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A Correlational Study of Cognitive Reading Strategy Instruction and Metacognitive Reading Strategy Awareness

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ABSTRACT: *The present study aims at exploring the correlation between reading strategy instruction and learners' metacognitive awareness of reading strategies. For achieving this end, the paper adopts a correlational-cum-quantitative research paradigm. The research sample consists of 35 ESL learners studying in B.A Honors (English) program in the department of English in a university in Pakistan. Two questionnaires (with 33 items each) using 5-point Likert scale for the participants' responses have been used for data collection. Questionnaire-I has been used to measure the amount of cognitive reading strategy instruction available to the participants; while questionnaire-II has been adopted to assess the level of their metacognitive awareness while reading English texts. The results are obtained by computing descriptive statistics and applying Pearson product moment correlational test on the collected data. The research findings show a strong positive correlation between reading strategy instruction and metacognitive reading strategy awareness. The study implies that the availability of a considerable degree of cognitive reading strategy instruction can be a predictor of a high range of metacognitive awareness which eventually leads to better comprehension of L2 texts.*

Keywords: Cognition, metacognition, reading strategies, reading strategy instruction, metacognitive awareness, reading comprehension

Introduction

In an ESL context, reading is the most important channel that language learners can use. Grabe (1991) ranks reading as the most important skill for second language learners in academic contexts. However, it is a common observation especially in Asian countries that most of the students reach the level of higher education without acquiring sufficient reading skills with the result that they cannot cope up with the reading demands of their academic courses. According to Wyk (2001), this is because of their low level of reading strategy knowledge and awareness. Experts believe that for successful reading, readers must consciously use right strategies at the right time.

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New trends within the domain of reading comprehension have led to an increasing emphasis on the role of awareness of one's cognitive and motivational processes while reading (Mokhtari & Reichard, 2002). Experts believe that awareness and monitoring of one's comprehension processes are important aspects of reading skill. Such awareness and monitoring processes are called metacognition.

Literature Review

Metacognition is formally defined as "regulation of cognitive processes" (Jennifer, 1997, p. 1). The term metacognition was first formally used by Flavell in 1976. He describes the term 'metacognition' as one's knowledge concerning one's own cognitive processes and products or anything related to them. Flavell (1976) proposes that metacognition consists of two basic aspects: monitoring and regulation. In second language learning context, Mokhtari and Reichard (2002, p. 249) define metacognition as "the knowledge of the reader's cognition about reading and the self-control mechanisms he/she exercises when monitoring and regulating text comprehension." Hence, when readers consciously use specific techniques and regulate their cognitive and effective resources to ensure maximum comprehension, they are regarded as metacognitively aware readers (Pressley & Afflerbach, 1995).

Components of Metacognition

Schraw (1998) describes metacognition in terms of its two main components: knowledge of cognition and regulation of cognition. These components can be presented in the form of a chart as given below:

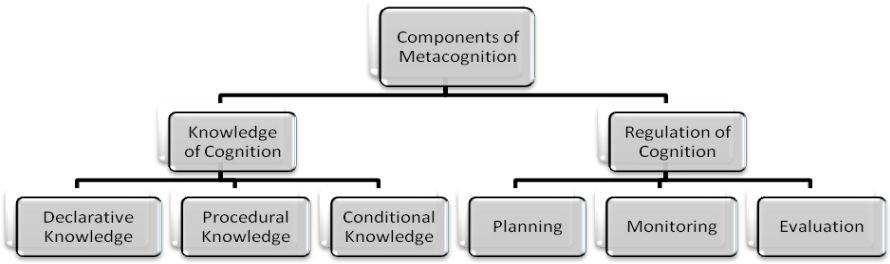

Figure 1. Components of metacognition (Based upon Schraw, 1998)

Knowledge of cognition

Knowledge of cognition, as given by Schraw (1998. p. 114), refers to "what individuals know about their own cognition or about cognition in general". It includes three different kinds of knowledge: declarative knowledge, procedural knowledge, and conditional knowledge. Declarative knowledge is defined as "knowing about things", procedural knowledge is

defined as "how to do things" and conditional knowledge refers to "knowing the 'why' and 'when' aspects of cognition".

Declarative knowledge refers to knowledge about oneself as a learner and about what factors influence one's performance. Procedural knowledge means knowledge about doing things. This knowledge is based upon the awareness of strategies. Individuals with this type of knowledge perform tasks more automatically, are more likely to possess a larger repertoire of strategies, can sequence different strategies, and use them effectively to solve problems. Conditional knowledge refers to the awareness of when and why to use declarative and procedural knowledge (Garner, 1990). For example, effective learners know when and what information to rehearse. Conditional knowledge helps students to select and adjust appropriate resources and strategies according to the changing situational demands of the task (Schraw, 1998).

Regulation of cognition

Schraw (1998, p. 114) defines regulation of cognition as "a set of activities that help students control their learning. Cross and Paris (1988) disclose that instruction on regulatory skills and an understanding of how to use these skills improve students' learning. Research suggests that there are three general regulatory skills: planning, monitoring and evaluation (Jacobs & Paris, 1987).

