Metacognitive Awareness of Reading Strategy Use between Field-Dependent and Field-Independent EFL Learners

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Abstract
This paper aimed to study the metacognitive awareness of reading strategies between field-dependent (FD) and field-independent (FI) Turkish EFL university students who are learning English as a foreign language. To this end, 270 students from Istanbul (Cerrahpasa) University were chosen. First, Group Embedded Figure Test was used to appoint the participants into either FD or FI groups. After this, participants' metacognitive awareness of reading strategy was assessed by using MARSI-R (Metacognitive Awareness of reading Strategies Inventory-Revised). Recently revised by Mokhtari et al., the MARSI-R instrument contains 15 items and measures three large sets of strategies including: Global Reading Strategies (GRS), Problem-Solving Strategies (PSS) and Support Reading Strategies (SRS). The results showed that the students reported using the 3 categories of strategies almost at a high-frequency level and they were aware of their metacognitive strategies. And statistically significant difference was found between FI and FD students regarding their use of GRS and SRS, hence, the use of students' metacognitive reading strategies was affected by their different FI/FD cognitive styles.
Keywords: Metacognitive Awareness, Field-dependent, Field-Independent, Reading Strategy, MARSI-R.

Introduction

According to Grabe (1991) reading has considered as an urgent skill and evidently the most basic skill for foreign or second language learners to master in their academic settings and certify their further future progress. Reading can be beheld as a portal for getting, manipulating, and learning upcoming knowledge. Since the nature and purpose of reading is difficult to present, an ultimate definition for reading becomes far reach task. Growing concern as to nonnative English language students' reading ability has provided many researches that show the students seem to have restricted ability to interpret the information through the texts. In some cases, they lack of thinking critically and using context clues to find meaning. Furthermore, strategic awareness and monitoring of the comprehension process are indispensably important dimensions of skilled reading (Pressley & Afflerbach, 1995; Sheorey & Mokhtari, 2001). As Li and Mumby (1996) state, reading can be regarded as a complex and challenging process in which readers actively make use of metacognitive strategies. According to a wide definition, metacognitive theory is a systematic framework which can be used to explain metacognitive knowledge and regulation. Metacognitive knowledge covers "knowledge about oneself as a learner and the factors that might impact performance, knowledge about strategies, and knowledge about when and why to use strategies" (Di Martino, 2019). On the other hand, metacognitive regulation is considered as the monitoring of one's cognition and entails planning activities, awareness of comprehension and task performance, and evaluation of the efficacy of monitoring processes and strategies.

Metacognition is most generally assumed as "cognition about cognition" or simply thinking about thinking (Flavell, 1979), thus the term "metacognitive awareness" encompasses similar notions as "metacognition".

There are different individual variables that may well have a large influx on second/foreign language learning process in general and on second/foreign language reading strategy use in particular.Researchers (e.g., Chapelle & Roberts, 1986; O'Malley & Chamot, 1990; Oxford, 1990a; Reid, 1987; Wenden & Rubin, 1987) have sought to recognize influential learner or reader variables that may boost or prevent the process of second/foreign language learning. These variables include age, gender, level of language proficiency, attitude, motivation, learning styles, and cognitive styles.The field-dependent/independent notion was constructed by Witkin and Asch (Witkin, 1950; Witkin & Asch, 1948a, 1948b) within studies they run concerning how individuals apperceive of themselves in space.

Along with the advent of these two concepts, many researchers focused on how learners process new information and the patterns of strategies they use to comprehend, learn or remember the information through the tetrad skill of a second or foreign languagewhile a group of other researchers have sought to define and articulate the field-dependent/independent construct in terms of its implications for education and instruction by using the afore mentioned foundational studies by Witkins and his colleagues. According to Drnyei, one of the most important constructs of cognitive styles that may well influence second language learning is field-dependence (FD) versus field-independence (FI) cognitive style (2005). Another definition by Jonassen and Grabowski (1993) parse field dependence/independence as the degree to which the neighboring perceptual or contextual field in learners' environments modify their perception or comprehension of information. To aid our realization of the learners' reading problems, it is important to peruse their metacognitive awareness of reading strategies. By doing so, their reading comprehension can improve because we can improve comprehension with increased metacognitive awareness (Zhang, 2008).

