

English Language Learners' Level of Reading Proficiency and their Use of Reading Strategies

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Abstract

The paper reports on a study that investigated undergraduate English language students' use of reading strategies based on their reading proficiency level. The main objectives of the study were to identify any relationship between reading proficiency level and strategy use, and any significant differences among highly proficient, moderately proficient, and low proficient students in their strategy use while reading academic materials. The study also aimed at exploring the most frequently used reading strategies among the learners of these three proficiency levels. The study used a questionnaire survey and employed descriptive statistics and ANOVA tests on the data generated from 145 undergraduate English major students of a public university in Bangladesh. Results revealed that all three groups of participants used cognitive strategies most frequently. ANOVA test results showed a significant difference between highly proficient and low proficient participants in their reported use of several strategies. The highly proficient group scored higher than the other groups, which indicates a possible relationship between learners' level of proficiency and their reading strategy use.

Keywords: Reading strategies, reading proficiency, reading models, Phakiti's taxonomy of reading strategies, EFL/ESL learners

1. Introduction:

Reading is one of the four basic language skills which is important for students of all levels. Students' success in an academic programme often depends on their reading proficiency. At university, students have to read a lot and they use various strategies while reading academic texts. Research shows that learners' language proficiency influences their use of reading strategies. Many studies (e.g. Sheorey & Mokhtari, 2001; Mokhtari & Reichard, 2002; Sheorey, Kamimura & Freiermuth, 2008) report that highly proficient learners are higher-level strategy users than low proficient learners. An efficient reader is aware of various reading strategies which he/she can use effectively at the time of reading a text. On the other hand, a poor reader is not always aware of reading strategies; neither can he/she use them successfully while reading texts. Zhang (2008) points out that readers in an EFL/ESL context should learn how to use reading strategies effectively because successful reading helps them overcome language deficiency and attain better achievement. Therefore, language teachers need to identify the strategies used by proficient learners and any existing differences in students' reading strategy use based on their level of proficiency. Then they can take informed decisions about students' learning needs and modify their teaching accordingly (Cohen, 1998; Macaro, 2001). In addition, weaker students can be encouraged to apply the strategies used by proficient ones.

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Under these circumstances, the present study was undertaken with a view to investigating undergraduate English language students' use of reading strategies in relation to their reading proficiency level. The main objectives of this study were to identify the strategies most frequently used by undergraduate students of three different proficiency levels and to examine any significant differences between their perceived strategy use and their levels of proficiency: high, moderate, and low. To fulfil these objectives, the study addressed the following research questions:

1. What are the most frequently used academic reading strategies among the highly proficient, moderately proficient, and low proficient undergraduate English language students?
2. Are there any significant differences between undergraduate students' level of reading proficiency and their reading strategy use?

This study is significant because in reading strategy research most studies investigated the use of reading strategies between two extreme proficiency levels i.e. high and low in order to identify any significant differences in students' reading strategy use based on their level of proficiency, but the present study included a mid-level of proficiency in addition to high and low. Thus, this study is expected to contribute to a better understanding of students' reading strategy use as the majority of students usually belong to mid-level of proficiency.

2. Literature Review:

In a study on reading strategies, it is important to focus on the reading processes because strategies are used to process information and construct meaning out of a text. There are two common approaches to reading: bottom-up and top-down approaches which are also known as reading models. These two models are based on the information processing theories in psychology which were applied to processing meaning in reading in the early 1970s (Ho, 2007). These two models have "influenced the conceptualization of L2 reading" (Erler & Finkbeiner, 2007, p. 188) and they have a vital place in understanding the nature of reading comprehension (Nunan, 1991). Therefore, EFL/ESL readers need to understand these reading processing models.

2.1 Reading Models

2.1.1 The Bottom-up model

A bottom-up model is a text-based approach in which readers focus on individual components of the text such as, phonemes, morphemes, individual words, and grammatical elements to comprehend the text. The reader processes meaning by deciphering the meaning of each word. The process moves from letters to words to meaning (Nuttall, 2005; Anderson, 1999). Alderson (2000) explained the process in this way, "the reader begins with the printed word, recognizes graphic stimuli, decodes them to sound, recognizes words and decodes meaning" (p. 307).

