues, students came up with the main idea for each paragraph. For example, the meaning relations should guide them to focus on the claims and conclusions made by the writer and to overlook the supporting details such as examples and evidence. The objective was to guide them to differentiate between main and supporting ideas.

Step 3

In this step, students discussed the analysis for the rest of the paragraphs. This was generally done as a group activity.

Step 4

After the paragraph level analysis, discussion focused on the writer's thesis and how paragraphs relate and combine to support

the thesis. Based on their understanding of the text, an information flow diagram representing the writer's thesis and the connections between the different parts of the text was drawn. This was an interactive class activity with the teacher drawing the information flow diagram on the board with input from the students.

Step 5

The final step consisted of discussion of answers to the different questions, generally done as a group activity, followed by a discussion with the tutor.

Text: Food Production and its Consequences

- Q1 How does the writer organise his ideas in paragraph 2?
- Q2 Look at paragraphs 3 and 4. What purpose do these paragraphs serve in the organisation of the text?
- Q3 Look at paragraph 5. How does it differ in organisation from paragraphs 3 and 4?
- Q4 Look at paragraph 6. How would the organisation of the text be affected if you eliminated this paragraph?
- Q5 How important are paragraphs 5 and 7 in the organisation of information in the whole text?
- Q6 From your understanding of the text and based on your information flow diagram, what is the writer's main thesis. How does he advance/support/extend his thesis?

The purpose of questions 1-5 was mainly to raise students' awareness further about information organisation at the level of the paragraphs and also about how paragraphs function in relation to the whole text. The purpose of question six was based on the premise that since students had analysed the whole text, the understanding derived should enable them to identify the writer's thesis and the way he supports it at the level of the paragraphs. It must be mentioned that the training was not as linear as it reads in the above description. It was more interactive.

Teacher explanation

Students were explicitly informed about the purpose of the strategy (Wenden, 1991) and the need for reading for organisation. The steps involved in the training were teacher modelling, scaffolding,

individual, group and teacher interaction, learner control and independence. With the first text and with the first few paragraphs in the text, training consisted of the teacher modelling steps one and two. Modelling consisted of the teacher talking aloud, elaborating and demonstrating the processes involved in **SUIGM** based on Janzen's (1996) method of modelling strategic reading behaviours through teacher speak-alouds.

The above formed the basis for scaffolding activity with the teacher questioning and guiding students individually first and then in their groups. Bruner (1987), elaborating Vygotsky's (1986) concept of scaffolding, defines it "as the use of an aiding peer until such a time as the learner is able to master his own action through his own consciousness and control" (Vygotsky, 1986: 24). Students thus learnt to work in groups followed by interactions with the tutor. This was the pattern of activity with the first three texts. When confidence and comfort level in the use of the strategy was achieved, the students were asked to analyse the last two texts on their own.

When teachers explicitly guide students on how to analyse texts for organisation, a positive effect has been found. Pearson and Fielding (1991) provide data which show a positive result on achievement measures for explicit teacher explanation. "The effective teacher will help students develop an awareness of reading strategies necessary for successful interaction with text" (Urquhart & Weir, 1998: 227). Cohen (1998: 19) reports that "explicitly describing, discussing and reinforcing strategies in the classroom – and thus raising them to the level of conscious awareness – can have a direct payoff in student outcomes".

A sample of one of the texts analysed can be found in Appendix 2. Five such texts were analysed for the purpose of strategy training. Pre-training data was collected in the second week of the course. Data was again collected after the strategy training in the eleventh week of the course. A different text, "Population and Natural Resources", was used but the instructions for the think aloud activity and type of questions for the written activities remained unchanged.

FINDINGS

Pre- and post-training data are analysed based on the three questions that guided strategy training.

- To what extent are students aware of the generic patterns of information organisation in expository texts?
- To what extent can students be sensitised to perceive and internalise these patterns of organisation?
- To what extent can raising students' awareness about these patterns of organisation have a positive effect on their reading comprehension?

