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**PRIMARY TEACHERS` METACOGNITIVE AWARENESS OF
READING STRATEGIES**

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Abstract

Metacognitive reading strategies are a key factor for a deep understanding of academic texts. The purpose of this study is to analyse the level of primary teachers` metacognitive awareness of reading strategies and its relation to explicit teaching of metacognitive reading strategies in the classroom setting. 56 primary teachers from Arad filled in the Metacognitive Awareness of Reading Strategies Inventory and a questionnaire regarding explicit instructional practices on three metacognitive reading strategies: planning, monitoring and evaluating. The results showed that teachers have a medium level on Global Reading and Support Reading strategies and a high level on Problem-Solving strategies. The Metacognitive Awareness of Reading Strategies was positively associated with explicit teaching of metacognitive reading strategies. The findings of this study underline the idea that in order to effectively teach metacognitive reading strategies to students, teachers should be aware of their own reading mechanism. For greater impact, future educational programs on reading should aim to increase the metacognitive awareness of both students and teachers.

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1. Introduction

From a psycholinguistic point of view, reading is a problem-solving behaviour that actively involves the reader in the process of extracting meanings (Papalia, 1987). Understanding cannot take place without the interaction between the readers and the text (Pardo, 2004). These transactional activities refer to the integration of information in the text with prior knowledge to build meaning from the context, and to the use of conscious and unconscious strategies to solve comprehension problems.

At the level of the curriculum, reading is a cross-disciplinary, transdisciplinary competence that is formed and perfected in all school subjects, but which becomes a priority in the curricular area “Language and Communication” (Hadârcă, 2015). At the end of the primary cycle, students should be able not only to read a text correctly and fluently at first glance, but to extract the necessary information from the text, analyze it, compare it, critically reflect upon it. The results of the international tests (PIRLS, PISA) have shown that, unfortunately, this is not always possible. Many countries, including our country, are experiencing the phenomenon of functional illiteracy, which refers to “the incapability to understand complex texts despite adequate schooling, age, language skills, elementary reading skills, and IQ” (Vagvölgyi, Coldea, Dresler, Schrader, & Nuerk, 2016, p. 9). This deficiency affects students not only in their school performance but also in their everyday life.

There are many causes and factors related to functional illiteracy, but a solid hypothesis that has emerged over the last few decades is that poor readers have not mastered effective strategies to deal with reading tasks. Good readers are very strategic before, during, and after reading (Pressley & Gaskins, 2006). They activate a series of cognitive and metacognitive strategies when reading a complex, academic or non-academic text. Cognitive strategies are activated to facilitate task fulfillment, and metacognitive strategies to monitor and regulate cognitive processes involved in the task (Salataci & Akyel, 2002; Ahmadi, Ismail, & Abdullah, 2013). There is a wide range of cognitive strategies that are used by experienced readers such as: browsing, context guessing, use of the dictionary, taking notes, emphasizing, using images, activating previous knowledge, summarizing, using linguistic indices, repeating words (Lemeni, 2001).

Metacognitive strategies are superior and often unconceived. Jacobs and Paris (1987) have divided metacognitive control in planning, evaluation and regulation processes. Planning includes selecting a strategy to achieve a goal. Evaluation is the monitoring of progress towards the goal. Adjustment refers to reviewing and modifying the strategy to reach the goal. In other words, the subject first analyzes what is to be done, makes a plan, analyzes the utility of the plan, and then makes changes and revisions to the original plan. In the process of reading monitoring, it is important for the student to have knowledge of reading strategies (declarative knowledge), to know how to use these strategies (procedural knowledge) and to know when to use strategies (conditional knowledge).

Reading comprehension can be developed through explicit training and teaching (Rupley, Blair, & Nichols, 2009). A series of studies have shown that instruction of metacognitive strategies enhances reading comprehension even in primary school students (Houtveen, & van de Grift, 2007; DeBoer, 2003; Muñiz-Swicegood, 1994; Othman, Mahamud, & Jaidi, 2014). Metacognitive training programs help students to “think about their thinking” before, during, and after they read (Boulware-Gooden, Carreker, Thornhill, & Joshi, 2007). They are taught to plan, monitor, and evaluate reading, frequently asking if what they read

makes sense, sounds or looks right, and to use a number of repair strategies when they have difficulty during reading.