According to Schraw (1998, p. 115) "Planning involves the selection of appropriate strategies and the allocation of resources that affect performance". Monitoring may be defined as one's awareness of one's comprehension and task performance i.e. "the ability to engage in periodic self-testing while learning" (Schraw, 1998, p. 115). Pressley and Ghatala (1990) point out that monitoring ability develops slowly in learners, and is seen to be quite poor in children and even in adults. Evaluating means the analysis, assessment or judgment of one's final success in learning. To put it in Schraw's (1998, p. 115) words, "evaluating refers to appraising the products and efficiency of one's learning".

Difference between Cognitive and Metacognitive Strategies

One of the important issues often pondered upon in reading strategy research is whether there is any difference between cognitive and metacognitive strategies, and in case this difference exists, how both type of strategies act and play their roles with respect to one another in reading tasks. In this context, it is worth-noticing that Flavell (1979), the founder of the concept of metacognition, himself acknowledges that metacognitive knowledge may not be different from the cognitive knowledge. The distinction actually lies in how the information is used and processed. This

suggests that regulatory skills of metacognition are what basically make metacognitive component distinguished from the cognitive component of learning/reading. It can be assumed that metacognition is one step ahead of cognition, and that metacognitive strategies are the ways and methods to utilize cognitive strategies productively in order to achieve a particular end. In reading context, this end most probably is to understand a text comprehensively. Hence, cognitive strategies are the tools to process a task, while metacognitive strategies are the processing mechanisms. Cognitive strategies help to achieve an end; metacognitive strategies, on the other hand, involve an evaluative thought if the goal has been met.

Phakiti (2006) identified the nature of cognitive and metacognitive reading strategies and their relationship to each other and to L2 reading test performance. He identified three basic cognitive strategies which are memory, comprehension and retrieval, and three metacognitive strategies that include planning, monitoring and evaluation. Having done a factor analysis of all these types of strategies, and their interrelationships, he finally suggested that metacognitive strategies exert an executive role on cognitive strategies which in turn influence success in L2 performance (See figure 2). This indicates that Phakiti (2006) realizes not only a clear cut distinction but also an interrelationship between cognitive and metacognitive strategies.

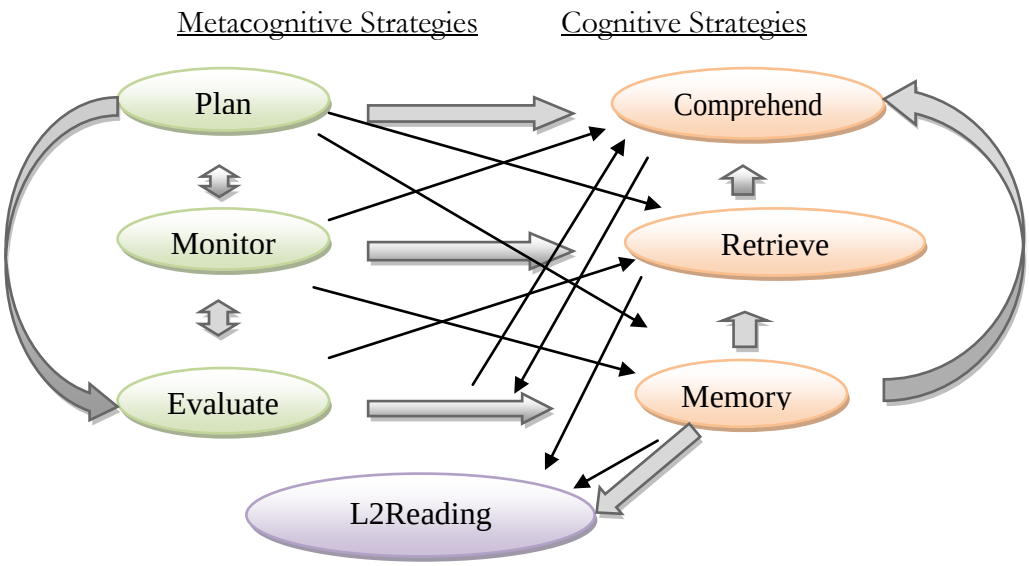

Figure 2. Relationship between cognitive and metacognitive strategies and L2 reading performance adapted from Phakiti (2006, p. 61)

Promoting Metacognitive Awareness through Reading Strategy Instruction

A steady growth of research has been observed in the area of reading strategy instruction and its impact on students' metacognitive reading strategy awareness. Paris and Winograd (1990) say that learners' metacognitive awareness can be promoted by teachers by simply informing students about effective problem-solving strategies and discussing cognitive and motivational characteristics of thinking. They argue that promoting reading awareness among students has twin benefits: firstly, it transfers the responsibility for monitoring learning from teachers to students themselves, and secondly, it promotes positive self-perceptions and motivation among students. In this way, "metacognition provides personal insights into one's own thinking and fosters independent learning" (Paris & Winograd, 1990, p. 15).

