



## INFLUENCE OF METACOGNITIVE READING STRATEGIES IN ENHANCING READING SCIENCE AMONG D.EL.ED.STUDENT TEACHERS

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### ABSTRACT:

Reading was one of the four language skills LSRW-Listening, Speaking, Reading and Writing. It was the complex cognitive process of decoding symbols to derive meaning. The process of reading required continuous practice, development and refinement. Reading was an essential skill for success. But reading is one of the challenging areas in the education system. The present study was an experimental study. 15 student teachers formed the sample. Modified version of Metacognitive Reading Strategy Questionnaire developed by Taraban, Kerr and Ryneerson (2004) was used. Mean and standard deviation were calculated. The mean score of the Posttest was higher than the Pretest. It implied that the intervention on metacognitive strategies use was effective. Students were able to make connections and apply reading strategies to other subjects too. Teachers should assist their students to use metacognitive strategies while reading textbook for maximum acquisition of knowledge.



**KEYWORDS:** Reading, Metacognitive reading strategies, science text.

### INTRODUCTION :

Reading was one of the four language skills LSRW-Listening, Speaking, Reading and Writing. It was the complex cognitive process of decoding symbols to derive meaning. Language processing was measured as reading comprehension. One can read in silence or aloud. The process of reading required continuous practice, development and refinement. It was a complex process between reader and texts. Readers used a variety of reading strategies to decode that is to translate

symbols or sounds or visual codes and comprehension. Context clues may help in understanding the meaning of unknown words. Readers integrated new words with already known words.

### READING

According to Armbruster et al. (1983) reading relates to four variables- texts, tasks, strategies and learner characteristics. Text refers to the textual features of learning materials which influenced comprehension and memory. Arrangement of ideas

in texts, vocabulary, syntax, clarity of authors intention and readers interest and familiarity with a text, all have an effect on students learning. Muth (1987) found that text structures used in content area textbooks was mostly informational or expository text. Muth presented three strategies - hierarchical summaries, conceptual maps, and thematic organizers to help students read and comprehend texts. These strategies raise students' awareness of text structures.

Narrative text and expository

text were the two types of scientific text structures. Narrative text (story telling) was very familiar and easy to understand and remember. Five common types of text structures used in science texts were Generalization- the extension or clarification of main ideas through explanations or examples. Enumeration- Listing of facts, sequence- connecting series of events, Classification- grouping items into classes and comparison/ contrast- examining the relationships between two or more things.

Reading was an essential skill for success in school and in life. But reading is one of the challenging areas in the education system. The single most important factor in reading is the strategies learners utilize (King). Among the learning strategies cited in the literature, the metacognitive and cognitive strategies are most relevant to reading. Metacognition is concerned with monitoring and evaluating the success of the learning process. Cognitive strategies relate to the specific contexts and learning tasks. Metacognitive strategies are high order executive skills that make use of knowledge of cognitive process, to regulate one's own learning by means of planning, monitoring and evaluating. Different strategies are effective with different types of text. However, little research has been done to explore the nature of the reading strategies. Hence the researcher wants to investigate the analytic reading strategies among teacher trainees.

### **SUPPORTED STUDIES**

Reading is the most required skill for students in academic settings, as they want to read more reading materials and access professional information in various subject fields. Brown (2007 P.119) defines strategies as the "specific methods of approaching a problem or task, modes of operation for achieving a particular end, planned designs for controlling and manipulating certain information." The distinguishing feature of the strategies is consciousness. (Chamot 2005 as cited in Brown 2007). Pani (2004) defines reading strategies as "the mental operations involved when readers approach a text effectively to make sense of what they read. Good readers apply more strategies more frequently and more effectively than poor readers."

Identifying the purpose in reading, Using graphemic rules and patterns to aid in bottom-up reading, Use different silent reading techniques for relatively rapid reading, Skim the text for main ideas, Scan the text for specific information, Use semantic mapping or clustering, Guess when you aren't certain, Analyze vocabulary, Distinguish between literal and implied meanings and Capitalize on discourse markers to process relationships were the ten efficient reading comprehension strategies found by Brown. (2001).

He (2008) found that the participants with stronger goals generally performed better than those with the same proficiency levels but weaker goals. How readers comprehend a task, what textual cues readers use, how readers make sense of what they read and how they react when they do not understand were some of the reading strategies that help readers to interact with the written texts (Block, 1986). Hulya (2013) used six reading strategies (predicting, visualising, making connections, summarizing, questioning and inferring) and improved her students reading skills. Prospective teachers used reading strategies like infer, meaning and drawing most frequently. They try to teach reading strategies which are familiar to them and what they use. (Selma, 2015).

### **METHODOLOGY**

#### **Subject**

The present study was an experimental study. 15 student teachers formed the sample. Pretest was conducted at the beginning of the study. Orientation on metacognitive reading strategies was given for three days. Students were allowed to practice those strategies while reading science for a month. Post test was conducted after 4 weeks.

#### **Instruments**

Modified version of Metacognitive Reading Strategy Questionnaire developed by Taraban, Kerr and Rynearson (2004) was used. Analytic cognitive part assessed students' efforts to comprehend a text.