2. Problem Statement

Metacognition plays a central role in reading comprehension. It has been demonstrated that when reading a complex text, skilled readers implement a series of metacognitive strategies as compared to weak readers who do not. Even if there are higher level functions, metacognitive skills can be developed in young children as well. Through guided and explicit modeling, students can learn strategies to process the written message thoroughly and to extract the required information in reading samples. Although they are stipulated in school teaching recommendations found in the curricula, not all the teachers teach students strategies to monitor understanding. Castanheira, Roman, and Hossu (2018) highlighted, for example, that metacognitive awareness of teaching is positively related to the teaching of metacognitive strategies involved in reading. The more teachers are aware of their own teaching, the more they teach students to be more metacognitive during reading. However, there are very few studies to investigate the factors related to the teaching of metacognitive reading strategies. Analyzing some variables associated with metacognitive teaching of reading would be an important step in understanding this instructive activity.

3. Research Questions

The research questions are the following:

- How do primary school teachers see themselves as readers? What is the level of metacognitive awareness of their reading strategies in reading academic texts?
- Is there a positive relationship between teachers' metacognitive awareness abilities of their own reading strategies and the direct instruction of metacognitive reading strategies in the classroom?

4. Purpose of the Study

The purpose of this study is to investigate possible factors related to the teaching of metacognitive reading strategies to pupils in primary school, namely their own metacognitive awareness of the educator's reading strategies. We have started from the premise that if teachers are aware of the metacognitive strategies involved in their reading, then the possibility to facilitate the development of metacognitive skills in pupils increases.

5. Research Methods

5.1. Subjects

The study involved 56 primary school teachers from Arad County (53 men and 3 women). In terms of age, 7% of participants are in the 20-30-year-old category, 25% of participants are in the 31-40-year-old category, 48% of participants are in the 41-50-year-old category and 19% of participants are in the 51 years or older category. The subjects have a teaching experience of 1 to 40 years, the average being 20.92 years. Out of 56 subjects, 48% hold a master's degree in the field, and 73% stated that they have the first-degree teacher certification (the highest teaching degree in the Romanian educational system).

5.2. Research tools

The subjects have voluntarily filled in two questionnaires: Metacognitive Awareness of Reading Strategies Inventory (MARSİ) and the Instructional Practice on Metacognitive Reading Inventory (IPMRI).

The first self-report instrument, Metacognitive Awareness of Reading Strategies Inventory (Mokhtari & Reichard, 2002) was designed to assess adolescent and adult readers' metacognitive awareness and perceived use of reading strategies while reading academic or school related materials. It consists of 30 items distributed on three sub-scales or factors: Global Reading Strategies, Problem-Solving Strategies, and Support Reading Strategies. The subjects can respond on a scale of 1 (I never or almost never do this) to 5 (I always or almost always do this). An average score can be calculated for the entire scale or for the three factors. A score of 3.5 or higher shows a high level of strategy use, and between 2.5–3.4 a medium level and a score of 2.4 or lower shows a low level.

The factor Global Reading Strategies (GLOB) includes items that refer to setting purpose for reading, activating prior knowledge, checking whether text content fits purpose, predicting what text is about, confirming predictions, previewing text for content, skimming to note text characteristics, making decisions in relation to what to read closely, using context clues, using text structure, and using other textual features to enhance reading comprehension.

Problem-Solving Strategies (PROB) refer to strategies such as reading slowly and carefully, adjusting reading rate, paying close attention to reading, pausing to reflect on reading, rereading, visualizing information read, reading text out loud, and guessing meaning of unknown words.