Paris and Winograd (1990) and many other researchers claim that students can be taught strategic reading. However, carefully devised instructional techniques are needed to teach students such conscious strategic reading. They use the term 'systematic direct instruction' as an effective tool to enhance students' awareness of their own reading comprehension processes i.e. their metacognitive awareness. However, they suggest that metacognition should not be regarded as an outcome or an end to teaching and learning process. It should rather be considered as a tool which can aid students manage their own learning. Garner (1994) states that reading strategies can and should be learned to the point of automaticity, after which they become skills, and that learners must know not only what strategies to use but also when, where, and how to use them.

In the light of the above mentioned studies, the researchers assume that if learners are instructed about different types of reading strategies, they can be consciously made aware of their reading process. Hence, the researchers planned to conduct the present research which basically aimed to explore the nature of reading strategies instruction and its impact on learners' metacognitive awareness. In this context, the following research questions were formulated:

i. To what extent is cognitive reading strategy instruction being provided to the ESL learners?

ii. What is the level of the ESL learners' metacognitive awareness of reading strategies?

iii. Is there any correlation between cognitive reading strategy instruction and learners' metacognitive awareness of reading strategies?

Research Methodology

Participants

The ESL learners studying in the department of English, The Islamia University of Bahawalpur, Pakistan constituted research population for the present study. The research sample consisted of 35 students studying at various levels of B.A Honors (English) program. The students were selected randomly from 3rd, 5th and 7th semesters. The number of students selected from each semester was 10, 12 and 13 respectively. The collective ratio of male to female students in the sample was 1:2, which is the representative of the actual ratio of male and female students studying in the department of English in B.A (Honors) program. All the students had at least 13 years of formal education in English as a second language.

Data Collection Tools

Two questionnaires were used as data collection tools. The questionnaire-I was designed for the ESL learners in order to know the extent to which reading strategy instruction is used by their teachers while teaching reading skills to them. Considerable help was taken from Rahman (2007) in the construction of the questionnaire. There were 33 items in the questionnaire divided into three sections. The first section was about pre-reading strategy instruction, the second related to while-reading strategy instruction and the last corresponded to post reading strategy instruction.

The questionnaire-II was also meant to be filled in by the same participants. With a view to the basic research objectives, the questionnaire-II was aimed to measure the learners' level of metacognitive awareness of reading strategies. After a great toil of search and study of the previous studies, a standard questionnaire called Metacognitive Awareness of Reading Strategy Inventory (MARSI) was adopted by the researchers for this purpose, and used with some necessary modifications to make it coordinate with the designed research plan. MARSI was initially designed by Mokhtari and Reichard (2002) and later modified by Mokhtari and Sheorey (2002) in the form of SORS, i.e. Survey of Reading Strategies. The instrument intended to assess adolescent and adult learners' awareness and perceived use of reading strategies while reading academic and school related materials such as text books, library books etc. The basic underlying purpose to devise such an instrument was to measure "the degree to which a student is or is not aware of the various processes involved in reading" (Mokhtari & Sheorey, 2002, p. 251). MARSI, originally consisted of 30 items each of which used a 5-point Likert scale ranging from 1 to 5. It was slightly modified by the researchers to be used as a prospective tool in the present research. The modified questionnaire consisted of 33 items. The items were broadly divided into

three general parts or categories by the researchers. Part A was entitled as Planning as it included all those metacognitive strategies which the readers use in order to plan and manage their reading task. It consisted of 10 items, each related with a global reading strategy. Part B aimed to measure strategies related with monitoring and regulating the reading task. This part comprised of 18 items. Part C consisted of the items aimed to judge learners' evaluation of their reading task. It included 4 items.

Data Analysis

Measurement of Cognitive Reading Strategy Instruction

(Research question 1: To what extent is cognitive reading strategy instruction being provided to the ESL learners?)

The level of cognitive reading strategy instruction being provided to the participants was measured through questionnaire-I which consisted of 33 items divided into three parts: pre-reading strategy instruction (6 items), reading strategy instruction (17 items) and post-reading strategy instruction (10 items). The extent of each type of cognitive reading strategy instruction was calculated through descriptive statistics presented in the form of tables. The level of provided instruction was characterized as 'very high', 'high', 'medium', 'low' and 'very low' in accordance with the frequency of participants' answers in response to each question on the 5-point Likert scale (Always, Often, Sometimes, Rarely, Never) given in the questionnaire. A very high level of reading strategy instruction was identified for mean score 4.0 or higher; high level of instruction was regarded for mean score 3.5 or higher but lower than 4.0; medium level of instruction was recognized for mean score 2.5 to 3.4; low level of cognitive strategy instruction was considered for mean score 2.0 to 2.4; and very low instruction was regarded for mean score 1.9 or lower. The key for interpretation is being presented in tabulated form below:

Table 1
Key to Measure the Level of Cognitive Reading Strategy Instruction

Mean Score	Level of Reading Instruction
1.0-1.9	Very low
2.0-2.4	Low
2.5-3.4	Medium
3.5-3.9	High
4.0-5.0	Very high

Measurement of pre-reading cognitive strategy instruction

The first section of the questionnaire-I was meant to measure the level of pre-reading cognitive strategy instruction provided to the participants. The following statistics were computed for this section:

Table 2
Descriptive Statistics for Pre-Reading Strategy Instruction

No.	Item Description	N	Mean	Std. Deviation
1	Dividing reading lesson	35	3.69	1.301
2	Asking warm-up questions before reading	35	4.51	.853
3	Explaining the background of the text	35	4.94	.236
4	Setting a specific purpose for students' reading	35	4.31	.832
5	Predicting text through titles	35	4.71	.519
6	Interpreting graphics, charts, maps and tables	35	4.06	.998
	Total pre-reading cognitive strategy instruction (average)	35	4.37	.548

The mean score for item 1 was 3.69 (high--- M > 3.5) while the mean scores for items 2, 3, 4, 5 and 6 were found to be 4.51, 4.94, 4.31, 4.71 and 4.06 respectively (very high--- M > 4.0 in each case) which shows that the participants' teachers were very much concerned with practicing pre-reading teaching techniques in their language classroom. They frequently ask warm up questions before starting their reading lesson, explain background of the text and set a purpose for students' reading. They also make their students predict titles and interpret graphs, charts, tables and maps. The overall results show that a very high level of pre-reading cognitive strategy instruction (i.e. M= or higher than 4.0) is available to the students of B.A Honors studying in the department of English, The Islamia University of Bahawalpur.

Measurement of reading strategy instruction

The second section of the questionnaire-I comprised of 17 items of while-reading cognitive strategy instruction. The following results were calculated for this section:

Table 3
Descriptive Statistics for Reading Strategy Instruction

No.	Item Description	N	Mean	Std. Deviation
7	Reading a text with a set purpose	35	4.34	.802
8	Using prior knowledge and experience to understand text	35	4.46	.886
9	Making guesses about upcoming information	35	4.17	1.200
10	Self-questioning during reading	35	4.11	.867
11	Guessing the meaning of unfamiliar words	35	4.66	.482

12	Consulting reference materials	35	4.71	.622
13	Inferring the unstated statement of the writer	35	4.00	1.163
14	Visualizing the content of the text	35	4.31	.796
15	Teaching how to use visual organizers	35	4.03	1.382
16	Re-reading text on conflicting information	35	4.66	.482
17	Underlining key-words and phrases	35	4.83	.514
18	Taking important notes while reading	35	4.66	.765
19	Surveying text organization	35	4.00	.804
20	Skimming through a text	35	4.54	.741
21	Scanning a text	35	4.26	.980
22	Reading text intensively	35	4.57	.739
23	Reading text extensively	35	4.09	.951
	Total reading strategy instruction	35	4.38	.383

The above given statistics demonstrate that the ESL learners are exposed to a very high level (M= or higher than 4.00 in case of each variable) of while-reading cognitive strategy instruction. It implies that the teachers almost always instructed their students about reading text with a set purpose in mind (M = 4.34), using prior knowledge and experience to understand text (M = 4.46), making guesses about upcoming information in the text (M = 4.17), self-questioning during reading (M = 4.11), guessing the meaning of unfamiliar words and phrases (M = 4.66), consulting reference materials (M = 4.71), inferring the instated statement of the author (M = 4.00), visualizing the content of the written text (M = 4.31) and using various visual organizers (M = 4.03). Moreover, these teachers very frequently made their students re-read text on conflicting information (M = 4.66), underline key words and phrases (M = 4.83) and take important notes while reading (M = 4.66). They also very often taught their students how to survey text organization (M = 4.00), how to skim through a text (M = 4.54), how to scan a text (M = 4.26), how to read text intensively (M = 4.57) or extensively (M = 4.09). The average mean score for total while-reading cognitive strategy instruction came out to be 4.38, i.e. very high.

Measurement of post-reading strategy instruction

The third section of questionnaire-I aimed to assess post-reading teaching techniques used by ESL teachers of the said population. Table 4 displays the statistics calculated for this section:

Table 4
Descriptive Statistics for Post Reading Cognitive Strategy Instruction

No.	Item Description	N	Mean	Std. Deviation
24	Asking knowledge based questions	35	4.71	.458
25	Asking comprehension check questions	35	4.43	1.008
26	Assigning tasks to apply textual information to different contexts	35	4.29	.957
27	Analyzing the text	35	4.83	.453
28	Analyzing attitude, mood, tone etc. of the author	35	4.77	.731
29	Practicing synthesis skills	35	4.31	.718
30	Evaluating the textual information	35	4.66	.482
31	Answering textually explicit questions	35	4.26	.886
32	Answering textually implicit questions	35	4.26	1.067
33	Answering scriptally implicit questions	35	4.11	1.022
	Total post-reading strategy instruction	35	4.46	.537