Reading

Reading is one of the important skills, by the learners from elementary school up to the university and even out of the education setting, to get a lot of information based on what they are required in reading. Reading is the interplay of four elements including the reader, the text, the fluent reading (the ability of reading in an appropriate rate with adequate comprehension) and strategic reading (the ability of the reader to use a variety of reading strategies to accomplish a purpose for reading). Afflerbach mentioned that reading is a dynamic and assembled process that involves skill, strategies and prior knowledge all together (2007). Brantmeier puts studies accomplished in the field of reading strategies into three categories: (1) identification of reading strategies employed by successful and unsuccessful EFL/ESL learners; (2) reading strategies instruction; and (3) factors affecting the use of reading strategies (2002). Grabe considers L2 reading as a combination of skills and abilities that readers assign to reading (2009). He identifies five abilities by which reading act should be seen as definitional: a rapid and automatic process; an interacting process; a flexible and strategic process; a purposeful process; and a linguistic process (1991). In his third element, reading is a flexible and strategic process, readers assess if they are achieving their purposes of what they are reading. If there is any barrier to hint this, readers must flexibly adapt different processing and monitoring activities. Therefore, it is not surprising to see abundant studies have been carried out in order to consider the differences and similarities in use of reading strategy between more and less effective readers as well as revised instruments for measuringreading strategies (e.g., Flavell, 1979; Oxford, 1990a; Pressley & Afflerbach, 1995; Shang, 2011; Wu, 2005; Mokhtari & Sheorey, 2002; Mokhtari, Dimitrov and Reichard, 2018).

Some investigations revealed that proficient second language readers are aware how to use a variety of strategies to perform their learning goals, in contrast less effective readers use strategies less frequently and they often do not choose proper strategies for the tasks (Shang, 2011). Pressley and Afflerbach (1995), in their study, concluded that proficient readers were more strategic and took

conscious steps to comprehend what they were reading. According to Brown, interactive approach to reading comprehension is required forreaders to master the combination of Bottom-up and Top-down strategies in order to achieve higher degrees of reading comprehension (2000). Furthermore, reading is a kind of process in which not only do readers need to understand its explicit meaning, but also make a sense of its implied ideas.Reading entails a huge amount of cognitive capacity available for comprehension, so as good readers know that comprehension is most likely to occur from reading activity. They know how to convey what is being read to prior knowledge, how to predict what might be coming up in the text and summarize what is being read. These comprehension strategies are what have been named metacognitive concepts in reading which awareness of them determine who is affective reader who is not.

According to Koda (2005), ownership of strategic reading relies on the cognitive as well as metacognitive capabilities of the readers.He states that while professional readers face with comprehension problems, they try to monitor their reading process attentively,they are aware of their cognitive and linguistic resources, and they are capable of propelling their consideration to the proper clues in anticipating, organizing, and retaining text information; it means, they put in use of metacognitive reading strategies.In general, metacognition is the knowledge and control a learner has over his/her own learning process and metacognitive knowledge refers to "knowledge about knowledge" (Grabe, 2009).

Metacognition (Awareness) and Reading

Metacognitive, in general, according to Flavell (1976, p.232) is a sort of knowledge that "one's knowledge concerning one's own cognitive processes and products, or anything related to them". It iswidely believed that "metacognition" composed of fouraspects: (a) metacognitive knowledge, (b) metacognitive experiences, (c) goals, and (d) actions. As mentioned above, metacognitive knowledge refers to a learner's knowledge about his own self or self-knowledge. Metacognitive experiences can be explained as thoughts and feelings that correspond to cognitive tasks. Metacognitive goals are the global and specific objectives of cognitive tasks. And metacognitive actions refer to as the strategies employed to attain those specified goals. In the context of reading comprehension, metacognition certifies that the learners are capable to create meaning from information. They should be able to reflect on their own thinking process, recognize reading strategies while reading and manipulate how they read. It is a part of a learner's cumulative universe knowledge that includes cognitive tasks, goals, actions, and experiences that have to do with the environment.It first and foremost includes knowledge or beliefs about what factors or variables operate and communicate in ways that affect the course and outcome of cognitive enterprises.

Many discourses on metacognition distinguish metacognitive knowledge from the metacognitive control process. The metacognitive knowledge refers to what a learner realizes about cognition, while the metacognitive control process demonstrates how a learner utilizes that knowledge to adjust cognition. Brown (1987) is one of those who made a distinction between the two-basic module of metacognition: the knowledge of cognition and the regulation of cognition. The knowledge of cognition refers to the knowledge about a learner's own cognition or cognition in general. It has three configurations: declarative knowledge, procedural knowledge, and conditional knowledge. Declarative knowledge deals with the factual knowledgeof one's own capabilities and the factors that influence his/her performance. Whereas procedural knowledge refers to theknowledge of executing procedural skills. The conditional knowledge is about discerning the logic to apply various cognitiveactions. The regulation of cognition refers to a collection of activities that provide learners to attain control on their thinking andlearning. Although a number of regulatory skills have been demonstrated in the literature, planning, monitoring, and evaluationare the urgent elements included in all accounts. Planning deals with thinking and organizing appropriate strategies andallocating resources that affect the performance. Monitoring means to be aware of and observe the task and performancetargets. Evaluating is to appraise the

regulatory process and efficiency of a learner's learning ability (Teng, 2016). According to Teng, "Metacognition is supposed to be an innate ability of human beings" (2016, p.301). When students are enabled to develop awareness of metacognition and apply it strategically to control learning, a remarkable alteration in their metacognitive adequacy is observed (Teng, 2016).

