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Teaching Metacognition within a Comprehension Strategy Framework

Wong Mei Yin, Cedric Leong Kai Wah &
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INTRODUCTION

There is no doubt that educators are concerned with how well children comprehend what they read. The obvious reason for this is that reading effectively is an increasingly valuable skill in this age of information explosion where one could be overwhelmed by the abundance of information unless one is able to sift through what is relevant and what is not. This information has to be read, comprehended and applied to be of use. Reading is also a primary achievement required at the elementary level at school. Increasingly, education demands the need for one to be able to evaluate critically what is read. This has led to a growing requirement for schools not only to foster high literacy but also to develop students' reasoning through the teaching of higher-order thinking skills. These skills refer to the strategies that readers use to comprehend what they read, and to plan, monitor, evaluate, as well as to know when and how to use the strategies in order to improve their comprehension.

With the English language being the main medium of instruction from pre-school through university, the language of business and the lingua franca in Singapore, proficiency not only in spoken English but also in reading and writing in the language is, without doubt, an advantage for employment in this society.

The present article proposes the adaptation of metacognitive strategies for Dowhower's (1999) comprehension strategy framework — which incorporates Ringler and Weber's (1984) three phases of the interactive stage of teaching reading comprehension (prereading, active reading, and postreading) and Baumann and Schmitt's (1986) "what, why, how and when" of comprehension instruction — for the teaching of reading comprehension to Secondary Level students in Singapore. The comprehension strategy framework is composed of three phases of the interactive stage of teaching reading comprehension and how new strategies, including metacognitive strategies, (the what, why, when, where and how of comprehension instruction) would be connected with strategies that students are already using.

METACOGNITION

Metacognition has been described as “cognition about cognition” (Flavell, 1979). In relating metacognition to the task of reading, one would be concerned with such activities as clarifying the purpose of reading and understanding the task demands; identifying the important aspects of a message; allocating attention to major content areas; monitoring the level of comprehension, checking whether goals are being achieved; taking corrective action when comprehension failures are detected; and recovering from disruptions and distractions.

Two dimensions of metacognitive ability have been identified: (1) knowledge of cognition, and (2) regulation of cognition (Flavell, 1979). In relation to reading comprehension, knowledge of cognition refers to the reader’s knowledge about his or her own cognitive resources and the compatibility between the reader and the reading situation. Being aware of the demands of the reading situation means that the reader would be more aware of what is needed to perform efficiently to meet the demands more effectively. Obviously, if a reader is unaware of his or her own limitations as a reader, or the complexity of the task, then it would be difficult, if not impossible, for him or her to take preventive or corrective actions to anticipate or deal with the problems.

Knowledge of cognition includes three components, namely, declarative, procedural and conditional knowledge. Declarative knowledge refers to propositional knowledge, i.e., knowing *what*. Procedural knowledge is about knowing *how* to perform actions, while conditional knowledge refers to knowing *why* or the rationale, as well as knowing *when* to use a strategy.

The second dimension of metacognition, i.e., the regulation of cognition, concerns the higher order processes orchestrating and directing other cognitive skills. In reading, these skills include planning, monitoring, testing, revising, and evaluation of the strategies employed. Through the application of such skills, readers become aware of and detect contradictions in texts, recognize that different strategies could be used with different text types, and learn to separate what is important from what is not important. Basically, reading for meaning entails the application of such metacomprehension strategies.

The extent to which the local students benefit from the training would be the primary concern of the instructors. The literature has already established the benefits of metacognitive training in reading comprehension (Carriedo & Alonso-Tapia, 1995; Vauras, Kinnunen, & Rauhanummi, 1999; Thomas & Barksdale-Ladd, 2000). Carriedo and

Alonso-Tapia (1995) established that training students in the use of metacognitive strategies was effective as it led to the students' improved capacity for identifying textual structure and main ideas. Similarly, Vauras, Kinnunen and Rauhanummi (1999) proved metacognitive intervention was successful with significant training effects. Through direct explanation, modelling, and scaffolding new strategies, metacognitive awareness and control, the intervention students demonstrated metacognitive skilfulness in terms of enhanced metacognitive awareness, increased sensitivity to metacognitive experiences, and self-regulation. In addition, Thomas and Barksdale-Ladd (2000) demonstrated that thinking aloud, the writing of metacognitive journals, tutoring work, and the teaching of case response had a powerful impact on the development of metacognitive understandings in students. Their findings on thinking aloud are significant to the present proposal for training in metacognition. This will be apparent in the later portion of this article.