Data sampling

Of the 13 students only 6 were present for all the training sessions. Since output of data from the 6 participants was voluminous and since the analysis would be more descriptive than statistical, it was decided that data from only two randomly chosen informants would be analysed for the purpose of this study. Having examined data from all 6 informants the evidence reproduced below can be considered to be a fair representation of students' understanding after strategy training.

Analysis of think-aloud data

Students were given a passage of around 700 words and asked to speak aloud their thoughts about their reading strategies into a tape whenever they paused and at the end of each paragraph. Excerpts from their think-alouds from both the pre- and post-training phases are given (Tables 2A, 2B). The analysis is based on the question "To what extent are students aware of generic patterns of information organisation in expository texts?"

Table 2A. Think-aloud data - Informant One

Pre-training Data: Think aloud Text: Cloning-A Futuristic Problem	Post-training Data: Think aloud Text: Population and Natural Resources
<i>The first paragraph talks about..... (paraphrases content)</i>	<i>I skim through the text, read the first few lines and last few lines to get an idea of what the text is about.</i>
<i>Paragraph 4 tells us.....</i>	<i>Now I'll read paragraphs one by one, find the connectors and the meaning relations....</i>
<i>He tells us that "it is worth....." (reproduces from text)</i>	<i>In paragraph 2, the author makes a claim, The connector is hence which means.....The next connector is "medical evidence". It acts as evidence and support for his claim....</i>

Table 2B. Think-aloud data - Informant Two

Pre-training Data: Think-aloud	Post-training Data: Think aloud
<i>After skimming through, I will read the paragraphs line by line. The first view says it is alright to clone..... For this paragraph I had to read two times because it is quite long and complex.....</i>	<i>When I look at the title, I will generate questions in my mind like....</i>
	<i>When I look at the next line "scarcity of food.....population", I pause because it's a claim.....</i>
	<i>I paused at the line "on the other hand....." This is a meaning relation..... because it is a counter claim to the first claim.....</i>
	<i>I stopped in paragraph 5, the first line "the more affluent a country is"</i>
	<i>I think this should be claim, because as I read on, the rest of the paragraph is giving reasons and evidence to support this claim</i>

As can be seen from the pre-training data in Tables 2A and 2B, the two informants use local, content-based strategies such as reading line by line, re-reading, reproducing, paraphrasing and identifying what the text says as shown in the use of “the first paragraph talks about”, “read the paragraphs line by line”, “I had to read two times” and “I will read the paragraph line by line”, etc.

But the evidence from the post-training think-aloud such as “I skim through the text” and “I will generate questions” shows informants now attempt global understanding of the text. They are able to identify how the writer organises information in terms of generic meaning patterns such as claims, evidence, reasons and support instead of just content. Evidence also shows awareness of features /functions of paragraphs as the informants are able to identify what the text is doing in terms of meaning relations and not just what the text is saying. Informants still paraphrase but do so in the context of meaning relations.

Analysis of reading for organisation

The purpose of the investigation at this phase can best be represented by the question, “To what extent can students be sensitised to perceive and internalise these patterns of organisation?”

Data for the above question was obtained by asking students to answer two questions on information organisation in a text. A comparison of the evidence from both pre- and post-training phases (Tables 3A and 3B), shows that the informants have a better understanding of how the writer organises information at the level of the paragraph after the training. They are able to distinguish between main points, claims and supporting details such as examples and evidence. They still paraphrase, but do so in the context of meaning relations that the writer uses.

For example, Informant One says “In paragraph one, the writer makes a **claim** that is a **result of**He then goes on to give **examples** of..... This is to **strengthen** the idea that...”, which shows that the student now has a better understanding of how the writer organises information at the level of the paragraph.

They also show a better understanding of how paragraphs combine and relate to the earlier paragraph. For example, Informant One wrote “..... **both paras are interconnected and serve as a support** why there is scarcity of food...These paragraphs relate to para 3 by stating that

And Informant Two wrote “These two paragraphs show.....They act as an **elaboration** on the importance of the wealth of a country. They are also a continuation of the **evidence and elaboration** of the claim made in paragraph 3 that....”

