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An Analysis of Prospective Turkish Teachers' Metacognitive Reading Strategy Use

Zeynep Cetinkaya Edizer

Istanbul University, Hasan Ali Yucel Faculty of Education, Turkish Language Teaching, Istanbul, Turkey
E-mail: cetinkayazeynep@gmail.com

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ABSTRACT This study aims to determine the types and frequency of metacognitive reading strategies used by high-achieving and underachieving students. The participants of the research comprised ten students studying at the Turkish-Language Teaching (TLT) department at Istanbul University, of whom five were high achieving and five were underachieving. The paper uses the think-aloud protocol in order to achieve a descriptive result. The participants were asked first to articulate the mental processes they used as they read a narrative text. After they finished reading the text, participants were asked how they understood the text, what problems they encountered as they read the text, and how they handled these problems. The results showed that participants used monitoring and regulation strategies the most. The total frequency of metacognitive reading strategies used while reading the story was 253 in high-achieving students and 122 in underachieving.

INTRODUCTION

Metacognition is one of the most important concepts in the current approach to education. Introducing this concept to the field of education, Flavell (1976 as cited in Brown 1977: 4) defines it as "an individual's knowledge about his/her own cognitive processes and products." Flavell (1979) studied metacognition in terms of knowledge and experience. Metacognition can be briefly defined as one's ability to think about what one is thinking (Adey and Shayer 1994 as cited in Gilbert 2005: 15).

In metacognition, not only the knowledge itself, but how it is used is important. Analyzing this is accomplished through strategy use. It becomes possible to use the knowledge flexibly when necessary through strategies (Ozsoy 2008: 719-720). Metacognitive strategies involve such strategies as defining what one knows and does not know, note taking, planning, self-regulation and self-evaluation (Blakey and Spence 1990). Brown (1980 as cited in Baker and Brown 1984: 354) categorized the metacognitive skills required during reading under the age of six as, "explaining the reason for reading, defining the essence of the message, focusing on the main content, monitoring the activities to decide whether comprehension takes place or not, deciding whether the goals are achieved by self-questioning, and correcting the comprehension mistakes when they occur."

When metacognitive reading strategies in the relevant literature are examined, the researchers encounter various classifications. One of these studies (McGuire and Yewchuk 1996) introduces *interpretation*, *regulation*, and *evaluation* classes. Another study (Cicekoglu 2003) classifies as *previewing the text to activate the pre-existing knowledge, defining the purpose of the reading task, generating hypotheses about the meaning of the text from the content, shifting between reading strategies when comprehension is blocked, defining the associations between important points to understand the text as a whole, evaluating the predictions, underlining the important information, and trying to activate the scheme about the content.* Berkowitz (2004) proposes as classification according to the *inference*, *monitoring* and *evaluation*. Schellings et al. (2006) classify as *interpreting one's own reading behavior* and *reacting to the task and evaluating one part of the text*. Ghonsooly and Eghtesadee (2006) introduce *planning, monitoring, evaluating, self-questioning, self-correction* and *selective attention* classes. Anastasiou and Griva (2009) propose *e-reading, selective attention, slowing down reading, self-questioning, checking*

Address for correspondence:
Dr. Zeynep Cetinkaya Edizer
Istanbul Universitesi, Hasan Ali Yucel Egitim Fakultesi, Istanbul Turkey.
Telephone: +90 (212) 440 0000
Fax: +90 (212) 513 0561
E-mail: cetinkayazeynep@gmail.com

comprehension, directed attention, revising, performance or text evaluation, problem definition and *self-correction* classes.

Metacognitive reading strategies are classified under three main categories: "planning, monitoring and evaluation" (Baker and Brown 1984: 354). Planning involves selecting strategies and providing the available sources (Schraw and Moshman 1995: 354). Monitoring is the instant comprehension regarding comprehension and task performance. Evaluation is the stage where an individual evaluates the learning outcomes and regulation process at the end of the learning process (Akturk and Sahin 2011: 392). Similarly, Karatay (2009, 2011) defined metacognitive reading strategies under the same three categories. The researcher delineated these main categories into thirty-two sub-categories including defining the purpose of reading task, previewing the text, note taking while reading, reading again when distracted, underlining the important points, checking the applicability of the idea or information in real life, summarizing the ideas in the text, and re-reading to enhance comprehension when the text is difficult.