Readers following the bottom-up model generally use bottom-up strategies, also known as local strategies. In this model, readers try to understand the whole text based on meanings at the word and phrase levels. Though it is a commonly-used approach, the bottom-up model is often criticized because the meaning of a text does not always lie in

the written words only; readers need to bring in their knowledge and experiences when they read and comprehend a text.

2.1.2 The Top-down model

Unlike the bottom-up approach, the top-down approach to reading does not focus on individual elements of the text; rather on the text as a whole. The top-down approach is also known as "a psycholinguistic approach" to reading in which the reader, not the text is at the centre of the reading process (Nunan, 1991, p.65). Readers use their background knowledge, personal experiences, and some macro features of the text such as genre and organization of the text to comprehend the overall meaning of the text. They also bring their expectations, assumptions, and questions to the text while reading. Readers' schemata (intelligence and experiences) help them make predictions and comprehend the text better.

So, in the top-down model, readers reconstruct meaning instead of decoding it as done in the bottom-up model through an interaction with the text based on their existing relevant knowledge and experiences. Readers following the top-down model generally use top-down strategies, also known as global or text level strategies. In this model, readers attempt to understand the overall meaning of the text by using their background knowledge (schemata). The top-down model is also subject to criticism as it sometimes disregards the meanings of individual words. To use the top-down processes correctly readers need to have required knowledge of the language and meaning of words.

2.1.3 Interactive model

Intending to minimize the shortcomings of bottom-up and top-down models, emerged a new model of reading in the early 1980s which was known as 'interactive model' (Erler & Finkbeiner, 2007). The term 'interactive' refers to an interaction between information obtained through bottom-up processing and top-down analysis. This interaction depends on the readers' background knowledge and information processing skills. According to Nuttall (2005), a reader usually uses strategies of both bottom-up and top-down models and shifts from one to another depending on the purposes of reading.

2.2 Reading Strategy Types:

Reading strategies are the various actions and techniques used by a reader in reading and comprehending a text. Reading strategies can be divided in many ways, for example, based on reading models we have bottom-up and top-down strategies and based on three stages of reading pre-reading, and post-reading strategies. Many researchers also attempted to classify reading strategies in their ways, for example, global strategies, problem-solving strategies, and support strategies (Mokhtari & Sheorey, 2002; Mokhtari & Reichard, 2002); cognitive, metacognitive, social and affective strategies (Chamot and O'Malley, 1994). But in this study Phakiti's (2006) taxonomy of reading strategies have been used because these are comprehensive categories of strategies that are related to the reading processes. According to Phakiti's taxonomy, reading strategies are divided into cognitive and metacognitive strategies. Cognitive strategies are sub-categorized into comprehending strategies, memory strategies, and retrieval strategies while metacognitive strategies into planning strategies, monitoring strategies, and evaluating strategies

2.2.1 Cognitive Strategies:

"Cognitive strategies are the actions and procedures readers use while working directly with the text" (Sheorey & Mokhtari, 2001, 436). Rubin (1987) defines cognitive strategies as the steps or operations which readers use directly to process information from a text. As mentioned earlier, cognitive strategies are divided into three types: comprehending strategies, memory strategies, and retrieval strategies.

2.2.1.1. Comprehending strategies

Comprehending strategies are the strategies that learners use to understand a text. These strategies include identifying main ideas and specific information, summarizing main information, guessing the meaning of unknown words and expressions, making inferences, using resource materials, and translating into the native language for better comprehension of the text.

2.2.1.2 Memory strategies

Memory strategies are the strategies that learners use to transform information into a form that can be stored in memory for use. In addition, students use memory strategies to store and retrieve new information (Oxford, 1990). Memory strategies include highlighting or underlining keywords or expressions, taking notes of important information, and making use of typographical features (e.g. boldface, italics, pictures, tables, and figures in the text). Other strategies like rereading, paraphrasing, and loud-reading are also considered as memory strategies.