Support Reading Strategies (SUP) include strategies such as taking notes while reading, paraphrasing text information, revisiting previously read information, asking self-questions, using reference materials as aids, underlining text information, discussing reading with others, and writing summaries of reading.

MARSİ proved to be a valid and reliable inventory to measure readers' metacognitive awareness (Mokhtari & Reichard, 2002; Kallio et al., 2017). In this study, Cronbach's Alpha is .92, indicating a good internal coherence of the instrument.

The second tool, Instructional Practice on Metacognitive Reading Inventory (Castanheira, Roman, & Hossu, 2018) was designed to determine the level of explicit teaching of metacognitive reading strategies in pre-, during- and after reading a text. It contains 24 items in which subjects responded on a scale of 1 (never or almost never) to 5 (always or almost always) to what extent they instruct students to use metacognitive reading techniques when reading a text at first glance, independently. The statistical analysis indicated a good internal consistency of the instrument, with the Cronbach's Alpha coefficient of .88. This survey focuses on the teaching of metacognitive reading in the three dimensions: planning, monitoring and evaluation.

Explicit teaching of *before reading metacognitive strategies* (IPMRI- Planning) includes teaching students to: reflect on the purpose of reading (obtaining some information, for pleasure, etc.), analyse the length and structure of the text, anticipate the content by image, anticipate the content by title and activate previous knowledge related to the topic of the text.

Explicit teaching of *during reading metacognitive strategies* (IPMRI-Monitoring) includes teaching students to: check whether they have understood the main idea of the fragment, stop and check if pre-reading before the text has come true, check whether new predictions have been made about the text based

on the information, check whether they have made connections with previous information in the text, check whether and how they realize that what they read makes sense, reflect on the right strategy if they did not understand certain words or fragments, make inferences, make mental images related to the content of the text, make sure they understand the vocabulary, reread the portion of text they did not understand, slow the pace of reading if they do not understand, ask for help if they did not understand and reflect on the extent to which they can maintain their interest on the material.

Explicit teaching of *after reading metacognitive strategies* (IPMRI- Evaluation) includes teaching students to: verify to what extent the predictions have been verified, consider whether they have chosen the right strategy to understand a difficult text, revise the text to check the level of understanding, summarize the text, continue text processing according to the purpose of reading and reflect on how to use information in real life.

6. Findings

Descriptive statistics indicated a high level of MARSİ (M=3.54) (Table 01). The authors of MARSİ considered high, an average of 3.5 and above. The analysis on all three scales highlighted that teachers have a medium level on Global Reading Strategies (M=3.47) and Support Reading Strategies (M=3.33) and a high level on Problem-Solving Strategies (M=3.88).

The subjects also show a high level of awareness in terms of instructional practice related to metacognitive reading (M=4.07). The lowest level is represented by the awareness of metacognitive teaching strategies used before reading (M=3.88) and the highest level is the awareness of metacognitive reading strategies used after reading (M=4.16).

Table 01. Descriptive statistics for MARSİ and IPMRI

Variables	Minimum	Maximum	Mean	Std. Deviation
MARSİ -Global Reading Strategies	1.77	5.00	3.47	.69
MARSİ -Problem-Solving Strategies	2.13	5.00	3.88	.73
MARSİ -Support Reading Strategies	1.56	5.00	3.33	.75
MARSİ-total score	1.83	5.00	3.54	.65
IPMRI-Before reading strategy	2.20	5.00	3.88	.65
IPMRI-During reading strategy	2.62	5.00	4.10	.59
IPMRI-After reading strategy	2.67	5.00	4.16	.53
IPMRI-total score	2.58	5.00	4.07	.54

To check whether there is a relation between the MARSİ and IPMRI scores, we have used the correlation statistics for the overall table and the three scales.