Table 3A. Written answers - Informant One

Pre-training: Reading for Organisation Text: Cloning – A Futuristic Problem	Post-training: Reading for Organisation Text: Population and Natural Resources
<p><i>Q1 How does the writer organise his ideas in paragraph one?</i></p> <p>The writer focuses on..... He states that..... He mainly talks about.....</p> <p><i>Q2 Look at paragraph 2. What do you think is the writer's purpose in introducing this paragraph? How does he link paragraphs 1 and 2</i></p> <p>His purpose is to tells us that there is strong support.... He also uses this paragraph to substantiate his point.</p>	<p><i>A: In paragraph one, the writer makes a claim that is a result ofHe then goes on to give examples of..... This is to strengthen the idea that.....</i></p> <p><i>Q2 Look at paragraphs 4 and 5.From the writer's point of view, what purpose do they serve in the organisation of the text? How do these paragraphs link to pargarph 3.</i></p> <p><i>A: In P4, the author makes a claim..... In paragraph 5 he makes a claim again and elaborates it further by stating..... Both paras are interconnected and serve as a support why there is scarcity of food...These paragraphs relate to para 3 by stating that</i></p>

Table 3B. Written answers - Informant Two

Pre-training: Reading for organization Cloning: A Futuristic Problem	Post-training: Reading for Organisation Population and Natural Resources
<p><i>Q1 How does the writer organize his ideas in paragraph one?</i></p> <p><i>In paragraph one, the writer is basically trying to introduce the issue of cloning. Even though the problem of cloning....</i></p> <p><i>Q2 Look at paragraph 2. What do you think is the writer's purpose in introducing this paragraph? How does he link paragraphs 1 and 2?</i></p> <p><i>He quotes what a person.....</i></p>	<p><i>In paragraph 1, he states a claim that scarcity of food and natural resources is a result of the rapid growth of population. He then goes on to give examples of what are renewable and non-renewable products...This is to strengthen the idea that there will be scarcity in resources.</i></p> <p><i>Q2 Look at paragraphs 4 and 5. From the writer's point of view, what purpose do they serve in the organisation of the text? How do these paragraphs link to paragraph 3.</i></p> <p><i>In paragraph 4 the writer is trying to show...In paragraph 5, he is trying to show... These two paragraphs show....They act as an elaboration on the importance of the wealth of a country. They are also a continuation of the evidence and elaboration of the claim made in paragraph 3 that....</i></p>

Perhaps what students need to be made aware of is how these paragraphs function at the textual level which would be in relation to the writer's thesis. The implication for the study is that the training has to explicitly focus on activating this process in their understanding.

Analysis of hierarchical summary

The purpose of hierarchical summary was to obtain information on students' understanding of the writer's thesis and macro level information organisation of the text. So students were asked to do a

summary writing task. The findings from this activity should provide answers to the third research question, "To what extent can raising students' awareness about these patterns of organisation have a positive effect on their reading comprehension?"

When compared to the pre-training phase, the students show marked improvement, as can be seen in Tables 4A and 4B. Informants are able to see how the writer organises ideas at the paragraph level and show a better understanding of the information flow from one paragraph to the next.

Table 4A. Hierarchical summary - Informant One

Hierarchical Summary: Pre-training Text: Cloning – A Futuristic Problem	Hierarchical Summary: Post-training Text: Population and Natural Resources
Q From your understanding of the text, state the writer's main message/thesis. How does he support and advance his thesis?	
<p><i>The writer's main thesis is about the problems of cloning, the side effects and disadvantages of cloning had been discussed by him. He advances his thesis by writing on James Watson. He also draws from important citation with names and dates to make his thesis to become stronger. He extend his thesis by discussing more on the problems of cloning so that he can successfully write his thesis according to his title.</i></p>	<p><i>The writer's main thesis is that increase in population causes.... However, there is uneven distribution.... This is because...hence third world nations suffer the most.</i></p> <p><i>The writer advances his thesis by making a claim in para one....In para 2, he advances his thesis by mentioning.....In paragraph 4-7, he supports his thesis by giving a contrasting situation between developed and developing countries. He also states reasons, results and problems from.....He extend his thesis by asking a question whether the developing nations have to decrease their population to make progress in educating the children, thus the problem of scarcity of resources can be solved.</i></p>

