

# **“Mental Modelling in Guided Reading & Paired Reading – A Comparative Study”**

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## **Abstract**

In schools and colleges, reading comprehension is taught and tested. However, students lack reading fluency because they never practise reading at school or home. They are haunted by the media, and don't have interest in reading. Due to internal and external factors, they are deficient in reading readiness, reading attitude, reading comprehension, etc. They don't know the reading strategies or techniques for effective reading. They just memorise the answer choices and write the answers in the exams. They don't realise the importance of reading until they have to read and understand a lot of information in higher education and work environments.

Mental models are symbolic representations of how the mind holds abstract information. They can be in the form of pictures, gestures, analogies, concept maps, story webs, etc. Mental modelling can be used to enhance the reading process. Teachers can use guided reading or paired reading in the classrooms to develop mental modelling which in turn will boost up the reading readiness, reading attitude, reading comprehension, and reading fluency of the students.

An experimental study was conducted in VV College of Engineering to check whether guided reading and paired reading help the students in developing mental modelling which enhances their reading skills.

## **1. Background of the Study**

OECD (Organisation for Economic Co-operation and Development) Secretariat organises the Programme for International Student Assessment (PISA) annually to test the education systems around the world. It conducts tests and surveys in different schools across countries. India has the reputation of providing world-class education in schools and colleges. But it ranks second last among the 73 countries which participated in the PISA. (Chhapia, 2012) In the reading test, Tamilnadu and Himachal Pradesh students (who participated in the PISA as the representatives of Indian education system) scored better than only Kyrgyzstan. Their proficiency in reading literacy is estimated to be below the baseline level (Chhapia, 2012).

Reading is important to students who undergo higher education as they have to read, comprehend, and process a lot of information on their subjects. Reading fluency has three dimensions: word coding, automatic processing, and prosodic reading (Schreiber, 1991). This can be achieved by self-reading, guided reading, or paired reading. Guided reading is a small-group instruction supported by the teacher to help the students enhance their reading fluency (Fountas & Pinnell, 2001). Paired reading is a one-to-one instruction in which a proficient reader helps a budding reader in the classroom (Topping, 1987). Guided reading and paired reading can be done with the help of parents too.

Mental models are symbolic representations of how the mind holds abstract information. They enhance concept understanding and knowledge development. They also represent subjective ideas, thoughts, and feelings (Seel, 2003). According to Seel (1999), making the students understand the nature of mental modelling and help them develop good mental models has potentially great educational and economic benefits. Reading strategies and metacognition make the learning process explicit. Mental modelling enhances the learning process, and the learners who develop good mental models exhibit greater learning outcomes and efficiency than who use less adequate models in various domains. (Mayer, 1989) Guided reading and paired reading can be utilised in the classrooms to develop mental modelling which will help in enhancing the reading skills of the students.

## **2. Literature Review**

Reading is a multifaceted process involving word recognition, comprehension, fluency, and motivation (Leipzig, 2001). Parent involvement has a positive effect on children's reading acquisition if there is positive reinforcement and meaningful interventions (Sénéchal & Young, 2008). When providing effective reading and writing instruction, teachers need to provide explicit modelling. Modelling is particularly important when teaching students to use cognitive learning strategies (Regan & Berkeley, 2011).

Reading fluency can be developed using different methods. In student-parent reading, the parent reads the text and the student imitates it with encouragement from the parent. This goes on until the student is quite fluent. In choral reading, students read as a group with the help of the teacher who models fluent reading. Students reread the text with encouragement until they are fluent with the text. In tape-assisted reading, students read as they listen to a fluent reader on audiotape. This continues until the student can read the book independently. In partner reading, paired students take turns reading aloud to each other. For partner reading, more fluent readers can be paired with less fluent readers. In Readers Theatre, students rehearse and perform a play for peers or others. They read from scripts that have been derived from books that are rich in dialogue and develop their reading fluency (Abadiano & Turner, 2005).

Paired Reading is a straightforward and generally enjoyable way for fluent readers to help less fluent readers develop their reading skills (i.e. a form of cross-ability tutoring). The pair is encouraged to take any reading material (e.g. newspapers, magazines, or e-books) which is of great interest to them but above their independent readability level. The pair reads out loud simultaneously in close synchrony. This is termed as 'reading together' (Topping, 2012).

In Paired Reading, the pair might use the 'five-finger test' of readability: 1. Open a page at random. 2. Spread 5 fingers on one hand. 3. Place fingertips on the page at random. 4. Child attempts to read the five words. 5. Repeat on another four pages. Encouragement to read 'a little but often' is usual. Pairs commit themselves to read at least three times per week for at least 10 minutes per session for at least 6 weeks. This minimum frequency is needed in order to develop automaticity with the technique and give it a fair test. At the end of 6 weeks, pairs consider whether they wish to continue with greater or lesser frequency or even at all or perhaps to vary partners or some aspect of the method (Topping, 2012).