2.2.1.3 Retrieval strategies

Learners use retrieval strategies for recalling information either from current or long-term memory. Retrieval strategies include using relevant background knowledge and experiences, using the knowledge of language and knowledge of grammar (e.g. structure of words and sentences) to understand meanings. Connecting new information with the previously read text and recalling purposes of reading are also used as retrieval strategies.

2.2.2 Metacognitive Strategies:

Metacognitive strategies are known as higher-level strategies. These strategies are based on the concept of metacognition which is "thinking about thinking" (Phakiti, 2003, p. 29). Metacognition is "a conscious awareness of our thinking and learning process" (Lems, Miller, & Soro, 2010, p. 181). For reading, metacognitive strategies refer to "intentional and carefully planned techniques" that learners use to monitor and manage their reading (Sheorey and Mokhtari, 2001). According to Phakiti (2003), these strategies are used to control the processing of cognitive strategies to get a better understanding of a text. These strategies are used to plan and prepare, monitor and evaluating learners' reading task (Grabe & Stroller, 2002). Accordingly, metacognitive strategies are divided into three types of distinct but interrelated strategies: planning strategies, monitoring strategies, and evaluating strategies.

2.2.2.1 Planning strategies

Planning strategies are the strategies of setting reading goals and making plans for pursuing the goals. Planning strategies involve learners' actions of reviewing the text and the tasks, making a plan of actions on how to complete the text, and do the reading

comprehension tasks. These strategies also include strategies of guessing the text content and using tables, figures, and pictures for better comprehension of the text. Planning strategies are used for reading actions and the attainment of reading goals.

2.2.2.2 Monitoring strategies

Monitoring strategies are learners' deliberate actions for checking their ongoing understanding of the text and performances of the reading comprehension tasks. These strategies include checking whether the learners are using the right strategies and stopping from time to time to reflect on what they are reading. The strategies also involve checking the guesses about word meanings, verifying understanding when readers come across new information, and controlling attention during reading.

2.2.2.3 Evaluating strategies

Evaluating strategies are the strategies for the evaluation of actions and reading performances. The strategies include analysing the text information critically and assessing the difficulty level of the text and the tasks. Evaluating strategies also involve self-questioning strategies while reading and assessing the progress of reading. Evaluating strategies are used to check how well the reader has understood the text and performed reading comprehension activities.

2.3 Studies on the use of Reading Strategies and Learners' Proficiency:

Research on reading strategy use and role of learners' proficiency shows a high correlation between language proficiency and reading strategy use (see Al-Nujaidi, 2003; Hsu, 2007; Kuo, 2003; Sheorey & Mokhtari, 2001; Mokhtari & Sheorey, 2002). Likewise, many studies (e.g. Cheng, 2009; Dhanapala, 2010; Nurazila et al., 2011; Purpura, 1999; Sheorey & Baboczky, 2008; Sheorey, Kamimura & Freiermuth, 2008; Sheorey & Mokhtari, 2001) found proficient readers as having a higher level of awareness and strategy use than the less proficient readers while reading academic materials. According to Kletzien (1991), the frequency of strategy use is generally similar between good and poor readers when they read an easy text, but when the texts become difficult, good readers use a variety of strategies with a higher frequency than the poor readers do. Proficient readers also use their strategies more flexibly and they can adjust their strategies with the genre of texts (O'Malley & Chamot, 1990).

Other studies by Baker and Boonkit (2004); Monos (2005); and Park (2010) also reported significant differences in individual strategy use between highly proficient and low proficient students. These studies reported that low proficient students also used some strategies (e.g. 'translating English into native language'; 'using reference materials, such as a dictionary) significantly more frequently than highly proficient students. But the study by Songsingchai (2010) found significant differences at all levels of strategy use between high and low proficient Thai university students. Among individual strategies, highly proficient students reported using their background knowledge, context clues, or grammatical rules, guessing and predicting meanings more frequently than the low proficient students to comprehend a text.

