THE ROLE OF METACOGNITION IN TEACHING READING COMPREHENSION TO NORMAL-ACADEMIC SECONDARY FOUR STUDENTS

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Abstract: Flavell (1976:232) defined the term metacognition as 'knowledge concerning one's own cognitive process and products and refers to the active monitoring and consequent regulation and orchestration of these processes'. Garner (1987) labels metacognition as a body of research and theory that examines thinking about thinking. Osborne (1999) refers to as everything from knowledge of strategies, executive control of strategies, self-monitoring of activity to such things as listing of a particular problem, detection of errors within a reading passage, prediction of grades, knowledge of sources of motivation and self-correction of errors. Wenden (1998) states that second language learners involved in learner training, i.e. providing instruction in the use of cognitive strategies or the skills for self-directed language learning, agree that metacognitive knowledge should also be a component of these programs. Carrell (1998) states that while there is agreement among researchers that it is important for second language readers to become strategic readers, yet there is disagreement among the same researchers as to how to accomplish this goal. Part of the problem is that there are no inherently 'good' or 'bad strategies. The research in metacognitive knowledge is of current interest in Singapore schools as there is current emphasis on training students in thinking schools under the initiative of 'Thinking Schools and Learning Nation'.

Current Study
The current study on Normal-Academic secondary four school pupils (Lim, 2000) was designed to observe students' use of metacognitive knowledge, their monitoring of metacognitive knowledge and their use of metacognitive strategies. Observations were made during several reading tasks to determine pupils' use of metacognitive knowledge & metacognitive strategies when reading was analyzed. Only 2 out of 21 students were able to pass the 1996 'O' level paper set as an exercise. This caused a great deal of concern and a survey was conducted on their understanding of reading tasks. An initial survey conducted on student's approach towards reading comprehension provided the following. (Note that throughout this paper students' use of language has not been corrected. This was to enable the teacher to understand the feedback given and to reduce the tension of demanding students who give syntactically correct answers all the time.)

Maggie: Read the passage until you really understand it.
Look for the answer in the passage and try to shorten it.

Nor Aina: I try my best to understand the passage till I understand about what it is about. When I read the questions I try to look for the answers from the passage and if I can't, I'll try using my imagination and sometimes, I will anyhow do it.

Students' responses showed the lack of any understanding as to how they were to approach comprehension tasks. When questioned on what problems they had while answering questions, most attributed their problems to the reading texts being too long, the topics being difficult and unfamiliar, the vocabulary in the reading texts being too difficult to rephrase.

As there was only time for intervention for a period of over four months before the examinations, specially selected authentic reading texts which were different from their normal textbook type materials were selected. Apart from explicit training of metacognitive strategies ranging from the use of mindmaps to advance organizers, worksheets were designed to train students in the use of metacognitive strategies. One student gave the following response:

Sharifah: I read the passage once and then I scan, and I reread. The dashes and commas help me. The sub-heading on each paragraph help me to solve the answers.

The study was designed to provide training to students and to make detailed observations during the training period. The design of the study was two-fold: to introduce and to train students in the use of metacognitive knowledge through specially designed worksheets that require students to answer inferential and open-ended questions. The metacognitive areas covered included providing meaning of new vocabulary through contextual means, relating new information to background knowledge, guessing meanings, understanding content and predicting or anticipating the proceeding parts of the text. Intervention questions were introduced after the comprehension questions. These were designed to elicit information on the students' understanding of and use of metacognitive knowledge and the extent to which they monitored their understanding. Interviews, journals and surveys provide a guide for the teacher as researcher to get feedback on students' understanding and evaluation of their understanding. Though self-reports have been criticized, the use of self-reports in this study was used to pool feedback from students own perceptions of their understanding or lack of understanding of such processes. Feedback was obtained through interviews, journals and surveys.

The rationale of the study was to find out whether the teaching of metacognitive strategies could help to reduce the problems they faced in reading. The study on 21 Normal-Academic stream students was to monitor the training given to such students and to obtain feedback on their use of metacognitive knowledge. The rationale of the study was
to find out whether students' use metacognitive strategies when reading can help students and whether students will be willing to use them effectively when processing texts.

The research questions addressed in the study are:

Can students be implicitly trained to use metacognitive knowledge?
Do students rely on metacognitive knowledge to approach a text?
What are some metacognitive strategies useful for learning?

The following section provides a summary of the feedback obtained and a summary of individual student responses during and after training.