Table 02. Correlations between MARSII scores and IPMRI scores

	Before reading strategies	During reading strategies	After reading strategies	IPMRI-total score
Global Reading Strategies(GLOB)	.444**	.508**	.390**	.506**
Problem-Solving Strategies (PROB)	.242	.344**	.158	.302*
Support Reading Strategies (SUP)	.211	.420**	.243	.360**
MARSII-total score	.352**	.486**	.313*	.451**

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

The correlation analysis indicated a significant positive relationship between MARSII scores and IPMRI scores ($r = .451^{**}$) (Table 02). Of the three MARSII factors, GLOB is the only factor positively associated with scores from all three IPMRI sub-scales. The strongest association is between GLOB and the training of *during reading strategies* ($r = .508^{**}$), then with the training of *before reading strategies* ($r = .444^{**}$), the lowest being the correlation with the *training of the after reading strategies* ($r = .390^{**}$). PROB is positively associated with *during reading strategies* ($r = .344^{**}$). SUP is significantly associated with *during reading strategies* ($r = .420^{**}$).

We applied the simple linear regression method to verify the effectiveness of a predictive model of IPMRI based on the MARSII variable. The total score at IPMRI was introduced as a variable criterion, and the total MARSII score as predictor variable. Simple linear regression revealed that MARSII is a predictor of IPMRI ($F(1.54) = 13.821, p < 0.001$). The adjusted value R square is .189, meaning that MARSII justifies 18.9% of the metacognitive reading strategies instruction, the global effect being of medium-high level (Cohen, 1988).

7. Conclusion

The purpose of this study was to analyse the level of primary teachers' metacognitive awareness of reading strategies and its relation to explicit teaching of metacognitive reading strategies in the classroom. The first research question was: *What is the level of metacognitive awareness of the primary school teachers' reading strategies when they read academic texts?* The results highlighted a high level of metacognitive awareness of their reading strategies. Subjects reported the highest score of 3.88 on PROB, followed by the score of 3.47 on GLOB, and the lowest score of 3.33 on the SUP. The subjects are mostly aware of the use of problem-solving strategies and at a medium level of the use of global and support strategies. The results are in accordance with previous studies. Using MARSII as measurement tool, Iwai (2016) reported that preservice teachers scored the highest in the Problem-Solving Strategies ($M=3.75$), had the second highest scores in the Global Reading Strategies ($M=3.45$) category and the lowest scores in the Support Reading Strategies ($M=2.84$). A first conclusion of this study is that teachers generally see themselves as experienced and strategic readers and are aware of the importance of using metacognitive strategies in reading academic texts. When it comes to metacognitive reading training, the results are even more promising, the explicit instructional practices on the three metacognitive reading strategies (planning, monitoring and evaluating) being high.

The second research question was: *Is there a positive relationship between the metacognitive awareness abilities of one's own reading strategies and the direct training of metacognitive reading*

strategies in the classroom? The statistical analysis showed a strong positive association between these two variables. Global Reading Strategies awareness is the most closely related to direct classroom training of reading strategies ($r = .506^{**}$). The more primary teachers are aware of the use of techniques such as setting purpose for reading, predicting what text is about, confirming predictions, using text structure and other textual features to enhance reading comprehension, the more they teach students strategies that would monitor understanding before-, during- and after-reading. However, Global Reading Strategies are of medium level, which highlights the need for teacher training to develop metacognitive awareness skills in both reading and literacy. Positive correlations were highlighted between PROB and teaching *during reading strategies* ($r = .344^{**}$) and between SUP and teaching *during reading strategies* ($r = .420^{**}$). Teachers who teach students how to control their understanding during reading are also those who are aware of activating similar strategies for themselves.

This research emphasizes the importance of reflection and self-analysis of our own ways of action when it comes to educating students. The educational content can often interfere with our own experience, and so we can deviate from the curricular requirements.

Another important conclusion of this study is that in order to be successful in implementing metacognitive reading strategies, teachers should be trained in the awareness of some instructional practices that they feel not very well trained for, such as global reading strategies. MARSII proved to be a predictor of IPMRI, therefore future educational programs on reading should aim to increase the metacognitive awareness of both students and teachers.

The limitation of this study is the low number of participants. Although MARSII's results are in line with the results of other studies, a larger sample would increase the power of data generalization.

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