There are several studies on the use of metacognitive reading strategies. McGuire and Yewchuk (1996) studied gifted primary school students, and found that these students used evaluation, interpretation, and regulation processes, but they were not competent with these strategies. Berkowitz (2004) conducted a study on metacognitive reading-strategy use by high-achieving and underachieving secondary school students, which revealed no significant difference between the groups in terms of frequency of strategy use. However, it was found that high-achieving students had more homogenous scores, while underachieving students had heterogeneous scores. The study also revealed that high-achieving students used inference and evaluation strategies more often. These students were found to use such monitoring strategies as recognizing and resolving problems in reading more frequently. Most of the underachieving students used inference and evaluation strategies. Hannah and Shore (2008) studied 5-6 and 11-12 grades' gifted students' use of metacognition skills. They found that 11-12 graders used monitoring and evaluating strategies more often when trying to understand the text.

Anastasiou and Griva (2009) studied Greek-speaking sixth graders aged 11-12, and found that good readers used metacognition strategies more often. They also found a significant difference in selective attention and self-questioning categories in favour of good readers. However, no significant difference was established in terms of such categories as a slowed down reading pace, re-reading, checking for comprehension, directed attention, revising, recognizing problem, and self-correction. In terms of performance or evaluating text, a significant difference was found in favour of good readers, who have strong reading comprehension skills. It was also found that generally good readers had better awareness in all three groups. Yayli (2010) attempted to determine the strategies used by the first-grade students in an English-language teaching program while reading a text and concluded that participants used a limited variety of metacognitive strategies (only five). Strategies used most often by participants were "forming a tentative hypothesis and monitoring," the least-used strategies were "ignoring and continued reading."

Denton et al. (2015) studied students in grades 7, 9 and 11. In their study, they found that poorly understanding students receive lower scores than others on inference or paraphrasing and monitoring.

The studies on determining metacognition via scales are widespread in the literature (Kenanlar and Pilten 2014; Cetinkaya Edizer 2015; Veloo et al. 2015; Yaliz Solmaz 2015). However, many of them do not use the think-aloud protocol, which offers more observations of the participants' strategy use. The present research was aimed at determining the types and frequency of metacognitive reading strategies used by prospective Turkish teachers with the help of the think-aloud protocol. Turkish language teachers are of primary importance in terms of developing students' comprehension competencies. Teaching comprehension strategies requires that teachers know and use them first. Therefore, it was aimed to determine the strategies used by the prospective Turkish language teachers. Thus, the following research questions were asked in the study:

1. What are the types of planning strategies used by high-achieving and underachieving prospective Turkish teachers, and how often are they used?
2. What are the types of monitoring/regulation strategies used by high-achieving and underachieving prospective Turkish teachers, and how often are they used?

3. What are the types of evaluation strategies used by high-achieving and underachieving prospective Turkish teachers, and how often are they used?

METHODOLOGY

Research Model

The metacognitive reading strategies were described using the think-aloud protocol. The think-aloud protocol is a qualitative method used to report the individuals' thoughts orally and to discover the comprehension procedures (Cohen 1996). Many studies use think-aloud protocol to determine the reading strategies (McGuire and Yewchuk 1996; Berkowitz 2004; Lau 2006; Schellings et al. 2006; Yayli 2010; Alsheikh and Mokhtari 2011).

Working Group

The participants of the research were ten senior students studying at TLT department at COMU, of whom five were high-achieving and five were underachieving. Participants were selected using a narrative reading comprehension test developed by Karatay (2007). The internal consistency coefficient for the 25-item test was estimated through the KR-20 reliability analysis, which yielded a result of 0.73. After the test was administered to 30 senior students at the TLT department, those students scoring 80 or more were qualified as high-achieving, while those scoring 40 or lower were considered to be underachieving students. Participants were categorized as high-achieving or underachieving, and finally 10 volunteering students were involved in the study.

Data Collection Instrument and Procedure

Think-aloud protocols were administered using Haldun Taner's (2009: 140-143) story called *Bir Motorda Dort Kisi* [Four People on a Motorboat]. The story is about hypocrisy. It narrates the story of four people who do not know each other and have to take a small motor together since they have missed the last motorboat. Their interior monologues include how they are lost in their own thoughts, how they are afraid of the smoke coming out of the motor, and how they each in turn experience a temporary change in their thought patterns, and finally how they turn back to their inner world soon after the motor begins functioning properly.