The total mean score (4.46) implies that a very high level of post-reading cognitive strategy instruction (M = or > 4.0) is practiced by the participants' teachers in their language classroom. To talk about the individual items, their Mean scores are described here:

For item 24 (Does your teacher teach you Knowledge based question?) the Mean score is 4.71 (very high), for item 25 (Does your teacher ask you comprehension check questions?) the Mean score is 4.43 (very high), for item 26 (Does your teacher assign you tasks to apply textual information to some different given contexts?) the Mean score is 4.29 (very high), for item 27 (Does your teacher teach you how to analyze text?), the Mean score is 4.83 (very high), for item 28 (Does your teacher teach you how to analyze attitude, mood, tone etc. of the author?) the Mean score is 4.77 (very high), for item 29 (Does your teacher help you practice synthesis skills?) the Mean score is 4.31 (very high), for item 30 (Does your teacher encourage you to evaluate textual information?) the Mean score is 4.66 (very high), for items 31 (Does your teacher teach you how to answer textually explicit questions?) and 32 (Does your teacher teach you how to answer textually implicit questions?) both, the Mean score is 4.26 (very high), and for item 33 (Does your teacher teach you how to answer scriptally implicit questions?) the Mean score is 4.11 (very high).

Comparison of the three types of reading instruction

The results obtained through descriptive statistics of questionnaire-I indicate that post-reading strategy instruction (M = 4.46) is more frequently used than any of the other two types of instruction, i.e. pre-reading (M =

4.37) and reading strategy instruction (M = 4.38). This can be shown in the form of a chart given below:

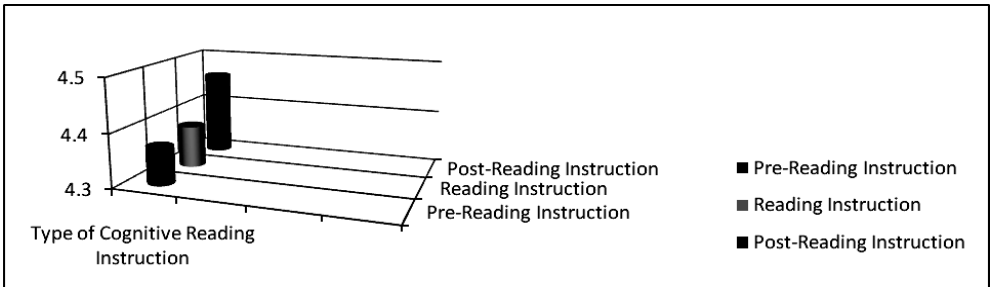

Figure 3. Comparative Scores for Types of Cognitive Reading Strategy Instruction

Finally, scores for overall cognitive reading strategy instruction were calculated which are presented in tabulated form below:

Table 5
Descriptive Statistics for Overall Cognitive Reading Strategy Instruction

Variable Description	N	Mean	Std. Deviation
Total cognitive reading strategy instruction	35	4.4017	.41193

The average mean score (4.40) illustrates that on the whole, a very high level of cognitive reading strategy instruction is being practiced by the teachers in their ESL classroom.

Measurement of Metacognitive Reading Strategy Awareness

(Research question 2: What is the level of ESL learners' metacognitive awareness of reading strategies?)

The answer to the second research question was found through the analysis and interpretation of questionnaire-II. This questionnaire also comprised of 33 items divided into three categories, i.e. Planning, Monitoring and Evaluation each with 10, 18 and 5 items respectively. The results were again calculated through descriptive statistics as was the case with the previous questionnaire. Here again, the metacognitive awareness was categorized as very high, high , medium, low and very low in response to the participants' choices on the 5-point likert scale (Always, Often, Sometimes, Rarely, Never) provided against each variable. A very high level of metacognitive awareness was identified for mean score 4.0 or higher; high level of awareness was regarded for mean score 3.5 or higher but lower than 4.0; medium level of awareness was recognized for mean score 2.5 to 3.4; low level of metacognitive awareness was considered for mean score 2.0 to 2.4; and very low level of awareness was regarded for mean score 1.9 or lower. The key for interpretation is being presented in tabulated form below:

Table 6
Key to Measure the Level of Metacognitive Awareness of Reading Strategies

Mean Score	Level of Metacognitive Awareness
1.0-1.9	Very low (Very poor)
2.0-2.4	Low (Below Average)
2.5-3.4	Medium (Average)
3.5-3.9	High (Good)
4.0-5.0	Very high (Excellent)

Firstly, the Mean scores for three separate categories were calculated to investigate the participants' most or least frequent use of different metacognitive reading strategies, followed by the measurement of the participants' overall metacognitive awareness. The statistic calculations are presented in the form of tables 7-10.