Table 1
Question given: "Usefulness of the worksheets in improving reading"

<table>
<thead>
<tr>
<th></th>
<th>Improved in reading</th>
<th>Did not make improvement</th>
<th>No comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of students</td>
<td>17</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

From Table 1, it is noted that 17 (81%) students found some improvements in their comprehension of texts after doing the worksheets. The students expressed more enthusiasm in reading a text on various topics after the training. At first, they were discouraged by small print, but later they realized that the worksheets had helped them to develop an awareness of appropriate reading skills and strategies. It is interesting to note that two students, Hafizza and Alaina, did not find the exercises helpful in improving their comprehension. However, they scored better in the "O" level examinations than the Final Term Examination. They might not have appreciated the benefits from which they could have gained training and practice. This also indicates that they were not able to monitor their progress.

Table 2
Question given: "Eagerness to do more worksheets"

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of students</td>
<td>11</td>
<td>10</td>
</tr>
</tbody>
</table>

Table 2 demonstrates that not all students were prepared for independent learning and were motivated to carry out task based activities and task based learning.

Those who gave positive responses indicated that they would be motivated to carry out the tasks if the passages
* were not too difficult
* had been shorter
* were more interesting,
* were able to increase their knowledge of content
* did not contain print that was too small

Those who gave negative responses gave reasons that:
they were too stressed by their schoolwork and forthcoming examination
the exercises were boring
there was too much summary writing
it was tedious to do so many exercises
the answers required were too long
it was too time-consuming.

Table 3
Question given: "Interest and background knowledge"

<table>
<thead>
<tr>
<th>Affect comprehension</th>
<th>No comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of students</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>5</td>
</tr>
</tbody>
</table>

Table 3 shows that the majority of the students felt that being motivated by interest and possessing real world knowledge would help them to understand the texts more quickly and more easily. According to Aebersold and Field (1997), "Degree of interest is an important factor in reading motivation. The more interested people are, the more they persevere in reading. Intense interest motivates people to read materials that are beyond their range of language proficiency."

Table 4
Question given: "Age and educational background"

<table>
<thead>
<tr>
<th>Affects Comprehension</th>
<th>Does not affect Comprehension</th>
<th>No Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of students</td>
<td>13</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 4 shows that most of the students were aware that the standard of work they produced had a relationship to their age and educational background. They felt that the older they were, the more maturity they would have in their thinking and the more capable they would be in handling the topics and the questions. They admitted to their lack of proficiency in the English language as they were in the Normal Academic Stream so they felt that they required to put in more effort and had to be given more time in order to achieve better results in their comprehension.

Table 5
Question given: "Strategies that were useful"

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>No Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of students</td>
<td>11</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 5 illustrates that some were able to pick out the strategies that the exercises had set out to train them in and in so doing, they displayed active monitoring of their learning. The students generally pointed out that

* the pictures or graphics were helpful
* the headings were interesting
* the advance organizer was useful
* the bold print, fonts, headings and sub-headings were outstanding

Table 6
Question given: "Give comments and suggestions for improvement of lesson"

<table>
<thead>
<tr>
<th>No. of students</th>
<th>Gave Comments and Suggestion</th>
<th>No comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

Table 6 shows that nine students were willing to cooperate and share their views for improving their lessons. They were aware that:

* as long as passages were interesting, they would enjoy the work
* the questions should be constructed in more interesting ways
* the training in the use of strategies should be given earlier in the year
* the exercises should be less scientific and more conventional as in examinations
  * simpler questions and vocabulary should be set and with less metacognitive questions
* the questions asked should be constructed in a more interesting way
* more time should be given, especially for those requiring longer answers

The rest who did not respond were either reluctant to do so, or lacked the language to express themselves or they had no interest in completing the tasks in the worksheets.

Feedback Through Journal Comments
The next section analyses comments from students' journals. Aebersold and Field (1997) pointed out that "Student journals are a superb way to keep learners involved in the processes of monitoring comprehension" (p. 68) The students' abilities to reflect on their levels of engagement constitute a part of their metacognitive awareness.

Jacobs and Paris (1987) describe metacognitive knowledge as being divided into declarative, procedural and conditional knowledge.

Some pertinent answers revealed that the level of motivation had significant bearings on the metacognitive ability and willingness of the students to give such thinking skills or strategies a try. The importance of motivation as a factor affecting learning is perfectly summed up by a student

Noraihan:  *If I have the interest about a topic, I will really want to read about the article and it encourages me to do the exercises with great effort.*

Different students also perceived the instructions they were receiving differently. There were opposing views concerning the usefulness of mind-maps, doing summaries to pick out key points and even using any strategies apart from the basic approaches that they knew of.
Students gave the following responses on the usefulness of diagrams in improving comprehension:

Maggie:  *With mind mapping and diagrams, it is very easy to understand*

Shuzhen:  *Drawing diagrams and maps are troublesome and take time.*

Sharon:  *They give a better picture and makes reading more interesting than just plain words without drawings and pictures. The layout of diagrams help reading easier.*

The following comments were given on summary writing:

Selflana:  *I think it has too much practice on the summary which I think is not necessary. The questions asked should be more like the "a bit tiring-off" whereby we really think hard on answering questions.*

Nurhafeza:  *(Luguhu ... The Lost Horizon)*  
*The passage has helped me in my summary. the drafting which I find tedious has helped to opt out meaning (meaning "what is not needed").*

**Problem areas to be reviewed**
The students left many questions in their worksheets unanswered. They were frustrated by the intervention questions that required them to think how they had derived their answers, the inferential questions that required the use of contextual clues and the small print of texts taken from the newspaper and the magazine 'Newsweek'. They even requested for multiple-choice questions, which they preferred over open-ended questions.