Other studies on successful intervention by educators and researchers have demonstrated that poor readers' metacognitive knowledge and strategies in reading have been enhanced. Students have also been found to benefit from various styles of intervention. Palincsar and Brown (1984), for example, designed the teaching procedures around the apprenticeship model of learning which they termed "reciprocal teaching", to focus on clarifying, questioning, predicting and summarizing. Other approaches adopted include teacher modelling (Vaurus, Kinnunen, & Rauhanummi, 1995; Thomas & Barksdale-Ladd, 2000), K-W-L (What I know, What I want to learn, What I learned), semantic mapping, the use of expository frames, group summarizing and the creation of mental images.

Attempts to intervene with metacognitive training have also shown that good and poor readers differ in their knowledge and application of metacognition during reading. Good readers have been found to apply sophisticated metacognitive knowledge and skills both deliberately and methodically. On the other hand, poor readers demonstrated a lack of planned control and deficient knowledge about comprehension processes and the ways in which comprehension can be improved (Zhang, 2000).

THE COMPREHENSION STRATEGY FRAMEWORK

Dowhower's (1999) comprehension strategy framework illustrates how an instructor may present new strategies and connect them with those that the students are already using. An overview of the components of the framework are presented in Figure 1.

Figure 1

Overview of components of comprehension strategy framework

Prereading	Eliciting prior knowledge Building background knowledge Focusing attention on what, why and how of strategy instruction
Active reading	Establishing purpose for reading Self-monitoring during reading Discussing to determine when and where strategies would be used and how to evaluate the use of the strategies Coordination of strategies
Postreading	Follow-up activities to monitor and evaluate use of strategies individually and in groups

The three phases of the interactive stage of teaching are prereading, active reading and postreading (Ringler & Weber, 1984). Baumann and Schmitt's (1986) "what, why, when and how of comprehension instruction", as well as teacher-student discussion techniques are incorporated into the framework.

The Prereading phase includes three activities: (a) eliciting prior knowledge, that is, provision of declarative knowledge, (b) building background knowledge, that is, building bridges from the known to the unknown, and (c) focusing attention on the specific strategy to be taught, that is, establishing what the strategy is, why it is being taught, and how the strategy works.

The second phase of the interactive stage of teaching is Active Reading. This involves a repetition of three activities, or a cycle. The rationale for the cycles (Dowhower, 1999) is that they allow for more opportunities to stop and think openly about what has been read, and for the construction of deeper understanding. The three activities include: (a) setting a purpose for reading the specific section of the text. The importance of purpose setting has been established as this facilitates comprehension (Blanton, Wood & Moorman, 1990). It is the sense of purpose, need and direction of the readers that seems to be helpful for comprehending what is read. (b) reading silently, which is similar to real-life reading, and self-monitoring; and (c) discussing the story to help students become a part of what they have read, as well as the process of reading. In discussion, the students examine, weigh and

judge for themselves what the authors might be conveying. These three activities are repeated, in cycles, until every section of the text has been read. The discussions held between the instructor and the students would emphasize when and where the strategies would be used, and how to evaluate the use of the strategies.

The third and final phase of the framework is the Postreading phase. This comprises independent and group activities that involve students in: (a) recalling content, (b) writing journals about what they have understood from the text or how they would react or feel about a character or situation, (c) using and transferring strategies, through talking with a partner about how they use strategies as they reread the story, and (d) assessing oneself informally, through retelling a story or completing a self-assessment checklist to indicate the strategies they used independently, during silent reading.

Supportive descriptive and experimental strategy evidence has been found with respect to the strategy instruction. These have shown that middle and low readers have improved their comprehension, that strategies can be taught to students who do not use them spontaneously (Garner, 1992), and that students can transfer strategies they have learned to independent reading situations (Griffin et al., 1995). Hence, strategy instruction is worth the investment of effort to explore the enhancement of abilities of local students in reading comprehension.