Paired Reading has a lot of benefits. Children can select reading materials out of their own interest. They have the choice of reading alone or together. They feel good as they are appreciated often. There is no fear of failure or negative criticisms. They understand words as they read. They can learn by example to read with expression and the right pacing (e.g., by copying how the fluent reader pauses at punctuation or gives emphasis to certain words). They get private attention and individualised feedback which is not possible in over-crowded classrooms (Topping, 2012).

Research suggests reduced error rates and no increase in error rates in paired readers. Paired reading produces greater fluency, fewer refusals to read difficult words (greater confidence), greater use of context, and greater likelihood of self-correction as well as fewer errors (greater accuracy), and better phonic skills. One mistake every 2 minutes and book discussion every 5 to 7 minutes seem optimal. There is some evidence that Paired Reading might work by developing self-esteem rather than through more mechanical means (Topping, 2012).

Guided Reading is a small-group reading instruction designed to provide differentiated teaching that supports students in developing reading proficiency (Pinnell & Fountas, 2010). It involves a teacher and a small group of students. The students are typically grouped by academic ability, reading levels, or strategic / skill-based needs. In Guided Reading, a teacher will access background knowledge, build schema, set a purpose for reading, and preview the text with students (Fountas & Pinnell, 1996). Typically the group will engage in a variety of pre-reading activities such as predicting, learning new vocabulary, and discussing various text features. If applicable, the group may also engage in completing a "picture walk". This activity involves scanning through the text to look at pictures and predicting how the story will go. The students will engage in a conversation about the story, raise questions, build expectations, and notice information in the text (Fountas & Pinnell, 1996).

During reading, the students will read independently within the group. As the students read, the teacher will monitor student decoding and comprehension. The teacher may ask students if something makes sense, encourage students to try something again, or prompt them to use a strategy. The teacher makes observational notes about the strategy use of individual readers and may also take a short running record of the student's reading. The students may read the whole text or a part of the text silently or softly for beginning readers (Fountas & Pinnell, 1996).

After reading, the teacher will again check the students' comprehension by discussing the story with them. The teacher returns to the text for teaching opportunities such as finding evidence or discussing problem solving. The teacher also uses this time to assess the students' understanding of what they have read. The group will also discuss reading strategies they used during the reading. To extend the reading, students may participate in activities such as drama, writing, drawing, or more reading (Fountas & Pinnell, 1996).

Small-group reading instruction had drawbacks like the rigidity of groups that followed an unchanging sequence of core texts, less instruction in critical thinking provided to lower-progress groups, negative effects on confidence and self-esteem, and the use of many workbook pages as the materials market grew (Pinnell & Fountas, 2010). Guided Reading uses the following strategies to avoid the pitfalls of traditional small-group reading instruction: The students are encouraged to have connected reading instead of 'round robin' reading. Teachers can choose the books instead of following a rigid sequence. Groups are dynamic; they change in response to assessment and student needs; they are flexible and fluid.

In all the groups, no matter what the level is, teachers teach for a full range of strategic actions: word solving, searching for and using information, self-monitoring and correcting, summarizing information, maintaining fluency, adjusting for purpose and genre, predicting, making connections (personal, other texts, and world knowledge), synthesizing, inferring, analyzing, and critiquing (Pinnell & Fountas, 2008). The teacher supports critical thinking and deep comprehension. Discussion of meaning is grounded in the text and expands thinking. The teacher incorporates explicit vocabulary instruction and phonics or word work. Rather than completing exercises or workbook pages, students may write or draw what they have read (Pinnell & Fountas, 2008).

Some students work on very basic reading skills such as word analysis and comprehending simple texts while other students may be working on more advanced reading skills and strategies with increasingly challenging texts. All the students need instructional support so that they can expand their competence across a greater variety of increasingly challenging texts. It takes a lot of strong planning and organization from the part of the teacher in order to successfully implement Guided Reading so that it meets the needs of all the learners (Pinnell & Fountas, 2010).

## **Mental Modelling**

Mental modelling is a teaching technique which informs students about the flexible reasoning processes undergirding strategic reading (Duffy, Roehler, & Herrmann, 1988). The teacher uses this technique to show the ‘novice’ learner the ‘how’ of reading by thinking aloud as he or she negotiates for meaning through the text (Pani, 2004). By mental modelling, the learner is able to get a glimpse into the mind and make the reading process explicit. Pictorial mental models include visual representations like diagrams, maps, charts, etc. Movement mental models include gestures. Story mental models include stories, cartoons, etc. Analogy mental models include analogies like comparison of parts of a tree to elements of character development in literature (Payne, 2002).