Table 4B. Hierarchical summary - Informant Two

<p>Hierarchical Summary: Pre-training Text: Cloning – A Futuristic Problem</p>	<p>Hierarchical Summary: Post-training Text: Population and natural Resources</p>
<p>Q From your understanding of the text, state the writer's main message/thesis. How does he support and advance his thesis?</p>	
<p><i>He supported his thesis by quoting words said by many different people of importance. Most people discussed the problems arising from cloning which further support his thesis. He also covers problems that arise in many major aspects such as social, moral, scientific. This strengthens his thesis.</i></p>	<p><i>The writer's main thesis is the problems caused by increasing population and how they can be solved.</i></p> <p><i>In paragraph one, the writer claimed that the obvious consequences ofby providing examples of renewable and non renewable sources .In paragraph 2 he claimed....He provides reasons to support his claim.....In paragraphs 6-7, the writer is giving us the reasonsIn paragraphs 8,9 and 10, the writer suggests to us the importance of education and economic growth as the key to solve the problems of poverty.</i></p>

Students' summaries do not merely paraphrase what the text says but also show an understanding of how the writer supports and advances his thesis. The students also show a better understanding of the writer's thesis, claims and the supporting arguments.

Secondly, they also show an understanding of how paragraphs combine to advance the writer's thesis. For example, Informant One says "In paragraph 4-7, he supports his thesis by giving a **contrasting situation....**". Similarly, Informant Two states ".....In paragraphs 6-7, the writer is giving us the **reasons**In paragraphs 8,9 and 10, the writer **suggests** to us the importance of....." They thus show an understanding of the discursal functions of the different sections in the texts.

SUMMARY

Findings will be summarised based on the three questions mentioned earlier. As opposed to the pre-strategy training phase, it can be seen from the data at the post-training phase that students are aware of generic patterns of information organisation in an expository text to a large extent. It is also possible to teach students to perceive and internalise these generic meaning patterns of organisation, as shown in the analysis of think-aloud and reading for organisation data. That they can be led from an application of content-based local reading strategies to one of organisation-based, paragraph-level reading strategies becomes apparent in the analysis of all three types of data.

Instead of reading line by line and focusing on discrete main ideas, students are now able to analyse paragraphs to see how the writer organises information. They are able to differentiate claims from supporting details. They reveal an understanding of how adjacent paragraphs combine to advance the writer's claims.

While students seem to have grasped the concepts of paragraph-level analysis in terms of the writer's organisation and the way it functions in advancing the writer's claims, they do not show an understanding of the textual-level organisation. For example, their understanding of the relation between the writer's thesis and the different parts of the text is not revealed. This could be because the strategy training was based on the assumption that focusing on paragraph-level organisation of information should lead students to see connections between paragraphs and the writer's thesis. But this is obviously not the case, as shown by the data analysis. Having achieved part of the objectives in getting students to view texts from the writer's way of organising information, the training needs to explicitly focus on enabling students to see how paragraphs combine to support and extend the writer's thesis (not just the writer's claims at the paragraph level) at the macro level of information organisation.

Students' thesis statements also show that they have mainly confined themselves to the first paragraph. They are not aware of the need to go beyond the introductory paragraph to capture the writer's voice, attitude or stance on the issue.

IMPLICATIONS FOR PEDAGOGY

First, raising students' awareness of information organisation in texts through generic patterns of meaning relations does have a positive effect on students' reading comprehension. But what needs to be done next is a fine tuning of the strategy training to focus on macro level organisation so as to move away from too much dependence on paragraph-level organisation. Students need to be trained to look beyond the paragraph-level to see how writers use paragraphs in isolation and in combination to further their thesis. So strategy training has to be holistically analytic. It has to be top-down, beginning with the writer's thesis and then moving down to the level of paragraphs to enable students to see how paragraphs function in relation to the thesis. Attention still needs to be paid to paragraph-level organisation but it needs to be related to the macro-level thesis of the writer.