Most studies investigating reading strategy use based on learners' level of proficiency included only two proficiency levels: high and low. It is important to note that these are two extreme levels and differences between these groups may not be unusual. There is a

mid-level which most students belong to. Although some studies (e.g. Cheng, 2009; Dhanapala, 2010; Monos, 2005) included this mid-level of proficiency, they reported no significant differences between moderately proficient students with either highly or low proficient students. The results indicate that students with closer proficiency level use strategies similarly; proficiency influences reading strategy use when the level of students' proficiency is at two extreme levels. But contrary to these findings, Phakiti's (2003) study reported that highly successful students used significantly higher metacognitive strategies than moderately successful students. Again, moderately successful students reported using significantly higher strategies than the unsuccessful students.

The findings of the above studies show that highly proficient students use reading strategies at a higher level than low proficient students. It does not necessarily mean that highly proficient readers in a foreign/second language are always highly skilled readers. But highly proficient readers are generally more aware of their reading strategies and they can monitor their reading comprehension.

3. Methodology:

3.1 Samples

A convenient sampling method was used to select the participants who comprised 145 (Male= 66, Female= 79) undergraduate English major students of a public university in Bangladesh. They belonged to the same age group ranging from 18 to 22 years. All the participants were the native speakers of Bangla (the national language of Bangladesh) and all were from Bangla medium academic background who had studied English for twelve years at school before entering the university.

As the main purpose of the study was to examine significant differences in reading strategy use and students' level of reading proficiency, the participants were divided into three groups: highly proficient, moderately proficient, and low proficient students, based on their scores obtained in a reading comprehension test. Table 1 presents the distribution of the participants according to their level of reading proficiency and gender.

Table 1: Proficiency Level and Gender Distribution of the Participants (N=145)

Proficiency level	Gender		Total
	Male	Female	
Highly proficient	15	17	32
Moderately proficient	24	26	50
Low proficient	27	36	63
Total	66	79	145

3.2 Instruments

A quantitative method was used in this study. A reading comprehension test and a Likert scale questionnaire were used to collect data.

3.2.1 Reading comprehension test

Reading comprehension tests are used by many researchers (e.g. Alsamadani, 2009; Songsiengchai, 2010; Park, 2010; Shang, 2011; Monos, 2005) to measure students' reading proficiency. In this study, a reading comprehension test was used to determine students' level of reading proficiency and divide them into three proficiency groups: high, moderate and low. The test contained a reading passage followed by 20 multiple-choice questions that were designed to assess students' reading comprehension skills. The questions were based on the reading strategies, such as identifying main ideas, using context clues, guessing meanings, predicting contents, finding specific topics, and summarizing main information. Each multiple-choice item carried 1 point and the participants were divided into three groups: highly proficient, moderately proficient, and low proficient students based on the scores they obtained in the test.

3.2.2 Reading strategy questionnaire

It is a common practice to use questionnaires in reading strategy research (Cheng, 2009). The questionnaire used in this study contained 36 reading strategy items which included cognitive and metacognitive strategies, and their subcategories. The strategy items were adopted from Phakiti's (2006) taxonomy of reading strategies and before using this taxonomy, permission was sought from the author. The questionnaire items were designed on a five-point Likert Scale and the students were asked to indicate the frequency with which they used the reading strategy implied in the statement by using the Likert Scale ranging from *always* to *never* given after each statement. The responses were rated as *always*=5, *usually*=4, *sometimes*=3, *occasionally*=2, and *never*=1.

To ensure the reliability of the questionnaire a pilot study was conducted and internal consistency of the items for the questionnaire and the two scales was tested, which showed Cronbach alpha coefficient of 0.83 for the questionnaire; Cronbach alpha coefficient of 0.72 for the cognitive strategy scale and Cronbach alpha coefficient of 0.79 for the metacognitive strategy scale. We can consider these as good reliability scores because the ideal Cronbach alpha coefficient of a scale is above 0.70 (De Vellis, 2003).

3.3 Methods of Data Collection and Data Analysis

Data were collected using a questionnaire survey. The data generated from the survey were analyzed using the Statistical Package for Social Sciences (SPSS version 16.0). Statistical analyses and interpretations of the data were based on Pallant (2007). Frequencies, means, and standard deviations (descriptive statistics) were calculated for participants' responses of each variable to identify the most frequently used and least frequently used reading strategies among the participants.