Metacognitive awareness could be successfully boosted as showed in the study by Auerbach and Paxton (1997);this is knowledge about the suitable actions one takes in order to achieve a specific purpose.When applied to readingwhich is critical of skilled reading, it can be defined as "the knowledge of the readers' cognition relative to the reading process and the self-control mechanisms they use to monitor and enhance comprehension" (Sheorey & Mokhtari, 2001, p. 432). Pressley and Afflerbach (1995) described impressive readers as strategic or "constructively responsive" readers who intently arrange cognitive resources when reading.Therefore, the reader must apply metacognitive awareness and refer to conscious strategies in order to perceive the text successfully. What distinguishes skilled readers from the nonskilled ones is conscious awareness of the strategic reading process and actual usage of these reading strategies (Sheorey and Mokhtari 2001). Thus, proficient readers are aware of the written works they read, they can realize the reason or reasons for reading it, and lay strategies to cope with problems and monitor their comprehension of information. In contrast, nonskilled readers are restricted with their metacognitive knowledge about reading. They insist on reading as a decoding operation rather than as construction of meaning. A common finding in research into reading strategies is that greater awareness is likely to lead to better reading comprehension, and that less successful readers can expand their reading proficiency by training and scaffolding relying on the strategies that are applied by more successful readers (Mokhtari & Perry, 2008; Mokhtari, Sheorey, & Reichard, 2008). An effective reader is qualified from a metacognitive outlook as someone who modifies the process of reading and the use of strategies according to the textual demands (Pressley & Afflerbach, 1995).

Metacognitive experiences cover all conscious cognitive or affective experiences that go with and relate to any intellectual enterprises. They happen before, during, and after the reading.Garner (1988) designated pre-reading knowledgethat relates to a personal strong point, during-reading information as strategy knowledge and post-reading knowledge as task information.For all of these three experiences, metacognitive knowledge prepares a ground for metacognitive experiences that are expressed as awareness.

In one research that dealt with reading academic materials, Sheorey and Mokhtari (2001) studied the difference in metacognitive awareness of reading strategies between 150 English native and 152 non-native university students in America while reading academic texts.The Survey of Reading Strategies (SORS) (Mokhtari & Sheorey, 2002) was applied by them which was specifically outlined to detect L2 students' metacognitive awareness of reading strategies while reading academic or education setting materials.According to the results obtained, among many others, there was a significant relationship between the students' reading ability and the reported reading strategies, regardless of the level of reading ability.It means both native and non-native students with high reading ability used more strategies than students with low reading ability in the two groups.The result upheld the observation that skilled readers use more strategies than less skilled readers as a result of their high metacognitive awareness of the variety of reading strategies. This trend in L2 reading strategies, determined as "deliberate, conscious procedures used by readers to enhance text comprehension"(Sheorey & Mokhtari, 2001, p.433).

In another research, Mokhtari and Reichard (2002) measuredstudents' level of reading strategies by applying the Metacognitive Awareness of Reading Strategies Inventory (MARSI). It was designed to assess 6th-12th grade students' awareness and perceived use of the reading strategies while reading academic text or school related materials. A total number of 825 students from 10 urban, suburban, and rural school districts in five Midwestern states took part in the study. MARSI included three (strategy) subscales involved for assessment were global

reading strategy, problem solving reading strategy, and support reading strategy. Results showed that there were significant differences in the use of global and problem-solving reading strategies, while there was no significant difference in the use of support reading strategy. Furthermore, the students who rated their reading ability as excellent had a significantly higher use of global reading strategy than readers who rated their reading ability as average. For problem solving reading strategy scores, the result showed that the excellent reading ability readers had a significantly higher use of this strategy than readers who rated their reading ability as average. Also, this study offered that MARSI was reliable and valid for measuring and assessing the learners' metacognitive awareness based on the psychometric data demonstration. It must be noted that the usage of these strategies depends on to some extent the learners' age, reading ability, text difficulty, type of reading materials and other related factors.