Measurement of awareness in metacognitive planning strategies

The statistics reveal that the participants possess a high level of awareness in planning strategies (M= or > 3.5 but < 4.0) in case of variable 3 (previewing the text), 5 (skimming the text for length and organization), 7 (identifying what to read closely and what to ignore), 8 (using tables, figures and pictures for understanding content) and 10 (using typographical aids for identifying key information) whereas, they possess a very high level of awareness (M = or > 4) for variable 1 (having a purpose in mind to read), 4 (matching the content of the text with the reading purpose), 6 (using prior knowledge for understanding) and 9 (using context clues). Only in variable 2 (deciding a time-limit) they have shown a medium level of awareness (M = 2.86). On the whole, the participants have reported a high level of awareness (M = 3.92) in planning their reading tasks.

The following table exhibits descriptive statistics for the participants' mean scores in planning strategies:

Table 7
Descriptive Statistics for Planning Strategies

No.	Item Description	N	Mean	Std. Deviation
1	Having a purpose in mind	35	4.51	.702
2	Deciding a time-limit	35	2.86	1.192
3	Previewing the text	35	3.97	1.175
4	Matching content with purpose	35	4.11	1.255
5	Skimming for length and organization	35	3.60	1.063
6	Using prior knowledge for understanding	35	4.23	.843
7	Identifying what to read closely or to	35	3.83	1.294

	ignore			
8	Using tables, figures and pictures	35	3.86	1.089
9	Using context clues	35	4.49	.612
10	Using typographical aids	35	3.80	1.052
	Total planning awareness(average)	35	3.92	.404

Measurement of awareness in metacognitive monitoring strategies

After assessing the participants' awareness of planning strategies, their metacognitive awareness in monitoring strategies was investigated through descriptive statistics (See table: 8).

Table 8
Descriptive Statistics for Monitoring Strategies

No.	**Item Description**	**N**	**Mean**	**Std. Deviation**
11	Reading aloud on difficulty	35	3.91	1.292
12	Summarizing to reflect on important information	35	4.34	.873
13	Reading slowly and carefully	35	4.54	.657
14	Getting back on track	35	4.66	.838
15	Underlining or circling information	35	4.54	.852
16	Taking notes while reading	35	4.17	.954
17	Adjusting reading speed accordingly	35	3.57	1.220
18	Using reference materials	35	4.26	.950
19	Paying closer attention on difficulty	35	4.46	.817
20	Stopping time and again to think about text	35	3.77	1.114
21	Paraphrasing ideas for better understanding	35	4.20	1.079
22	Guessing the meaning of unfamiliar words	35	4.43	.884
23	Visualizing information to remember	35	3.94	.938
24	Finding relationships among ideas	35	4.03	.822
25	Checking understanding on conflicting information	35	3.97	1.071
26	Rereading to increase understanding	35	4.74	.561
27	Asking self-questions about text	35	3.60	1.193
28	Checking if the guesses are right or wrong	35	4.26	.886
	Total monitoring awareness (average)	35	4.19	.380

Interpreting the above results, it is inferred that the participants have got a high level of awareness (M = 3.5-3.9) for 6 monitoring variables (i.e. Item 11, 17, 20, 23, 25 and 27 with mean scores 3.91, 3.57, 3.77, 3.94, 3.97 and 3.60 respectively), whereas they possess a very high level of awareness (M = or > 4) for the remaining 12 monitoring variables i.e. item no. 12, 13, 14, 15, 16, 18, 19, 21, 22, 24, 26 and 28 with their Mean scores 4.34, 4.54, 4.66, 4.54, 4.17, 4.26, 4.46, 4.20, 4.43, 4.03, 4.74 and 4.26 respectively. The

average Mean score for the participants' total monitoring awareness is calculated as 4.19 i.e. very high. So, on the whole, the participants have got a very high level of awareness and ability in monitoring their reading tasks.

Measurement of awareness in metacognitive evaluation strategies

The results obtained through statistical analysis of the third section of questionnaire-II, i.e. Evaluation were also not very different than those of the first two sections. The following table supports this conclusion.

Table 9
Descriptive Statistics for Metacognitive Evaluation Strategies

No.	Item Description	N	Mean	Std. Deviation
29	Critically analyzing and evaluating information	35	3.91	.981
30	Discussing with others to check understanding	35	3.91	.981
31	Self-evaluating the overall understanding	35	4.43	.698
32	Checking the perceived goal/purpose	35	4.37	.843
33	Planning to apply textual information to other tasks	35	3.86	.879
	Total evaluative awareness (average)	35	4.10	.560

It becomes clear from the above calculations that the participants, in response to the last five items of questionnaire-I (Evaluation), again reported either high (M = 3.5-3.9) or very high (M = or > 4) level of metacognitive awareness as was the case with Planning and Monitoring strategies. The above given table tells that the mean score is the same i. e. 3.91 (high) for items 29 (critically analyzing and evaluating information) and 30 (discussing with others to check understanding). For item 31 (self-evaluating one's overall understanding) the mean score is 4.43, i.e. very high, for item 32 (checking the perceived goal/purpose) the mean score is again very high, i.e. 4.37, and for item 33 (planning to apply textual information to other tasks) the mean score is 3.86, i.e. high. On the other hand, the mean score for the participants' total evaluative awareness is 4.10, i.e. very high.