The participants were divided into three proficiency groups i.e. high, moderate, and low based on their scores obtained in the reading comprehension test conducted for this purpose. One-way ANOVA (Analysis of variance) tests were executed to identify any significant differences among highly proficient, moderately proficient, and low proficient students in their use of strategies while reading academic materials in English. ANOVA tests were employed at different levels i.e. individual strategy, subcategory, category, and overall use of reading strategies to see whether significant differences existed at all these levels. The level of statistical significance for all ANOVA tests was set at .05 ($p < 0.05$).

To identify the level of reading strategy use of the participants, three levels: high, moderate, and low levels were used based on the means of the participants' response scores for individual reading strategy items. These three levels were suggested by Oxford & Burry-Stock (1995) where the mean score of 3.5 and above are considered as 'high level', mean score from 2.5 to 3.49 'moderate level', whereas a mean score of 2.49 and below is considered as 'low level' of strategy use (Table 2). Mean scores of responses were also used to indicate the frequencies of perceived use of academic reading strategies.

Table 2: Range of Means and Level of Strategy Use

Range of Mean scores	Levels of use
Mean of 3.5 or higher	High
Mean of 2.5 to 3.49	Moderate
Mean of 2.49 or lower	Low

4. Results and Findings:

4.1 Most Frequently used Strategies by High, Moderate and Low Proficiency Students

The results as presented in Table 3 show five reading strategies most frequently used by students of the three proficiency groups separately. The results as shown, of the top five strategies two (items 1 and 7) were commonly used by high, moderate, and low groups with the topmost strategy "using knowledge of English language" (item 7) being the same for all groups. The results in Table 3 also revealed more cognitive strategies occurring in the top five strategies used by each group: four strategies (item 7, 2, 5, 15) for the moderately proficient group while three cognitive strategies for high (item 7, 5, 12) and low (item 7, 22, 15) proficient groups each.

Table 3: Top Five Strategies Used by Students of Different Proficiency Levels (in descending order)

<i>Top five strategies used by highly proficient students</i>				
	M	SD	Type	Level of use
Using knowledge of English language. (item 7)	4.53	.671	Retrieval	High
Guessing the meaning of unknown words or phrases from the context. (item 5)	4.47	.803	Comprehend	High
Using reference materials (e.g. dictionaries). (item 12)	4.47	.879	Comprehend	High
Looking at the title and guessing the text content. (item 1)	4.44	.914	Planning	High
Double-checking understanding of confusing information. (item 18)	4.41	1.09	Monitor	High
<i>Top five strategies used by moderately proficient students</i>				
Using knowledge of English language. (item 7)	4.56	.861	Retrieval	High

Looking at the title and guessing the text content. (item 1)	4.48	.735	Planning	High
Using background knowledge and relevant experiences. (item 2)	4.24	1.08	Retrieval	High
Guessing the meaning of unknown words or phrases from the context. (item 5)	4.16	1.05	Comprehend	High
Highlighting or underlining keywords in the text. (item 15)	4.14	1.12	Memory	High
<i>Top five strategies used by low proficient students</i>				
Using knowledge of English language. (item 7)	4.25	.933	Retrieval	High
Looking at the title and guessing the text content. (item 1)	4.05	1.09	Planning	High
Rereading the text for better understanding. (item 22)	4.02	1.16	Memory	High
Highlighting or underlining keywords in the text. (item 15)	4.0	1.07	Memory	High
Double-checking understanding of confusing information. (item 18)	4.0	1.12	Monitor	High

4.2 Least Frequently used Strategies by High, Moderate and Low Proficiency Students

The results in Table 4 present the five reading strategies least frequently used by the three proficiency groups separately. Of the bottom five strategies, two (items 9 and 19) were commonly used by each group. The results as presented also revealed more metacognitive strategies than cognitive strategies occurring in the bottom five strategies used by each proficiency group. All the least-often used strategies were reported to be employed by students at a moderate level except one strategy “using text features e.g. tables, figures (item 9) which had a low level of use reported by the high proficient group.