Field dependence independence (FD, FI) is a construct imported to second language acquisition from psychology (Ellis, 1995). Christison (2003) distinguishes between cognitive styles as field dependence/field-independence, analytic/global, and reflective/impulsive; sensory styles as visual / auditory and tactile/kinesthetic; and personality styles as tolerance of ambiguity, right-brain/left-brain dominance.

In the field of education, researchers have reasoned that cognitive styles may well have predictive power for academic achievement (Strenberg & Zhang, 2001). Among the above mentioned identified cognitive styles, field-dependence (FD) and field-independence (FI) cognitive style is of great matter in second language acquisition (Larsen-Freeman & Long, 1991). This cognitive style can be measured using a psychological test called Group Embedded Figures Test (GEFT) developed by Witkin, et al, (1971). Fundamentally, this perceptual test weighs an individual's ability to break up an organized visual field so that an embedded part or given shape in that field may be recognized as separate from the given field (Pithers, 2002).

Brown (2000, p.106) defines field-independence style as "the ability to perceive a particular relevant item or factor in the field of distracting items" and field-dependence as "the tendency to be dependent on a total field so that parts embedded within the field are not easily perceived, though the total field is perceived clearly as a unified whole". Felder and Henriques (1995) state that field-independent learners take in information and figure out the material in small, connected chunks, but field-dependent learners absorb information in apparently connected segments and achieve understanding in a holistic way. Before field-dependents can master the details of a subject, they need to realize how the material being presented relates to their prior knowledge and experience. As a result, field-dependent learners may well have slow and inferior performance in their homework and tests since they attempt to grasp the total picture. Contrary to field-dependents, field-independent students can function with incomplete understanding of the material, but they may not attain a grasp of the broad context of a body of knowledge and its relationships with other subjects (Felder & Henriques, 1995).

Purpose of the Study

The purpose is to find out what reading strategies Turkish university preparation FI and FD students deploy to approach EFL reading and whether there is a difference between these two learners in strategy choice. This study puts out three addressed specific questions:

1. Which categories of reading strategies do the Turkish students use most frequently in reading English?
2. Which categories of reading strategies do FD/FI Turkish students use most frequently in reading English?
3. Is there any relationship between Turkish students' usage of metacognitive reading strategies with their FI/FD cognitive styles?

Method
Participants

The study samples consisted of all students studying at English preparation school of Istanbul Cerrahpasa University in the academic year of 2010-2011. Students needed to complete the English preparation school before they could pursue university studies in different majors and

the selected participants for this study were not the beginner level English students.The total number of students comprised to 824 from those 265 were selected for the study. To determine the sample size, the Kerjcie and Morgan table was used. Multistage cluster sampling was conducted to randomly select the sample. Before administering Metacognitive Awareness of reading Strategies Inventory-Revised (MARSI-R) questionnaire, the Field Dependent and Field Independent students were determined and placed in separate groups based on their scores on the Group Embedded Figures Test (GEFT). This test was used by Witkin (1971) to measure the youngsters and adults' field dependence-independence cognitive style.32 students ranged between the score six to thirteen, so they were removed out as they did not belong to the either groups of FD or FI. The other remains were 119 FI and 114 FD. In order to have an equal number and gender of participants in each group, one hundred FD and one hundred FI students in total 200 students have been chosen to participate in the study. Age mean of participants was 22 out ranged from 18 to 25.

Materials

The data for the study was accumulated through a questionnaire adapted from Metacognitive Awareness of reading Strategies Inventory-Revised (MARSI-R) questionnaire by Mokhtari et al,.(2018) that was developed to measure the metacognitive awareness and perceived use of reading strategies of adolescent and adult learners of English as a second language while reading academic related materials. MARSI-R comprises 15 items measuring three broad categories of reading strategies with 5 items for each category:global reading strategies (GRS), problem-solving strategies (PSS), and support reading strategies (SRS). A 5-point Likert scale following each item indicates the frequency of strategy use ranging from 1 (never) to 5 (always).

Table 1: Categorizing of EFL Reading Strategies (Mokhtari et al, 2018)

Strategy Type	Items
Global Reading Strategy (GRS)	1,3,5,12,13
Problem Solving Strategy (PSS)	7,9,11,14,15
Support Reading Strategy (SRS)	2,4,6,8,10

Before analyzing the data, the collected questionnaires were inserted into the SPSS Version 26 software for the internal consistency of the MARSI-R for the study was proven to be acceptable. Cronbach's alpha for the three strategy categories were as follows: GRS (0.78), PSS (0.79), and SRS (0 .72) and the overall reliability coefficient was (0.86)(Glass & Hopkins, 1996).