In this study, analytic reading strategies used by D.El.Ed student teachers while reading science texts were analysed.

### Steps In Reading.

Readers have to set goals before reading. They have to analyze whether what they read help to attain their goals. While reading a passage in science textbook the students have to note down whether the passage they read was easy or difficult to read. They have to imagine what they read, in pictorial format so that they can understand what they read. Then they examine whether they read what they want to read or whether it is relevant to what they want to read. They have to extract knowledge from what they read, they have to assess whether the knowledge gained by reading, is an already known fact or contributing new information. If not they search for other similar materials to read so that they read what they want or to gain the knowledge. By reading, they have to predict the matter that will come later in the reading material.

### PROCEDURE

#### Data Analysis

In order to analyze data, the software package Statistical Package for Social Sciences (SPSS) was used.

### RESULTS AND DISCUSSION

Descriptive analysis gives information about the nature of a particular group of individuals. Mean and standard deviation were calculated to determine the central tendencies and dispersion of variables to describe the level of the sample.

**Table -1**

**Distribution of Mean and SD of Metacognitive reading strategies in enhancing reading science**

S.NO	GROUP	SCORE	
		MEAN	SD
1	PRE TEST	29.40	6.85
2	POST TEST	52.71	6.37

### FINDINGS

The mean score and SD of Pretest was 29.40 and 6.85. The mean score and SD of Posttest was 52.71 and 6.37. The mean score of the Posttest was higher than the Pretest. It implied that the intervention on metacognitive strategies use was effective.

### CONCLUSION

The study explored how the student teachers used reading strategies while reading science texts. The findings were similar to Selma (2015) study which proved that prospective teachers were aware of the importance of teaching reading strategies, but their application in the classroom showed that they do not focus on teaching strategies in the classroom. Awodun et al (2013) proved that application of metacognitive strategies had significant influence on the reading and learning of integrated science students and their academic performance. Results revealed that initially students were unfamiliar with certain analytic reading strategies but later on they progressed and applied these strategies while reading scientific texts. Students were able to make connections and apply reading strategies to other subjects too. By Explicit analytic reading skills instruction intervention, 96% of students' analytic reading skills improved (Megan). Lian & Sirinthorn (2013) study indicated that there was a significant positive correlation between metacognitive strategy use and English reading achievement. Teachers should assist their students to use metacognitive strategies while reading textbook for maximum acquisition of knowledge. Future investigations may be conducted in other language skills like listening, speaking and writing.

**REFERENCES**

- Armbruster, Bonnie B., et al (1983). The Role of Metacognition in Reading to Learn: A Developmental Perspective. Reading Education Report No. 40. Urbana, IL: Center for the Study of Reading. [ED 228 617].
- Awodun.A.O.,Falemu.F.A&Daramola. M.A. (2013). The impact of metacognitive strategies of textbook reading on students learning of integrated science in secondary schools in Ekiti state, Nigeria, Continental J. Educational Research, 6(1), pp: 33-38.
- Block, E. (1986). The comprehension strategies of second language readers. TESOL Quarterly, 20, 463-494.
- Brown, H. D. (2001). Teaching by principles: An interactive approach to language pedagogy. Englewood Cliffs, New Jersey: Prentice Hall Regents.
- Brown, H. D. (2007). Principles of Language Learning and Teaching. White Plains, N.Y.: Pearson Education.
- He, T. (2008). Reading for different goals: the interplay of EFL college students' multiple goals, reading strategy use and reading comprehension. Journal of Research in Reading 31, 224-242.
- Hulya (2013). Improving reading skills through effective reading strategies, Procedia Social and Behavioral Sciences, 70, pp: 709 - 714.
- King, K. (2008). Reading Strategies. Freely available at: <http://www.isu.edu/~kingkath/readstr.html>.
- Lian, Zhang & Sirinthorn, Seepho. (2013). Metacognitive use and academic reading achievement: Insights from a Chinese context, Electronic Journal of Foreign Language Teaching, 10(1), pp:54-69.
- Megan Long, The Effects of Explicit Analytic Reading Skills Instruction on the Ability to Solve Mathematical Problems in a Written Format in a Third-Grade Classroom, University of Arkansas. [http://www.arareading.org/Resources/Documents/The%20Reader/A3\\_Long.pdf](http://www.arareading.org/Resources/Documents/The%20Reader/A3_Long.pdf).
- Muth, K. Denise (1987). "Structure Strategies for Comprehending Expository Text." Reading Research and Instruction, 27(1), 66-72. [EJ 364 719].
- Pani, S. (2004). Reading strategy instruction through mental modeling. ELT Journal 58, 355-362.
- Romiro.G. Bautista. (2012). The impact of Cognitive and Metacognitive learning strategies in desktop teaching, International Journal of Literature, Linguistics & Interdisciplinary studies, 1(2), pp: 135-143.
- Selma, Kara (2015). Reading strategies: Prospective teachers and their teaching practices, Journal of Educational and Instructional studies, 5(2), Article 3, pp:20-28.



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