The examination-oriented mentality of students in Singapore was present in some of the students as they reacted negatively to the format of the worksheets, which were not similar to the usual comprehension exercises they usually do in school. Some complained of the lack of time and were basically impatient people. This resistance towards "something different from the norm" might adversely affect their potential for approaching learning creatively and with innovation. This was seen in the attitudes of some students.

**Positive feedback**
In contrast, there was another group that was enthusiastic and very willing to acquire new knowledge. In fact, they looked forward to the next worksheet and showed their skills in attempting the new pieces of work as their experiences grew. Two students, Hafizza and Zameera, had unconsciously acquired the habit of writing drafts prior to writing their summaries and they even handed up their drafts along with their summaries during the Final Term school examination. Another student, Noraihan, showed understanding when she was able to answer accurately and not only identified the source and context clues accurately in the text but was also confident in sharing this with the class. This
encouraged some amount of peer-sharing which helped to increase motivation among the Normal-Academic group of students. It was encouraging to note that the majority of students were aware of the various strategies such as skimming and scanning, the use of contextual clues and were able to draw mind maps and demonstrated the use of these strategies consciously in applying these to their understanding of reading texts.

In their reading tasks they were encouraged to activate the use of prior knowledge and to use their knowledge of texts to facilitate comprehension. The majority were also grateful for the training that they had been given which enabled them to use the strategies they were trained in using them to read and understand other texts.

They were also more careful in their reading, often rereading over a second time and regulating their speed in comparison to their previous reading habits where they would read a text once through very quickly without processing texts. Some even admitted bypassing the process of skimming over the information and concepts in the texts and going directly on to scanning for the answers.

The students responded to print size, type of font, boldness of print and to titles and subheadings given in texts and used these to give them a better idea of the content in the texts. Subconsciously, they displayed an understanding of discourse analysis although they had not undergone any formal training in this linguistic area.

They found visuals (e.g., pictures and diagrams) more useful in helping them access knowledge from the texts and, therefore, provide answers based on the visuals. They pointed out that they would be even more receptive if the visuals were in color for this would inject realism and help them focus and relate better to the content in the texts.

Some salient points given by the students in the journal were the following:

Joan:  
*I looked at the picture first. Then I read the headlines and the words in bold print. Then I read the contents. (referring to 'Advertisement: Expressions Slimming Studio')*

Latifah:  
*Have come across this news from television. (referring to the text on 'Pangs of Hunger')*

Nazreen:  
*I pay more attention to the bold word. I somehow react to the passages, it gets easier for me to do summary writing. Now I realized that I should pay more attention with the setting and to its contextual clues if I don 'I understand a few things (about the worksheets in general).*

Chiew Hoon:  
*Prior knowledge helps makes topic much more interesting. (reading text on 'The Human Clone')*
Some students could not explain how they found their answers to the tasks and questions given and left the questions related to metacognitive strategies unanswered, while others were not able to provide clarification mainly because of their handicap in the use of English language. They were unable to express themselves in writing, but when they did express themselves in their own way, the feedback was useful to the teacher.

The group that showed the use of metacognitive strategies in the form of feedback could have acquired some of the automaticity, that Brown (1987) mentions in his study, The latter group with less confidence would need to build up their confidence in their use of the language before they could provide answers in the use of metacognitive strategies. In spite of some of resentment to the "extra work" that the students had to carry out to make sense of their training, at the same time there was a certain amount of willingness on the part of students in convincing themselves to give metacognitive approaches a try. Some students had also acquired the technical terms associated with cognitive strategies to describe how they handled their reading comprehension tasks and were definitely more aware of text structures and textual schema when compared to the time before their training.

The analysis shows that metacognitive knowledge of reading comprehension tasks facilitates understanding and increases comprehension. The results show some attempts made by students to use their thinking skills when more demanding reading comprehension tasks were given. Some students displayed independent learning and monitoring of their own understanding. Some students showed that they were able to carry out self-correction. Some benefited from their training in becoming less anxious over demanding reading texts and reading tasks. They benefited from being able to take more responsibility and control over their learning.

References