Second, students assume that the writer's thesis has to be stated in the introductory section. So they need to be trained to look beyond this section to be aware of the writer's voice, stance and attitude which may emerge in the later part of the text.

Third, the findings have revealed the importance of explicit strategy training. Where training has been explicit, students seem to have internalised the concepts. But when the teacher has assumed that students can make the connections, this has not been the case. This implies that there is an obvious case in favour of explicit strategy training. But it has to be less teacher-fronted as experience has revealed that teacher talk does not produce the desired results in learning. While modelling and scaffolding activities at the initial stages are important, the onus for learning needs to be gradually shifted to the students with the teacher intervening and facilitating wherever and whenever it is necessary. So classroom pedagogy has to be more learner and learning-centred.

Fourth, all this has implications for process-based teaching and learning rather than a product-based approach wherein students have to conform to the teacher's expectations. It implies that training has to be learner-centred with a view to triggering higher-order cognition. It also implies that the focus needs to go beyond

recall and reproduction of information to activating students' thinking processes.

CONCLUSIONS

The effect of raising students' awareness of text organisation and its impact on the students' learning process can be best seen in their comments. When asked to comment on their present reading strategies after the strategy training, as compared to the past, this is what they had to say:

I'm able to understand the text better. I'm also able to extract the important details and the main focus of the text. Hence I will not need to read the paras over and over again as I need to only concentrate on the meaning relations found in each paragraph.
(Informant One)

I think besides looking at content, organisation is also very important as it helps us to understand the whole text in a better way, like why this paragraph is organised in such a way and the purpose of such organisation.
(Informant Two)

Since students can read they assume they have understood the text if they can decipher the sentence-level meaning of the text. Similarly, since students can read, teachers assume it is their responsibility to derive meaning from the text. This small scale study proves that it is assumptions such as these that justify the need for strategic approaches to teaching reading in the classroom. The responsibility for developing strategic readers lies as much with the teachers as with the students.

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Appendix 1. Research on reading strategies

Handout 1

Purpose of Research:

- To explore reading strategies of first year undergraduates on the EA1101 course at NUS

Instructions for Activity One

- *Please read the text on page 2:*
- *Every time you pause, place a “.” (dot) at the spot on the text.*
- *Talk aloud your thoughts into the tape. You can say why you paused, what reading methods you used after you paused. Just share your thoughts and talk them aloud into the tape. Then continue to read. Please repeat the same procedure every time you pause.*
- *At the end of each paragraph, talk aloud into the tape again. Please talk aloud your understanding of the paragraph and how you arrived at this understanding. What reading strategies did you use? Say these aloud into the tape.*
- *Remember your feedback on your reading strategies is very valuable both for teaching and research.*
- *Thank you very much for your cooperation. I appreciate your input very much.*

Chitra Varaprasad
Course Coordinator, EA1101
July 2000

Activity One:

Read the text below and remember to talk aloud into the tape.

- *Please follow instructions given in page 1.*

CLONING -- A FUTURISTIC PROBLEM

1. This article directs our focus towards a more distant matter, the issue of cloning. The immediacy of solution here is not as pressing since the techniques for human cloning have not yet been worked out. Also, there is considerable hesitancy as to whether research dealing with human cloning ought to proceed. It may still be useful to study this issue as an exercise in futuristic planning. Although the technology in this case has not been perfected, its attainment is conceivable within the reasonably near future.

2. James Watson testified before the House Subcommittee on Science and Technology in 1971 that "if the matter proceeds in its current non-directed fashion, a human being--born of clonal reproduction will most likely appear on the earth within 20 to 25 years and conceivably sooner if some nation actively promotes the venture. "Using Watson's calculations, this would put the date for the achievement in the last decade of this century, the 1990s.