Think-aloud sessions were conducted with each of the participants in a silent setting, and their comments were recorded in audio format. The participants were given the text first and were asked to articulate out loud what they thought while reading. After they finished reading, they were asked how they understood the text, what problems they encountered as they read the text and how they handled these problems. The researcher transcribed the audio recordings verbatim.

Data Analysis

The classification developed by Karatay (2009; 2011) was used in the study since it is more comprehensive. Karatay conducted the validity and reliability studies and developed a 32-item classification of the three dimensions with a reliability coefficient of 0.88.

The data obtained from the participants' transcribed statements were analyzed according to the items in this classification. Participants' statements were matched with relevant strategies. In order to test the inter-coder reliability, two researchers coded the transcribed statements. After both coders coded all statements individually, the inter-coder consistency was calculated to be eighty-one percent (10+ 16 = 26, 26*100/ 32= 81%). After some inconsistent coding was negotiated, the consistency was improved to ninety-four percent. The remaining inconsistently coded data (6%) was discarded. Evaluations were performed using only 18 items in the classification. The frequencies of those codes matching with the participants' statements were calculated.

RESULTS

Findings and Comments about Planning Strategies

The names and frequency of codes under the "planning strategies" category are presented in Table 1. According to the first strategy, the reader gets information about the content based on the title and author of the text. For example, after reading the title, one participant stated, "*There is a motor. There are four people. They are likely to be friends, but how can four people get on*

a motor? It might be kind of tractor." (HA3). Concerning the second strategy, the reader makes predictions about the topic of the text. The statement by participant UA3 is an example of this strategy: *"I could not fully figure it out, but they might be friends or just meet there by chance. The text might explain their relationship."* According to the strategy of, *asking yourself questions the answers to which can be found in the text*, the reader creates some interest in the text by creating statements, which encourage reading. Use of this strategy is apparent in the following statement by UA4: *"Why didn't he go to the professor? He might have given up hope from the professor since he saw him in that situation."* In the last strategy of the first category, the reader decides his/her reading speed according to the content of the text. The statement from participant HA2 exemplifies this strategy: *"I tried to pay attention to the way my eyes jumped on the text. Sometimes I keep time myself to speed up my reading."*

Comparing the frequencies of strategy use in Table 1 demonstrates that predicting is the strategy used most often both by high-achieving and underachieving students. Previewing the titles and deciding the reading speed strategies were used less by both groups. The final strategy was used by none of the underachieving and one of the high achieving. Planning strategies were used 113 times in total, 63 times by high-achieving students and 50 times by underachieving students.

Findings and Comments about Monitoring/ Regulation Strategies

The frequencies of using monitoring/regulation strategies are presented in Table 2. The first strategy was about note taking while reading. According to this strategy, the reader takes notes about important information while reading. An example of this strategy is presented by participant HA3: *"Based on the genre of the book I read* […] *for example, if the book is a detective story, first I note down the characters at the beginning of the book or on cards so as not to confuse them later."* Concerning the second strategy, the reader goes back and reads the necessary points again when he/she notices that he/she is distracted. Participant UA5's statement fits this situation: *"I might not go back unless it is necessary or I have to clarify something there. Yet if I realize that I begin to fail to understand the things after, I go back then."* For the third strategy retaining is essential. Accordingly, the

Table 1: Frequency of using planning strategies

Planning strategies	*High achievers (f=5)*	*Under achievers (f=5)*	*Total f*
1.1. Previewing main and sub-titles and the author of the text	2	1	3
1.2. Predicting the topic of the text	52	46	98
1.3. Asking yourself questions the answers to which can be found in the text	8	3	11
1.4. Deciding the reading speed	1	0	1
Total	63	50	113

Table 2: Frequency of using monitoring/regulation strategies

Monitoring/regulation strategies	*High achievers (f=5)*	*Under achievers (f=5)*	*Total f*
2.1. Note-taking while reading	3	0	3
2.2. Getting back on track when concentration is lost	3	1	4
2.3. Underlining or circling important information in text	2	0	2
2.4. Using reference sources like dictionaries for better understanding	5	0	5
2.5. Making use of visuals like graphics, tables and pictures	3	1	4
2.6. Stopping at intervals to think about meaning	27	18	45
2.7. Using contextual clues	51	13	64
2.8. Predicting meaning of unknown words or phrases from the context	7	7	14
Total	101	40	141

reader underlines or circles important information to remember later. An example to this strategy is found in participant HA3's statement: *"If there is an unknown word, I underline it."* According to the strategy of *using reference sources like dictionaries for better understanding*, the reader investigates an unclear point in the text by referring to other references. For example participant HA1 stated, *"If there is a word that I cannot understand, I look up for it in the dictionary or on the Internet."*