THE FRAMEWORK AS A VEHICLE FOR TEACHING METACOMPREHENSION STRATEGIES

The comprehension strategy framework could be used to teach a single strategy or a repertoire of comprehension strategies, depending on how comfortable the teacher is during instruction. Teachers, new to strategy teaching, may find that they are more comfortable concentrating on some of the simpler techniques in the early stages of the implementation of this model. Once a schema for teaching strategies has been developed, they may then transfer this to other types of texts.

Some examples of strategic processes that are worthwhile considering for reading comprehension instruction include: activating of background knowledge, predicting, summarizing, self-questioning, inferencing, distinguishing important information, synthesizing, monitoring, and learning to deal with difficulties with comprehending.

The relationship between strategy instruction and metacognitive knowledge, i.e., declarative, procedural and conditional knowledge, is shown in Figure 2.

Figure 2

The relation between strategy instruction and metacognitive knowledge (Carrell, Gajdusek & Wise, 1998)

Declarative Knowledge	Procedural Knowledge	Conditional Knowledge
What the strategy is	How to use the strategy	When and where to use the strategy
Why the strategy should be learned		How to monitor and evaluate the use of the strategy

Declarative knowledge is addressed through explanations of *what* a strategy is and *why* the strategy should be learnt. *How to use* the strategy is addressed by procedural knowledge. Conditional knowledge is addressed through explanations of *where* and *when* the strategy should be used, and *how to evaluate* the use of the strategy. Figure 3 further illustrates the what, why, how to use, where and when, and the how to evaluate of teacher explanation. These are said to constitute a complete teacher explanation of reading comprehension strategies.

Therefore, through the process of complete teacher explanation of reading comprehension strategies that are used within the comprehension strategy framework, students would derive twofold benefits. Firstly, they would acquire the respective strategic comprehension processes that help them deal with difficulties with comprehension. Secondly, the explicit exposure to the components of complete teacher explanation would increase their metacognitive awareness of the processes involved during reading comprehension.

The increased awareness and knowledge of metacognition would facilitate the students' reading comprehension through directing students to focus on pertinent information from their reading and to monitor their comprehension. When they become familiar with the sequence of questions posed by their teacher, they may learn to ask self-questions and answer. This helps them to follow the steps involved in using a comprehension strategy so that they may eventually internalize and use them independently (Swanson & De La Paz, 1998).

CONCLUSION

Having proposed that the comprehension strategy framework could provide the foundation for teaching metacognitive strategies, it is

Figure 3

The components of complete teacher explanation

What the strategy is	Teachers describe critical, known features of the strategy or provide a definition / description of the strategy
Why a strategy should be learned	Teachers tell students why they are learning the strategy, and explain the potential benefits. This seems to be necessary for movement from teacher control to student self-control
How to use the strategy	Teachers break down the strategy, explain each component of the strategy and show the relationships among various components. Thinking aloud, analogies and other clues could be used to supplement the explanation.
When and where the strategy should be used	Teachers delineate appropriate circumstances under which the strategy may be employed. Inappropriate use of the strategy could also be demonstrated.
How to evaluate use of the strategy	Teachers show students how to evaluate their successful or unsuccessful use of the strategy to monitor and regulate one's own learning.

necessary for us to consider the implications this bears for enhancing language learning.

With respect to the Thinking Programme in Singapore, the importance of metacognition has already been highlighted for the purpose of reflection and transfer between different subject areas. This programme helps pupils become better thinkers and learners through the direct teaching of thinking skills in non-curricular contexts. However, the addition of metacognition as an explicit component of the programme could enhance the process of developing pupils into critical, creative and self-regulated learners.

With supportive research evidence demonstrating the benefits of metacognitive training during reading, the infusion of metacognitive strategies into English language reading classrooms should undoubtedly be advocated. While bearing in mind the complexities and nuances of metacognitive strategy training, this challenge would still be a breakthrough for the teaching and learning of reading in English.

Assuming that the responsibility of conveying this knowledge lies with the educators, teachers will also need training in what the metacognitive strategies are and more importantly, in how to teach them. In view of this, the researchers, together with teachers, could develop a booklet with simple techniques on the use of metacognition to enhance reading in the classroom.

Last but not least, it is of fundamental importance that students' responsibility, control of their learning process and habits of mind would contribute significantly to the level of success and benefits that they draw from the process of being trained to use metacognition to enhance their reading comprehension. Thus, training must fundamentally commence with sufficient attention directed towards the learning needs of the students.

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