According to Pani (2004), students' attitude to mental modelling is positive. The students are able to perform better at their tasks, and mental modelling strengthens the belief that they could be helped with reading problems through this technique. Mental modelling has the potential for strategy training, trainees' enjoyment and appreciation of working in groups, etc. (Pani, 2004).

## **3. Research Questions**

1. Which strategy in mental modelling is used frequently in guided and paired reading?
2. Does mental modelling improve the reading skills of the students who practise guided and paired reading in the classroom?

## **4. Location of the Study**

VV College of Engineering is situated in a village called Arasoor near Tisaiyanvilai. It is in the Tuticorin District of Tamilnadu, India. The college has five departments: Mechanical, Civil, Electronics and Communication, Electrical and Electronics, and Computer Science Engineering. It has more than 800 students from rural and sub-urban areas. It has an excellent language lab, digital library, classrooms with projectors, etc.

## 5. Samples of the Study

96 students who study ECE (Electronics and Communication Engineering) in VV College of Engineering were taken as samples. They were in two sections ECE (A) and ECE (B). Guided reading was done in ECE (A) while paired reading was done in ECE (B). 2 teachers were involved in forming the groups or pairs, supervising the reading activities, conducting tests, collecting feedback, consolidating data, etc.

## 6. Procedure

In ECE (A) and ECE (B), a pretest was conducted to evaluate the students' reading and comprehending skills. Then the students were briefed about the process of mental modelling and the strategies which can be used to create mental models while reading. Pictures, gestures, analogies, semantic organisers or graphic organisers like KWL charts, mind maps, concept maps, venn diagrams, story webs, fishbone maps, flowcharts, etc. were explained in detail with examples and illustrations.

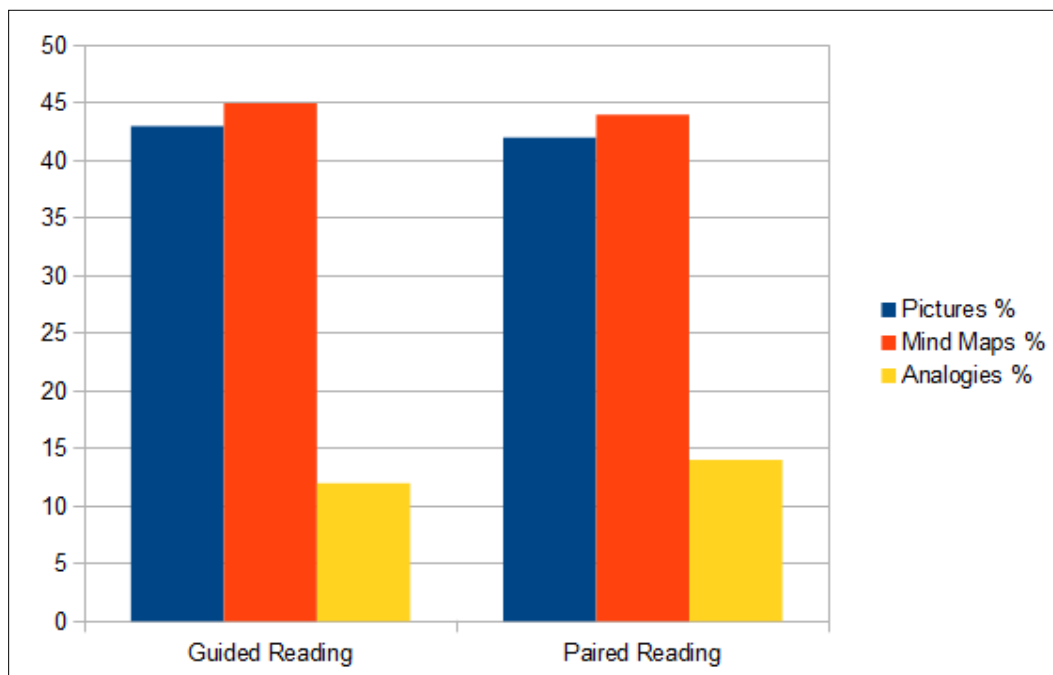
In ECE (A), the students were divided into small groups (4 – 6 students) with a proficient student as the team leader of each group. The team leader guided his or her team members to read effectively by creating mental models. In ECE (B), the students were divided into pairs. The proficient student helped the beginner in each pair to create mental models while reading. The students were made to record their mental models in the form of pictures, gestures, analogies, semantic organisers or graphic organisers like KWL charts, mind maps, concept maps, venn diagrams, story webs, fishbone maps, flowcharts, etc. At the end of the reading course, a post-test was conducted to find the improvement in the students' reading and comprehending skills.