With the strategy of *making use of visuals* the reader uses various visuals in the text to understand the text better. In the text used, there were only pictures as visuals. Participant HA5's statement is an example of this strategy, *"There is a boat picture. Most likely, there must be a meeting to have a chat. They go out to the sea. Four people are sitting across from each other."* In the strategy *stopping at intervals to think about meaning*, the reader checks for what he/she has understood. For example, participant HA1 has stopped to assess what he could remember: *"The only thing I can remember here is that they watched the spectacle there, and they liked the spectacle."* According to the strategy of *using contextual clues*, the reader predicts the meaning of the text based on the connections used by the author. Some of the participants were able to make inferences based on the language/accent used in the text. For example, participant UA1's statement implies such a strategy: *"Since the captain speaks with a Black Sea accent, he is probably Laz."* In the last strategy, the reader predicts the meanings of the words using context clues. Participants commonly stressed the word "*cimaci* [hawserman]", which is a sailing term. Participant HA4's statement is an example of this strategy: *"I don't know what the word cimaci in the text means, but most probably it means someone who tries to take water from the sea to extinguish the fire."*

When the frequencies of strategy use in Table 2 are compared, it is seen that the most commonly used strategies are using clues and stopping to think about the meaning. Both groups use the strategy of predicting the meaning of a word equally. None of the underachieving students were found to use such strategies as note taking while reading, underlining important information and using reference books like dictionaries. Monitoring or regulation strategies were used 141 times in total, 101 times by high-achieving students and 40 times by underachieving students.

Findings and Comments about Evaluating Strategies

The frequencies of using evaluation strategies are presented in Table 3. According to the first code, the reader controls the extent to which the initially determined reading purpose is realized. The following statement by participant HA4 is an example of this situation: *"I always thought about other things until I read to the end of the text. I could not understand how it would end up but I saw how the event concluded at the end of the text. I saw it was a natural text."* The strategy of checking the applicability of the idea or information in the text to daily life is about comparing the content with the real situations. For example, participant HA2 made a kind of control about the text using his knowledge about an ordinary professor in the real world in the following statement: *"Others may not be thinking about this, but the professor is more involved in his business. It must be so. Generally professors have to take care of their work more."* In the third strategy, the reader stops reading to sum-

Table 3: Frequency of using evaluation strategies

Evaluation strategies	*High achievers (f=5)*	*Under achievers (f=5)*	*Total f*
3.1. Questioning whether text content corresponds with reading purpose	1	0	1
3.2. Checking the applicability of the idea or information in the text in daily life	36	8	44
3.3. Summarizing the ideas in the text	35	19	54
3.4. Checking whether predictions about the text is correct	10	4	14
3.5. Evaluating the main idea or information by criticizing	2	1	3
3.6. Summarizing the main idea in overall text	5	0	5
Total	89	32	121

marize the ideas in that part of the text. The following statement by participant HA5 can be an example of using this strategy: *"Here the text tells that the butcher cheated customers or overcharged them."*

In the fourth strategy, the reader controls his predictions with newly learned information throughout the text. This strategy is apparent in UA2's statement: *"As I have just mentioned, I assumed these people were friends, but they weren't actually. Four passengers who did not know each other."* The fifth strategy is a higher-order strategy. Here the reader evaluates critically. HA2's statement represents an example thereof: *"I couldn't see much action in the text, but a little hurry. That was fire in the engine. In terms of narration, the description was rather emotional, but there wasn't any emotional event depicted in the text. I thought a romantic relationship might have started between the man and woman there. It was just an early impression, but it didn't happen. They quite normally got flurried and got off."* The last strategy in this category was *summarizing the main idea in the overall text*. The statement by HA5 can be an example of this strategy: *"The woman was waiting for help from the hawserman as the boat was about to sink* […]. *She was hoping for help from him, but she didn't need him anymore as they were about to reach land."*

The frequencies of strategy use are compared in Table 3, demonstrating that the strategies most commonly used by the participants are *summarizing the main idea in the text* and *checking the applicability of the information in the text in daily life*. Underachieving students never used *questioning whether text content corresponds with the reading purpose* and *summarizing the main idea in overall text* strategies. *Questioning whether text content corresponds with the reading purpose, evaluating the main idea in the text critically, summarizing the main idea in the text* strategies were used the least in both groups. Evaluation strategies were used 121 times in total, 89 times by high-achieving and 32 times by underachieving students.