3. There can be many personal and clinical reasons for cloning. Robert Sinsheimer, a molecular biologist remarked that cloning will "permit the preservation and perpetuation of the finest genotypes that arise in our species--just as the invention of writing has enabled us to preserve the fruits of their work." Professor Joshua Lederberg, Nobel Laureate in Biology, has written, "if a superior individual—and, presumably, genotype--is identified, why not copy it directly, rather than suffer all the risks, including that of sex determination, involved in the disruptions of recombination." A contrasting view is presented by Leon Kass: "Among sensible men, the ability to clone a man would not be a sufficient reason for doing so. Indeed, among sensible men there would be no human cloning."

4. Paul Ramsey poses the "first moral question" associated with initial attempts to clone humans. He asks, "in case of a monstrosity—a subhuman or para-human individual results — shall the experiment simply be stopped and this artfully created human life be killed?" It is worth noting that a significant number of grossly deformed creatures have resulted from frog cloning experiments, and there is no reason to be more optimistic about the first attempts in human cloning. When there are large risks associated with any experiment involving human subjects then that experiment ought not to be done.

5. The scientific problem involved here is one that relates directly to the ethics of experimentation with human material. Although the techniques for manipulating human fertilized eggs are quite elegant, a percentage of these fertilized eggs do fail to progress normally through the early stages of embryonic development and degenerate. When introduced into the female uterus, some fail to implant into the endometrial lining; others undergo faulty or transient implantation. In many cases, the failure may be due to genetic and developmental abnormalities in the embryo. And while it is true that nature often aborts those embryos with serious defects, she does not always do so. There is at present no way of finding out whether or not the experimental procedures of in vitro fertilization, the transfer of human embryos from donor to host, or any other exotic reproductive technique will result in congenital anomalies, sterility, or mental or physical retardation in any of the progeny.

6. Then there is the question of unused embryos. Dr Gould, editor of *The New Scientist*, has asked: "What happens to the embryos which are discarded at the end of the day--washed down the sink? There would necessarily be many. Would this amount to abortion—or to murder?" Or is it simply an expediency of the experiment with no ethical or moral connotations whatsoever? But, one might ask, isn't that really a trivial question?

7. For certainly, the present practice of abortion and certain kinds of chemical contraception (e.g., prostaglandins) also results in widespread elimination of unwanted embryos. But does the present practice of abortion and contraception excuse moral responsibility for new life if it is experimentally called into being?

8. Kass says no. He differentiates embryo disposal from elective abortion. The two do not belong in the same category at all. In the case of experimentation, an embryo is wanted and only those left over are deliberately destroyed. In elective abortion, on the other hand, the embryo-fetus is unwanted right from the start, the usual reason being a conflict of rights between the mother and the fetus. In cases of conflict like this, the mother's rights take primacy. In embryo disposal, there is no conflict of rights, hence, the moral circumstances are quite dissimilar. A human embryo flushed away in the laboratory because it is surplus constitutes willful manslaughter--an act, if it can be substantiated, of no small consequence.

Adapted from Reading by all Means, F. Dubin & E. Olshtein, 1981

Activity Two:

Read through the whole text again.

- *Answer the questions below in the space provided.*
- *In the lines provided write down the reading strategies you used to answer the question. Keep your answers brief and do not worry about language mistakes.*
- *Remember you will not be graded. The purpose of this research is mainly to explore your reading strategies.*
- *If you are unable to answer the questions, please do not panic. In the answer space just write I DO NOT KNOW.*
- *Under the strategies section, write down what aspects of the question you found difficult and why.*

- Q1 How does the writer organize his ideas on cloning in paragraph 1?
- Q2 Look at paragraph 2. What do you think is the writer's purpose in introducing this paragraph. How does he link paragraph 1 and 2?

Activity Three:

- From your understanding of the text state the writer's main thesis. How does he advance/support/extend his thesis?