Table 4: Bottom Five Strategies Used by Students of Different Proficiency Levels (in ascending order)

<i>Bottom five strategies used by highly proficient students</i>				
	M	SD	Type	Level of use
Using text features (e.g. tables, figures). (item 9)	2.47	1.10	Memory	Low
Reading aloud to help remember information. (item 19)	2.62	1.54	Memory	Moderate
Setting reading goals and purposes for reading. (item 3)	2.84	1.34	Planning	Moderate
Asking oneself questions to be answered in the text. (item 20)	2.91	1.22	Evaluating	Moderate
Checking the genre and organization of the text. (item 10)	2.94	1.41	Planning	Moderate

<i>Bottom five strategies used by moderately proficient students</i>				
Deciding what to read closely and what to ignore. (item 6)	2.86	1.45	Planning	Moderate
Checking the genre and organization of the text. (item 10)	2.92	1.33	Planning	Moderate
Using text features (e.g. tables, figures). (item 9)	3.0	1.40	Memory	Moderate
Reading aloud to help remember information. (item 19)	3.06	1.63	Memory	Moderate
Asking oneself questions to be answered in the text. (item 20)	3.14	1.53	Evaluating	Moderate
<i>Bottom five strategies used by low proficient students</i>				
Setting reading goals and purposes for reading. (item 3)	2.95	1.46	Planning	Moderate
Reading aloud to help remember information. (item 19)	2.98	1.43	Memory	Moderate
Using text features (e.g. tables, figures). (item 9)	3.1	1.26	Memory	Moderate
Deciding what to read closely and what to ignore. (item 6)	3.11	1.43	Planning	Moderate
Checking the genre and organization of the text. (item 10)	3.13	1.27	Planning	Moderate

4.3 Most Frequently used Categories of Strategies Based on Students' Proficiency Level

In order to identify the types of reading strategies most frequently used by the highly, moderately, and low proficient students, descriptive statistics of each category and subcategory of strategies were calculated. Means (M) and standard deviations (SD) are reported in Table 5 below. The results show that all three groups have higher mean scores for cognitive strategies than for metacognitive strategies. This may indicate that students of all proficiency levels use cognitive strategies more frequently than metacognitive strategies while reading academic materials. The results in Table 5 also reveal that both moderately proficient students (M=4.01) and low proficient students (M=3.81) have the highest means for "retrieval strategies" than for other subcategories. It is noted that retrieval strategies come under cognitive strategies. But interestingly the highly proficient group has the highest mean for "monitoring strategies (M=4.09), which is a metacognitive strategy. The results also indicated that the overall mean of the highly proficient group is higher than both moderate and low proficient groups.

Table 5: Descriptive Statistics for Categories of Reading Strategies Based on Proficiency Level

Type of strategies	Highly proficient (N=32)		Moderately proficient (N=50)		Low proficient (N=63)	
	M	SD	M	SD	M	SD
Comprehending strategies	4.02	.513	3.79	.484	3.73	.614
Memory strategies	3.47	.604	3.62	.617	3.58	.604
Retrieval strategies	4.08	.642	4.01	.613	3.81	.654
Planning strategies	3.43	.708	3.43	.796	3.46	.702
Monitoring strategies	4.09	.629	3.77	.732	3.79	.646
Evaluating strategies	3.43	.687	3.49	.797	3.44	.899
Cognitive strategies	3.86	.364	3.80	.432	3.70	.512
Metacognitive strategies	3.65	.560	3.56	.629	3.57	.607
Overall strategies	3.75	.418	3.68	.491	3.63	.500

4.4 Differences in Strategy use Based on Participants' Level of Proficiency:

To identify significant differences among highly, moderately, and low proficient students in their reading strategy use, one-way ANOVA tests were calculated for each category and individual reading strategy item.