## 7. Data Analysis and Interpretation

**Table 7.1 Mental Modelling Strategies Used Frequently by the Students who Practise Guided Reading and Paired Reading:**

Student Groups	Pictures %	Mind Maps %	Analogies %
Guided Reading	43	45	12
Paired Reading	42	44	14

**Graph 7.1 Mental Modelling Strategies Used Frequently by the Students who Practise *Guided Reading* and *Paired Reading*:**

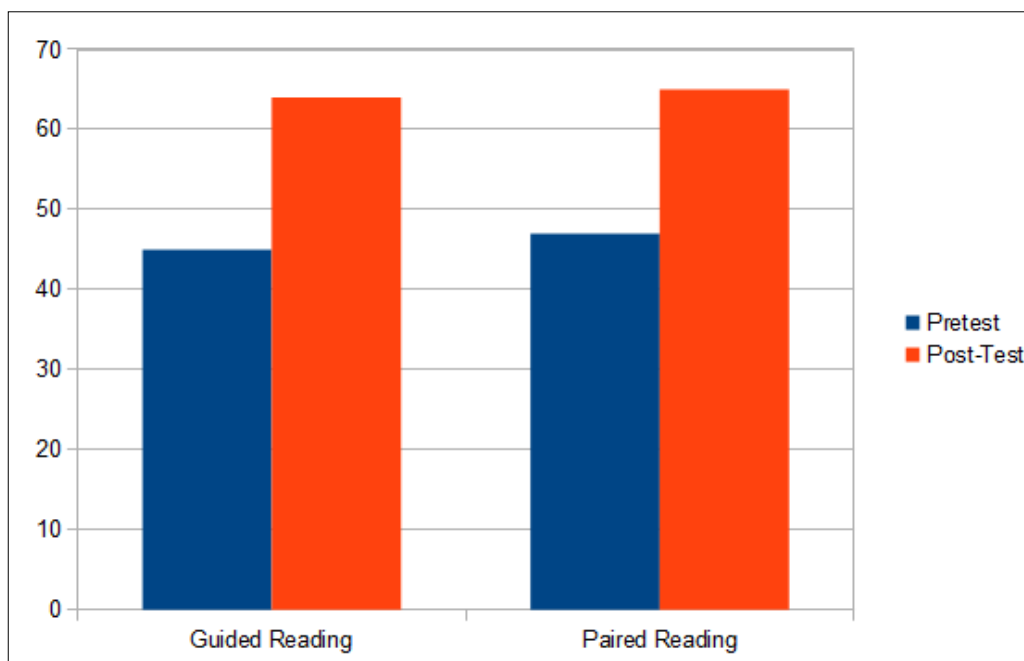


**Table 7.2 Average Pre-test & Post-test Scores of the Students who Practise *Guided Reading* and *Paired Reading*:**

Student Groups	Average Scores	
	Pretest %	Post-Test %
Guided Reading	45	64
Paired Reading	47	65

**Graph 7.2 Average Pre-test & Post-test Scores of the Students who Practise *Guided Reading* and *Paired Reading*:**





## 8. Quantitative Findings

- 43% of ECE (A) students who practised guided reading use pictures, 45% of them used mind maps, and 12% of them used analogies to develop mental modelling.
- 42% of ECE (B) students who practised paired reading used pictures, 44% of them used mind maps, and 14% of them used analogies to develop mental modelling.
- The average pretest and post-test scores of ECE (A) students who practised guided reading to develop mental modelling were 45% and 64% respectively.
- The average pretest and post-test scores of ECE (B) students who practised paired reading to develop mental modelling were 47% and 65% respectively.
- The post-test scores have increased for both ECE (A) and ECE (B) students. There was no significant difference between the scores of the two groups which used guided and paired reading to develop mental modelling.

## 9. Qualitative Findings

- Both ECE (A) and ECE (B) students prefer pictures and mind maps to gestures and analogies for developing mental models.

- Both ECE (A) and ECE (B) students want the support and guidance of the teacher while practising guided and paired reading.
- ECE (A) students who practise guided reading find it effective when the group leader is helpful and caring. If the group leader is not efficient enough, the teacher has to interfere and render necessary help.
- ECE (B) students who practise paired reading find it useful when one person is proficient enough to guide / help the other person in the team. If both the students are unable to help each other, the teacher has to support and provide enough help.

## 10. Recommendations

- ⤴ Mental modelling can be developed by guided and paired reading.
- ⤴ Pictures, illustrations, analogies, gestures, etc. can be used to develop mental models.
- ⤴ Semantic organisers or graphic organisers like KWL charts, mind maps, concept maps, venn diagrams, story webs, fishbone maps, flowcharts can also be used to develop mental models.

## 11. Scope for Further Research

- ⤴ Surveys can be conducted to find whether self-reading helps in developing mental models.
- ⤴ Longitudinal researches can be done to find out whether the students use mental modelling to read or study languages or technical subjects outside the classroom.

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