DISCUSSION

In this study, the participants used metacognitive reading strategies falling in three main categories: planning, monitoring/regulation, and evaluating. These categories include 18 strategies in total. Yayli (2010) concludes that freshmen students studying at an English-Language Teaching program used a limited variety of metacognitive strategies (only 5 categories).

It was found that the strategy most frequently used by the participants was monitoring/regulation. It was followed by evaluating and planning strategies, respectively. High-achieving students were also found to use all these three strategies most frequently. Underachieving students, on the other hand, used planning strategies the most. This was followed by monitoring/regulation and evaluating strategies. Hannah and Shore (2008) also reported in their study that 11th and 12th grade students used the monitoring and evaluating strategies mostly while trying to understand the text. Anastasiou and Griva (2009) found that better readers generally had high levels of awareness in all three groups. In Berkowitz's (2004) study, high-achieving students used inference and evaluation strategies more. These students had high percentages of strategy use in terms of recognition and solution strategies under the monitoring category. Unsuccessful students mostly used inference and evaluation strategies. Based on these findings, it can be determined that monitoring/regulation strategies are generally more favored.

While reading the story, high-achieving students used more strategies when compared to underachieving students. Similarly, Anastasiou and Griva (2009) found that better readers used metacognitive strategies more frequently. Denton et al. (2015) revealed that poor comprehenders achieved significantly lower scores than other participants on inference/paraphrasing and monitoring. McGuire and Yewchuk (1996) studied gifted elementary school students and found that these students performed evaluation, interpretation, and regulation processes, yet they were not competent in these strategies. Berkowitz (2004), however, found no significant difference between frequencies of strategy use by high-achieving and underachieving secondary school students.

It was found that the participants most frequently used the *predicting the topic of the text* strategy under the planning category, *using contextual clues* and *stopping at intervals to think about meaning* strategies under the monitoring/regulation category, and *summarizing the ideas in the text* and *checking the applicability of the*

idea or information in the text in daily life strategies under the evaluation category. The least used strategies were the *previewing main and subtitles and the author of the text* and *deciding the reading speed* under the planning category, *note taking while reading, getting back on track when concentration is lost, underlining or circling important information in the text*, *using reference sources like dictionaries for better understanding*, and *making use of visuals like graphics, tables and pictures* strategies under monitoring/regulation category, and *questioning whether text content corresponds with the reading purpose, evaluating the main idea or information by criticizing, summarizing the main idea in overall text* strategies under the evaluating category. Moreover, *deciding the reading speed, note taking while reading, using reference sources like dictionaries for better understanding, questioning whether text content corresponds with the reading purpose* and *summarizing the main idea in overall text* strategies were used by none of the underachieving students.

CONCLUSION

Metacognition is a higher-order thinking skill. The present paper aims at determining how this skill is used during reading. The participants of the study were selected from among prospective Turkish teachers assigned to teach reading. In this study, three main categories and 18 codes were found as a result from the analysis of participants' audio recordings. Based on these finding, the participants' strategy use could be considered to be moderately diversified.

It was found that, the participants used monitoring/regulation strategies as frequently as metacognitive reading strategies. In other words, metacognition strategies are used more frequently during reading. High-achieving students used metacognition strategies more often.

Participants used some of the strategies frequently (such as predicting, using clues, stopping to think about meaning, summarizing and checking), while they did not use others (such as reading speed, underlining important information, note taking, using dictionaries, questioning and summarizing the main idea).

RECOMMENDATIONS

The participants in the present study used more diversified strategies. However, it can be noted that several actions can be taken to develop unused strategies by training them about metacognitive reading strategies. Based on the findings of the present study, it can be suggested that future research should be done to investigate the reasons for the difference between frequencies of strategy use by high-achieving and underachieving students. Future research can investigate why some of the strategies are least used or unused.

As a limitation, the present research was conducted with prospective Turkish language teachers with a story as the text type. Future research can consider types of texts other than a story, if metacognition is to be studied again in terms of reading skills. Future research can study with different age groups. Thus, it can be put forward a general table about metacognitive reading strategies.

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