Procedure

To establish the two equal target groups for this study (FD vs. FI), all students studying at English preparation school of Istanbul Cerrahpasa University in the academic year of 2020-2021 were selected. Whole number of students were 824 from those 265 were selected for the study. To determine the sample size, the Kerjcie and Morgan table was used. Multistage cluster sampling was conducted to randomly select the sample. The Group Embedded Figures Test (GEFT) by Witkin (1971) was used to measure the youngsters and adults' field dependence-independence cognitive style.The GEFT is a paper-based test consisting of seven practice items which should be completed in 1 minute and two other sets consisting of nine items which have the time limit of 5 minutes for each set. During the test, the participants were required to locate 18 simple geometric shapes, each located in a drawing of a larger, more complex pattern geometric shape. Scores on GEFT range from 0 (highly FD) to 18 (highly FI). 32 students ranged between the score six to thirteen, so they were removed out as they did not belong to the either groups of FD or FI. The other remains were 119 FI and 114 FD. In order to have an equal number and gender of participants in each group, one hundred FD and one hundred FI students in total 200 students have been chosen to participate in the study. Age mean of participants was 22 out ranged from 18 to 25.

Then, to enhance the quality of the study, the first Turkish version of the Metacognitive Awareness of reading Strategies Inventory-Revised (MARSI-R) by Mokhtari et al,.(2018) questionnaire be pilot-tested with a group of 15 students from the same population pool. The purpose was to check clarity and comprehensibility of the items as well as the amount of time needed to answer the questions.Finally, the

completed Turkish version of the questionnaire was administered to 200 students in four classes separately in a way that no participant knew about if one is FD or FI.But participants were informed of the purposes and requirements of the survey, and they were asked to provide honest responses. Later, all the completed questionnaires were examined; and 200 valid questionnaires were used for statistical analysis.

Data Analysis

Methodologically, this study is quantitative in nature so that it helps measure the extent of students' awareness of reading strategies through an examination of the frequencies and variances of strategy use. Therefore, the collected data were analyzed quantitatively to obtain descriptive and inferential statistics. The data were subjected to SPSS descriptive analysis to describe the overall metacognitive strategies used by the students in reading for question number one as well as to identify and compare the differences between two field-dependent (FD)and field-independent (FI) groups for questions number two, three and four.Each student's reactance to every single item on the MARSI-R was scored and the average score calculated for each of GRS, PSS, and SRS subscales.

To examine the entire score of metacognitive strategies used by students while reading, descriptive statistics for three categories of strategy usage suggested by Mokhtari et al,. (2018) was adapted. These three categories- global reading strategies (GRS), problem-solving strategies (PSS), and support reading strategies (SRS)- were used to classify the participants MARSI-R results.The table 1 shows the descriptive statistics of student's total scores on metacognitive strategies in reading and the mean scores of each sub-category.

Table 2: Participants' Mean Scores of Metacognitive Strategies in Reading Descriptive Statistics

	N	Mean	Std.Deviation
Total Metacognitive Strategies	**200**	**3.7915**	**.38227**
PSS	200	3.9607	.51952
GRS	200	3.7425	.38944
SRS	200	3.6713	.56086

According to the early findings, the total mean score of students' metacognitive strategies is M=3.79 with 0.38 as standard deviation which means the high amount of strategy usage. On the subject of each three sub-strategy, PSS stands on top of all with M=3.96 and 0.51 as standard deviation which belongs to the highest frequency level. GRS follows it with 3.74 mean score and SD= 0.38. While SRS comes to rank the last place with 3.67 mean score and 0.56 as standard deviation.The results from the total mean score and the mean scores of each sub-strategy demonstrate that the participants fairly used metacognitive strategies frequently in English reading, it means they were highly aware of their usage of metacognitive strategies in academic reading so that they can be considered as high strategy user.

To answer the second research question: Which categories of reading strategies do FD/FI Turkish students use most frequently in reading English? measured by MARSI-R between two groups of student, Independent sample t-test was employed to do this so. According to the findings shown in table 2, the analysis was done to compare the total score of metacognitive strategies of FI and FD participants to discover whether they have a significantly different overall mean score and the mean score of three sub-strategies (PSS, GRS, and SRS).