Homogeneity of variances was checked through Levene's test for homogeneity of variances which "tests whether the variance in scores is the same for each of the three groups" (Pallant, 2007, p. 246). The results of Levene's test for homogeneity of variances as in Table 6 showed that the significance values (Sig.) for Levene's test for all subcategories, categories, and overall strategies were greater than .05. The results indicated that the researcher had not violated the homogeneity of variance assumption in this study.

Table 6: Test of Homogeneity of Variances

Reading strategies	Levene's Statistic	df1	df2	Sig.
Comprehending strategies	1.750	2	142	.177
Memory strategies	.025	2	142	.976
Retrieval strategies	.416	2	142	.661
Planning strategies	.540	2	142	.584
Monitoring strategies	1.325	2	142	.269
Evaluating strategies	2.499	2	142	.086
Cognitive strategies	2.045	2	142	.133
Metacognitive strategies	.498	2	142	.609
Overall strategies	.695	2	142	.501

The one-way ANOVA results as in Table 7 showed that the significance value (**Sig.**) of only one subcategory of reading strategies (“comprehending strategies”) was equal to p -value (.05). All other Sig. values were greater than .05. Therefore, the results showed that the values of other types and overall strategies were not statistically significant except for the Sig. value of comprehending strategies for the three proficiency groups: $F(2, 142) = 3.06, p = .05$. This indicated a significant difference in the mean scores of comprehending strategies for the three proficiency groups. To identify which group was different from which other groups Post Hoc comparisons using Tukey HSD tests were calculated. The results as in Table 8 indicated that the mean difference between high and low proficient groups was statistically significant. The mean score of the highly proficient group ($M = 4.02, SD = .513$, as shown in Table 6) was significantly higher than the low proficient group ($M = 3.73, SD = .614$). Moderately proficient group ($M = 3.79, SD = .484$) did not differ significantly from either highly proficient or low proficient group. Therefore, the results indicated that the highly proficient students used comprehending reading strategies significantly more frequently than low proficient students.

Table 7: ANOVA Results of the Categories of Reading Strategies

Reading strategies		Sum of Squares	df	Mean Square	<i>F</i>	Sig.
Comprehending strategies	Between groups	1.857	2	.928	3.06	.05*
	Within groups					
	Total	43.079	142	.303		
		44.935	144			
Memory strategies	Between groups	.446	2	.223	.601	.55
	Within groups					
	Total	52.655	142	.371		
		53.101	144			
Retrieval strategies	Between groups	1.976	2	.988	2.428	.09
	Within groups					
	Total	57.778	142	.407		
		59.753	144			
Planning strategies	Between groups				.041	.95
	Within groups	.045	2	.023		
	Total	77.260	142	.544		
		77.305	144			
Monitoring strategies	Between groups	2.355	2	1.178	2.593	.07
	Within groups					
	Total	64.492	142	.454		
		66.848	144			

Reading strategies		Sum of Squares	df	Mean Square	<i>F</i>	Sig.
Evaluating strategies	Between groups	.092	2	.046	.068	.93
	Within groups					
	Total	95.981	142	.676		
		96.073	144			
Cognitive strategies	Between groups	.576	2	.288	1.38	.254
	Within groups					
	Total	29.566	142	.208	2	
		30.142	144			
Metacognitive strategies	Between groups	.175	2	.088	.239	.788
	Within groups					
	Total	52.056	142	.367		
		52.232	144			
Overall strategies	Between groups	.295	2	.147	.638	.530
	Within groups					
	Total	32.804	142	.231		
		33.099	144			

* The mean difference is significant at the 0.05 level

Table 8: Post Hoc Tests (Tukey HSD) for Comprehending Reading Strategies

Dependent variable	(I) Proficiency of students	(J) Proficiency of students	Mean difference (I-J)	Std. Error	Sig.
Comprehending strategies	Highly proficient	Moderately proficient	.23089	.12469	.157
		Low proficient	.29216 *	.11957	.041
	Moderately proficient	High proficient	-.23089	.12469	.157
		Low proficient	.06127	.10432	.827
	Low Proficient	High proficient	-.29216*	.11957	.041
		Moderately proficient	-.06127	.10432	.827

*. The mean difference is significant at the 0.05 level.