Comparative scores for planning, monitoring and evaluation

The following chart shows comparative mean scores for the participants' awareness in planning, monitoring and evaluation strategies represented through comparative height of each bar in relation to one another.

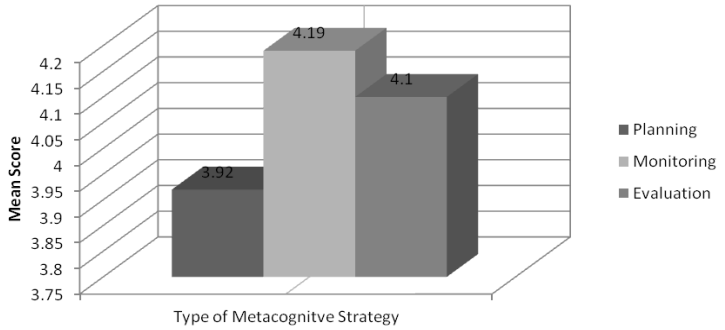

Figure 4. Comparative Scores for Planning, Monitoring and Evaluation Strategies

The above given chart illustrates that the participants' metacognitive awareness is high for all three types of reading strategies (M = 3.5 or higher in case of each category). The level of their awareness for Monitoring strategies is the highest among all three types. Having gone through the analysis of the three categories of metacognitive awareness, the participants' overall metacognitive awareness was measured. It was identified as very high with mean score 4.09 (Excellent).

Table 10
Descriptive Statistics for Overall Metacognitive Awareness of Reading Strategies

Variable Description	N	Mean	Std. Deviation
Total metacognitive strategy awareness (average)	35	4.0952	.31061

Identification of Correlation

Stepwise Pearson Product-moment correlation analyses were performed using Statistical Package for Social Sciences (SPSS version 16). Firstly the correlation between key variables i.e. between reading strategy instruction and metacognitive reading strategy awareness was explored. The results are illustrated in table 11.

Table 11
Results of Pearson Product-Moment Correlation for Reading Instruction and Metacognitive Awareness

		Cognitive Reading Strategy Instruction	Metacognitive Strategy Awareness
Cognitive Reading Strategy Instruction	Pearson Correlation	1	.357*
	Sig. (2-tailed)		.035
	N	35	35
Metacognitive Strategies	Pearson Correlation	.357*	1
	Sig. (2-tailed)	.035	
	N	35	35

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

The data exhibits that a significant positive correlation is present between cognitive reading strategy instruction *(r = .357 & p = .035)* and metacognitive reading strategy awareness. The correlation is found to be significant at the level 0.05. The extent of correlation can be shown through scatter plot given below:

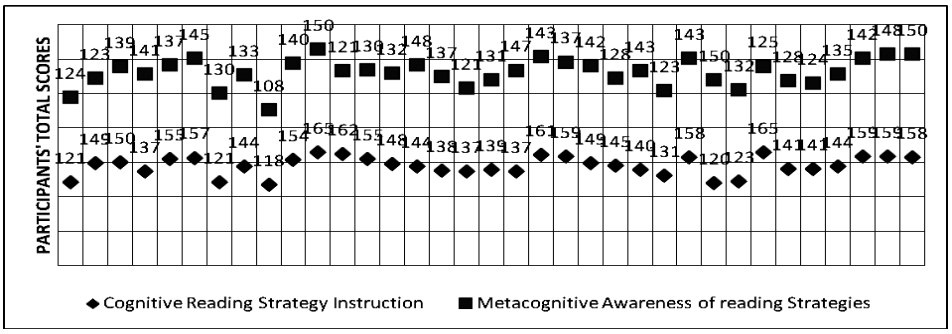

Figure 5. Scatter Plot for Correlation between Cognitive Reading Strategy Instruction and Metacognitive Reading Strategy Awareness

The relative position of scattered points for each variable is the indicator of a strong positive correlation among these variables.

Determination of Correlations among Different Factor Variables

Having explored the correlations among basic/key variables, the researcher conducted zero order correlations for the sub-variables which are the factors of the major or key variables. Cognitive reading instruction has three factor variables: pre-reading instruction, reading instruction and post-reading instruction. The factor variables of metacognitive awareness are planning, monitoring and evaluation strategies. So, the zero order correlations are presented in the form of table.