Table 3: The Total Usage of Metacognitive Reading Strategies for Each Sub-Strategy by FI and FD Participants

Mean Score	FD/FI	N	Mean	Std. Deviation	P-Value	T
Total	FD	100	3.58	0.38	0.452	0.58
	FI	100	3.83	0.47		
PSS	FD	100	3.91	0.49	0.425	0.78
	FI	100	3.98	0.55		
GRS	FD	100	3.72	0.30	0.012*	-2.43
	FI	100	3.57	0.43		
SRS	FD	100	3.46	0.58	0.010*	2.57
	FI	100	3.69	0.51		

As shown in Table 2, by comparing FI and FD participants in terms of their use of metacognitive reading strategies, it is transparent that the mean score of FI participants with mean score 3.83 and standard deviation 0.47 is higher than FD participants with mean score 3.58 and standard deviation 0.38. Generally, this indicates thatthe former participants use metacognitive reading strategies more frequently than the latter.According to Cohen (2014), in the learning process, FI students are inclined to employ more strategies like planning, monitoring the comprehension and critically analyzing the material. Therefore, FI learners may be better at applying metacognitive strategies in reading context.However,

by considering t=0.58 and p>0.05 statistical analysis indicates that there is no significant difference between FI participantswith M=3.83, SD=0.47 and FD ones with M=3.58, SD=0.38 in overall metacognitive reading strategies use.

In terms of the comparison between FI and FD participants in the use of PSS as one sub strategy out of three, FI students gave 3.98 as mean score with SD=0.49 while FD students showed 3.91 for mean score with SD=0.55 condition. Therefore, there is no significant difference between FI and FD with (t=0.78; p>0.05).

Table 4: Problem Solving Strategies (PSS) Used by Both FI and FD Participants

Problem Solving Strategies	FI		FD		P-Value	T
	Mean	SD	Mean	SD		
07. Getting back on track when getting sidetracked or distracted.	3.93	0.93	4.045	0.88	0.48	-0.732
09. Adjusting my reading pace or speed based on what I'm reading.	4.05	0.89	3.95	0.93	0.47	0.73
11. Stopping from time to time to think about what I'm reading.	3.62	0.91	3.58	0.88	0.52	0.63
14. Re-reading to make sure I understand what I'm reading.	4.36	0.66	4.28	0.65	0.42	0.69
15. Guessing the meaning of unknown words or phrases.	3.95	0.89	3.78	0.81	0.17	1.34

As shown in the table 3, it was found that there is no significant difference between each PSS used by both FI and FD participants entirely with P-Value >.05 condition.Although, in both groups of participants it can be seen a bit different frequent use of problem solving strategies. It shows that they don't have problem in solving difficulties directly towards reading text. Among the 5 specific strategies, FI participants reported that they usually re-readand adjust reading speed to solve the reading problems very often, while FD participants reported that they re-read, get back on track when reading problems

occur. "Re-reading to make sure I understand what I'm reading" is the most common strategy item in this sub-strategy plays the important role by both FD/FI participants.

Comparing between FI and FD students in the use of Global Strategies as another sub-strategy of MARSI-R, FI students got 3.57 for mean score with SD=0.43, while FD students got 3.72 for mean score with SD=0.30. This condition means that there is a significant difference between two above mentioned groups with (t=-2.43 and p<0.05).

Table 5: Global Reading Strategy (GRS) Used By Both FI and FD Participants

Problem Solving Strategies	FI		FD		P-Value	T
	Mean	SD	Mean	SD		
01. Having a purpose in mind when I read.	3.68	0.83	3.76	0.76	0.18	-1.31
03. Previewing the text to see what it is about before reading it.	3.53	0.94	3.83	0.80	0.04*	-2.15

05. Checking to see if the content of the text fits my purpose for reading.	3.54	0.61	3.99	0.64	0.000*	-4.16
12. Using typographical aids like bold face and italics to pick out key information.	3.22	0.94	3.40	0.72	0.17	-1.37
13. Critically analyzing and evaluating the information read.	3.67	0.75	3.34	0.73	0.007*	2.71

As shown in the table 4, it was found that there is a significant difference between each GRS used by both FI and FD participants entirely with P-Value p<0.05condition.As it can be seen, FD students used GRS 3"Previewing the text to see what it is about before reading it" more frequently compared to FI participants, therefore the difference is significant (t=-2.15; p<0.05).This indicates that FD participants apt for learning materials related to their background knowledge or they prefer to find some links between their own prior experiences with new information. Thus, when it comes to reading, they like to think about what they have learned before and exploit it in the new learning conditions.Furthermore, GRS 5 "Checking to see if the content of the text fits my purpose for reading" also indicates a significant difference between FI and FD participants (t=-4.16; p<0.05). It means, FD students use more of this strategy than FI ones.The reason may well be FD participants tendency towards thinking globally or they likely read through the text for only general information without considering details in a text. When it comes to absorb information, they can get the main idea easily by ignoring the irrelevant information. However, FI participants would prefer to pay attention to each detail in a text, and they are not very good at choosing important and less important information.Another strategy which is GRS 13 "Critically analyzing and evaluating the information read" shows a significant difference between FD and FI participants(t=2.71; p<0.05), too. In this item, FI students look to be better in critically analyzing and evaluating the reading text, which is in line with their characteristic in learning that is they are better at thinking analytically and evaluating information critically (Witkin et.al, 1971).