*Thank you very much. I appreciate your cooperation and help very much.
Chitra Varaprasad, Course Coordinator: EA1101*

Appendix 2. Strategy training – analysis of text

Food Production and its Consequences

<p>1 In a matter of only several thousand years, food production has had major consequences for the human body and intellect <i>as well as</i> for technology, social and economic systems, and political and religious institutions. <i>In fact</i>, it has brought about many basic changes in the human way of life.</p>	<p><i>Claim</i></p> <p><i>Restatement</i></p>
<p>2 Agriculture transformed Homo Sapiens from a rare to an abundant species <i>because</i> the need for the labor of even the very young provided an incentive to produce numerous offspring. A juvenile hunter-gatherer is almost useless in the quest for food, <i>but</i> among food-producers even young children can perform chores. An increased population, <i>however</i>, brought with it epidemic, famine, conquest, and unremitting warfare.</p>	<p><i>Claim</i></p> <p><i>Reasons/</i></p> <p><i>Counter</i></p> <p><i>Claim</i></p> <p><i>Effect</i></p>
<p>3 The high-carbohydrate, low-protein diet of agriculturists brought with it beriberi, pellagra, rickets, and other diseases <i>caused</i> by vitamin and amino-acid deficiencies. The new diet <i>also</i> produced obesity and widespread dental decay <i>because</i> of the high intake of sugars. A liking for sweets is an ancient trait which humans share with other primates. A cave painting in Spain, dating from perhaps 20,000 years ago, shows people using ropes to reach a beehive with its store of honey.</p>	<p><i>Claims</i></p> <p><i>Effects</i></p> <p><i>Evidence</i></p>
<p>4 Food production both <i>caused</i> and <i>accompanied</i> drastic changes in political, social and economic life. Without this adaptation, complex societies—the state, the empire, and later the industrialized nations—could not have developed. <i>This</i> adaptation <i>also</i> brought with it a new attitude toward material objects and possessions. Hunter-gatherers shared food, raw materials, and lands—<i>but</i> with the rise of agriculture, the sower insisted on being also the reaper. Sharing became restricted to the family; ownership became paramount, and behaviours previously unknown appeared, <i>such as</i> possession for exclusive use, claiming ownership of pieces of land and defending these territories, and the inheritance of property. <i>Since</i> some people were able to obtain more land than others, the egalitarian society of the hunger-gatherers gave way to increasingly greater differences in wealth, power, and status. <i>For the first time</i>, societies became divided into the</p>	<p><i>Reason/</i></p> <p><i>Result</i></p> <p><i>Contrast</i></p> <p><i>Elaboration</i></p> <p><i>Support</i></p> <p><i>Reasons</i></p> <p><i>Results</i></p>

rulers and the ruled, the rich and the poor. Wealth and power did not merely appear for the first time; they also became hereditary. They *thus* gave certain people in the society political authority and social privileges that had little reference to their abilities.

Conclusion

5 *In contrast* to the diversity of skills possessed by every hunter-gatherer, the food-producing adaptation compartmentalized skills into highly specialized occupations. Had such specializations been absent, the technological achievements that developed as part of this adaptation would have been impossible. *This adaptation* soon contributed techniques that altered the internal properties of natural substances. Clay, earth, and ore were modified to produce pottery, glazes, and metals. If clay, *for example*, is heated to a high temperature, it is transformed into pottery and ceramics, substances that can no longer be returned to their original state. The humans' new ability to change the very nature of matter must have profoundly enhanced their intellectual awareness and their confidence in being able to serve their own needs. Domestication, *after all*, involved simply guiding normal biological processes, *whereas* the new technology involved a control over matter itself.

Contrast

Elaboration/
Support

Example

Contrast

6 People in our threatening century often tend to look back with envy on the seemingly idyllic past of leisured hunter-gatherers or simple agriculturists. *But* since turning back is impossible, we must live today with all the consequences—whether good, evil, or neutral—of innovations stemming from the development of food production. Our path today is still laid out for us by *those innovations*, made so many thousands of years ago. The population explosion, the shortage of resources, the pollution of the environment, exploitation of one human group by another, famine, and war—*all* have their roots in that great adaptive change from foraging to production.

Claim

Counter Claim

Effects

7 *On the other hand*, it was food production that permitted the cultural potentiality of the human species to develop freely. Having become liberated from the limitations and constraints dictated by the environment, the innate capacities of our species could now be expressed much more fully.

Contrast

Support