Table 12

Results of Pearson Product-Moment Correlations for Factor Variables-I (With First Category of Factor Variables of Metacognitive Strategies)

	Variables	1 Pre-reading instruction	2 Reading instruction	3 Post-reading instruction	4 Planning	5 Monitoring strategies	6 Evaluation strategies
1	Pre-Reading Instruction	---					
	Sig. (2-tailed)						
2	Reading Instruction	.652**					
	Sig. (2-tailed)	(.000)	---				

3	Post-Reading Instruction Sig. (2-tailed)	.683** (.000)	.725** (.000)	---			
4	Planning Strategies Sig. (2-tailed)	.122 (.487)	- .099 (.571)	-.176 (.313)	---		
5	Monitoring Strategies Sig. (2-tailed)	.533** (.001)	.232 (.180)	.449** (.007)	.208 (.230)	---	
6	Evaluation Strategies Sig. (2-tailed)	.514** (.002)	.197 (.256)	.495** (.003)	.017 (.922)	.583** (.000)	---

Through the examination of the above table, it is declared that a very strong positive relationship exists between pre-reading and reading instruction (r = .652, p = .000), between pre-reading and post-reading instruction *(*r = .683, p = .000), and between reading and post-reading instruction*(*r = .725, p = .000). pre-reading instruction has also got a very strong positive correlation with metacognitive monitoring strategies (r = .533, p = .001) and metacognitive evaluation strategies (r = .514, p = .002). Almost same is the case with post-reading instruction which has disclosed its strong relationship with monitoring strategies (r = .449, p = .007) and evaluation strategies (r = .495, p = .003). But, it does not show any significant correlation with planning strategies (r = -.176, p = .313). Reading strategy instruction does not show any of its correlations with planning strategies *(*r = -.099, p = .571), Monitoring strategies *(*r = .232, p = .180) and evaluation strategies (r = .197, p = .256). The data further shows that monitoring strategies have got a strong positive correlation with evaluation strategies (r = .583, p = .000). It also becomes obvious from the perusal of the above given table that planning has shown no significant statistical relationship with any of the factor variables involved in this study.

Findings

The L2 learners of English at The Islamia University of Bahawalpur are exposed to a very high level of cognitive reading strategy instruction in their ESL classrooms. Being taught by their teachers, the students are familiar with almost all major types of reading strategies such as setting a purpose for reading, previewing, activating prior knowledge, prediction, vocabulary identification, visualizing, making connections, drawing inferences, self-questioning, skimming, scanning, summarizing, synthesizing and evaluating.

The L2 learners of English department at The Islamia University of Bahawalpur possess a very high level of metacognitive awareness about reading strategies. They adopt different types of planning, monitoring and evaluation strategies very frequently in order to cope up with their academic reading tasks well. This might be the outcome of their good understanding about the use of cognitive reading strategies. This supports Paris and Winograd's (1990) claim that metacognitive awareness can be promoted by teaching students various cognitive strategies. This can further be elaborated in the context of Cross and Paris' (1988) view that regulatory skills can be taught and an ultimate understanding of how to use these strategies improves students' learning. When the results are dissected in terms of Jacob and Paris' (1987) categorization of metacognitive regulatory skills, i.e. planning, monitoring and evaluation strategies, it is found that the frequency of learners' practice of monitoring strategies for reading comprehension is more than that of planning strategies and evaluation strategies, whereas their concern to use planning strategies is the least among all three types.

A significant positive correlation ($r = .357^*$) is found between cognitive reading strategy instruction and metacognitive awareness of reading strategies. It means the greater the extent of reading strategy instruction, the higher the level of learners' metacognitive awareness and vice versa. This eventually confirms Cross and Paris' (1988) as well as Paris and Winograd's (1990) propositions mentioned earlier in this section. However, in the light of the results of present research, some additional facts can be contributed regarding the relationship between the sub-factors of cognitive and metacognitive strategies: (a) pre-reading instruction by teachers has no positive correlation with students' awareness of planning strategies, but it has got a strong positive correlation with students' monitoring and evaluation strategies; (b) reading instruction has got no correlation with planning, monitoring and evaluation strategies; and (c) post-reading instruction has no correlation with students' planning strategies, but it has got a significant positive correlation both with monitoring and evaluation strategies.

Conclusion

The majority of the L2 learners of English department at The Islamia University of Bahawalpur is highly aware of various kinds of metacognitive reading strategies and also adopts these strategies very frequently in academic reading tasks. This might be the consequence of a high level of cognitive reading strategy instruction which is made available to these learners by their teachers. The more the reading strategies are taught, the higher is the awareness of these strategies.

The research has found a strong positive correlation between cognitive reading strategy instruction and metacognitive awareness of reading

strategies. The explored correlation is supportive of Paris and Winograd's (1990) claim that learners' metacognitive awareness can be promoted on the part of the teachers by simply informing students about effective problem-solving strategies and discussing cognitive and motivational characteristics of thinking. This also stands in line with Garner's (1994) propositions about the impact of reading strategies instruction on learners' monitoring and evaluation ability.

The existing correlation is indicative of the fact that teaching reading strategies make students able to consciously plan, monitor and evaluate their reading tasks. The more the students are made to approach things cognitively, the more aware of their learning processes they will be. The more explicitly they are taught various reading strategies, the more consciously they will be able to use these strategies in their reading. Hence, cognitive reading instruction enhances metacognitive awareness. This supports the idea of the naturally existing connection between cognition and metacognition presented by Flavell (1979) and Phakiti (2006).

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