All in all, there are significant differences in the usage of 3 out of 5 specific strategies between FI and FD participants. Moreover, the students from both groups indicated their preferences in choosing some particular GRS which match with their characteristics of FI or FD cognitive style.

With respect to SRS almost the same thing happens that FI participants caught 3.69 for mean score with SD=0.51, while FD participantscaught 3.46 for mean score ,with SD=0.58 condition. Therefore, it shows a significant difference with (t=2.57; p<0.05).

Table 6: Support Reading Strategy (SRS) used By Both FI and FD Participants

Global Reading Strategy	FI		FD		P-Value	T
	Mean	SD	Mean	SD		
02. Taking notes while reading.	3.57	0.93	3.37	0.96	0.20	1.28
04. Reading aloud to help me understand what I'm reading.	3.50	1.36	3.49	1.18	0.94	0.06
06. Discussing what I read with others to check my understanding.	**3.60**	**0.09**	**3.12**	**0.11**	**0.002***	**3.21**
08. Underlining or circling important information in the text.	3.86	1.08	3.88	1.09	0.94	-0.07
10. Using reference materials such as dictionaries to support my reading.	3.61	1.14	3.29	1.11	0.08	1.73

The table 5 shows that FI participants give more priority for almost all SRS items including note-taking, reading aloud, underling, and using reference materials except"Discussing what I read…" that

indicates they are less reliant on being provided with a social structure to the subject and are more self-motivated.Among them, SRS 6"Discussing what I read with others to check my understanding" (t=3.21; p<0.05) shows a significant difference between FI and FD participants. The reason may well be that they tend to create their own structure in understanding information, and they are good at reorganizing and restructuring information with another way. Meanwhile, FD participants tend to learn new material in a social way.All results indicated that FI and FD students use to some extent different GRS and SRS in their reading text while the same participants reported the same preference in using PSS.

In order to examine the third question of the study "if there is any relationship between students' usage of metacognitive reading strategies with their FI/FD cognitive styles?" SPSS Chi-square test for independence was applied for comparing the level of metacognitive strategies usage in FI group and FD group of participants.The two independent variables are: 1. the three levels of usage (1=high, 2=moderate, 3=low) of the metacognitive reading strategies and the three sub-strategies, and 2. FI (group 1)/FD (group 2) cognitive styles of the students.

Table 7: Chi-Square Tests for Overall Metacognitive Strategy Usage

Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	38.89a	230.015
Likelihood Ratio	39.76	231.000
Linear-by-Linear Association	.0981	1.000
N of Valid Cases	4652	

a. 0 cells (0%) have expected count less than 5. The minimum expected count is 75.

As seen in Table 6, a Chi-square test of independence was applied for comparing the level of overall usage of metacognitive strategies between FI and FD group of participants. A statistically significant difference was found (x2 =38.89, p=0.01) between FD and FI participants in terms of using overall metacognitive strategies, with FDstudentsusing more metacognitive strategies.

Table 8: Chi-Square Tests for Specific Metacognitive Strategy Usage

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19.35a	170.43	
Likelihood Ratio		20.65170.65	
Linear-by-Linear Association	.098	1	.061
N of Valid Cases	3647		

a. 0 cells (0%) have expected count less than 5. The minimum expected count is 75.

The last table (7) indicates Chi-square test comparing the groups' differences in strategy use with reference to their cognitive styles FD or FI. There is no statistically significant difference between the FD and FI participants in terms of the use of specific metacognitive reading strategies (χ2 = 19.35, p = 0.43), albeit FD participants employed specific metacognitive strategies more frequently than FI participants did.

Discussion

Reading is essential for learners' academic achievement (Koda, 2005), and metacognitive reading strategies have been suggested by many researchers (Brown, 1987; O'Malley & Chamot, 1990) to play a very important role in improving reading comprehension. Therefore, the metacognitive reading strategies used by students were identified in this study and the relationship between FI/FD cognitive styles and metacognitive strategies was examined. Based on the analysis of the data, the discussions of the main findings are provided as follows.

To answer the first research question, the mean score revealed that the overall usage of metacognitive reading strategies by the students is at a high level more than 3.5. According to the established strategy usage criteria introduced by Oxford and Burry-stock (1995), mean score of learning strategies higher than 3.5 refers to the strategy usage stands in the high level. Of the 15 strategies which are listed in MARSI-R, no strategies fell into the low usage level.The results indicated that the participants are

highly aware of their metacognitive strategies in reading comprehension. They are able to make use of these strategies to plan before reading, to monitor while reading and to evaluate after reading. They are conscious of their cognitive process during reading and are able to apply various metacognitive strategies to achieve reading comprehension.These findings were also supported by many other studies (Sheorey and Mokhtari, 2001; Zhang, 2008) which indicated that ESL readers are generally aware of their metacognition and are able to use multitude of reading strategies from moderate to high frequency level to achieve their goals.

In addition, for the three sub-strategies, the participants use Problem-Solving Strategies most frequent, followed by Global Strategies and Support strategies. They reported that all 5 items of Problem-Solving strategies and 3 out of 5 items of Global Strategies and 1 out of 5 Support strategies are frequently used while reading.The results showed that PSS ranked the highest usage among the three sub-strategies, which was in consistent with a previous study done by Mokhtari and Reichard (2002).Sheorey and Mokhtari (2001) also claim that problem-solving strategies are the most popular among non-native readers since these strategies are critical for comprehension and directly work with reading difficulties.Nevertheless, the results revealed that the Support reading strategies are the least frequently used among the three sub-strategies. The reason for the limited use of these strategies might be because of the participants' unwillingness to use these time-consuming strategies.However, previous research such as by Sheorey and Mokhtari (2001) reported that generally ESL learners employ more Support Strategies than native speakers due to the fact that relatively low language proficiency learners tend to rely on dictionaries or other support mechanisms to help them read.

To answer the second research question, the results revealed that FI participants generally use more metacognitive reading strategies than FD participants, but there is no significant difference in the overall use of metacognitive reading strategies between them. This finding was supported by some studies such as by Davis (1987) and Zahra Naimie (2010) which claim that FI students use more

metacognitive strategies than their FD counterparts. The reason is explained by other researches such as Liu and Reed (1994) which demonstrate that FI learners are better at planning their learning process compared to FD learners. In addition, Abraham (1985) concludes in his study that FI students also monitor their own learning process more often and closely than FD students. Finally, FI students seem to display more knowledge and understanding about their own learning process than that of FD students (Tinajero and Parramo, 1998).Therefore, it can be argued that FI students might use more metacognitive strategies than FD students.Although the overall metacognitive reading strategies of FI and FD participants showed no significant difference, the application of two sub-strategies which are SRS and GRS showed the statistically significant differences between them. This indicated that FI and FD students choose different GRS and SRS. However, all these participants reported the same preference in selecting PSS.The possible reasons why FI and FD participants employ different GRS and SRS might be explained by their own characteristics. For the use of GRS, FD participants like to think about their own prior knowledge; they prefer to learn materials relevant to their own experience and like to link their prior knowledge with new information.

The theoretical implication of this study is that: learner differences and cognitive styles should be considered in any comprehensive theory of second or foreign language acquisition and teaching. Although cognitive processes underlying second language acquisition are not easily explored and identified, having a grasp of cognitive styles sheds light on the understanding of the nature of language learning process.The results of the present study have several pedagogical implications for material developers, learners, and teachers in the realm of Teaching English as a Foreign Language (TEFL) in general and teaching language learning strategies in particular.This study used self-report reading strategy questionnaire as a data collection tool; future studies can be conducted utilizing other types of data collection instruments such as diaries, think-aloud protocols, or a combination of them.

Conclusion

As stated above, the present study aimed at investigating the role of field-dependence/independence cognitive style in using general as well as specific cognitive and metacognitive reading strategies by Turkish EFL learners. The results indicated that field dependence/independence cognitive style may play a significant role in the use of general metacognitive and specific cognitive reading strategies by Turkish EFL learners; and FD participants employed these strategies much more frequently than their FI counterparts.Previous researches suggested that it would be helpful that students realize the existence of cognitive style and know their own field dependency and then make good use of it. Students should be aware of their own cognitive style, learn about the features and know the advantages and disadvantages of each style so that they can take advantage of its favorable traits. Then, they may know what reading activities their cognitive style is suitable for and what problems are caused by it. In this way, students can use the advantages of their cognitive style to make better learning progress and select appropriate reading strategies to overcome the difficulties.Additionally, this study would be useful in Turkey as there are very few previous works that look into the relationship between ESL learners' cognitive style and their selection of metacognitive strategies in reading. Thus, it is hoped that this study could help learners and teachers to better understand cognitive styles and how they could affect learning, and also to raise their awareness of the importance of metacognition and use of metacognitive strategies.

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