One-way ANOVA tests were also done to see significant differences among the three proficiency groups in their use of individual reading strategies. The results in Table 9 showed significant differences at the $p < .05$ level in the use of five individual reading strategies for the three proficiency groups: for Item 1: $F(2, 142) = 3.45, p = .03$; for Item 5: $F(2, 142) = 3.60, p = .03$; for Item 12: $F(2, 142) = 3.46, p = .03$; for Item 27: $F(2, 142) = 3.18, p = .04$; and for Item 33: $F(2, 142) = 3.22, p = .04$.

Table 9: ANOVA Results of Individual Strategy use by Students' Proficiency Level

Reading strategies	High (N=32)		Moderate (N=50)		Low (N=63)		F	Sig.
	M	SD	M	SD	M	SD		
Looking at the title and guessing the text content. (item 1)	4.44	.914	4.48	.735	4.05	1.09	3.45	.03*
Guessing the meaning of unknown words from the context. (Item 5)	4.47	.803	4.16	1.05	3.83	1.31	3.60	.03*
Using reference materials (e.g. dictionaries). (Item 12)	4.47	.879	4.00	1.16	3.83	1.21	3.46	.03*
Evaluating text difficulty and adjusting reading speed accordingly. (Item 27)	4.06	1.01	3.54	1.31	3.38	1.31	3.18	.04*
Looking back and forth in the text to find relationships among ideas. (Item 33)	4.25	1.01	3.88	1.17	3.63	1.12	3.22	.04*

*. The mean difference is significant at the 0.05 level.

In order to identify which proficiency group differed significantly from which other groups in using the five individual strategies (see Table 9 above) with statistically significant values, Post Hoc comparisons using Tukey HSD tests were done for these items only. The results as in Table 10 indicated that in four out of five strategies, the mean differences between high and low proficient groups were statistically significant. The mean scores (as shown in Table 9 above) of the highly proficient group were significantly higher than that of a low proficient group in these strategies. While in item 1 the mean difference between moderately proficient and low proficient groups was statistically significant with the former scoring significantly higher than the later.

Table 10: Post Hoc Tests (Tukey HSD) for Individual Strategies with Significant Values

Dependent variable	(I) Proficiency of students	(J) Proficiency of students	Mean difference (I-J)	Std. Error	Sig.
Guessing the text content (item 1)	Highly proficient	Mod proficient	-.043	.214	.979
		Low proficient	.390	.205	.143
	Moderately proficient	High proficient	.043	.214	.979
		Low proficient	.432 *	.179	.045
	Low Proficient	High proficient	-.390	.205	.143
		Mod proficient	-.432*	.179	.045

Dependent variable	(I) Proficiency of students	(J) Proficiency of students	Mean difference (I-J)	Std. Error	Sig.
Guessing the meaning of unknown words (item 5)	Highly proficient	Mod proficient	.309	.452	.256
		Low proficient	.643*	.246	.026
	Moderately proficient	High proficient	-.309	.256	.452
		Low proficient	.335	.214	.266
	Low Proficient	High proficient	.643*	.246	.026
		Mod proficient	-.335	.214	.266
Using reference materials (item 12)	Highly proficient	Mod proficient	.469	.256	.162
		Low proficient	.643*	.245	.026
	Moderate proficient	High proficient	-.469	.256	.162
		Low proficient	.175	.214	.693
	Low Proficient	High proficient	-.643 *	.245	.026
		Mod proficient	-.175	.214	.693
Evaluating text difficulty and adjusting reading speed (item 27)	Highly proficient	Mod proficient	.522	.284	.160
		Low proficient	.682 *	.272	.036
	Moderate proficient	High proficient	-.522	.284	.160
		Low proficient	.159	.237	.781
	Low Proficient	High proficient	-.682 *	.272	.036
		Mod proficient	-.159	.237	.781
Looking back and forth in the text (item 33)	Highly proficient	Mod proficient	.370	.253	.313
		Low proficient	.615*	.243	.033
	Moderate proficient	High proficient	.370	.253	.313
		Low proficient	.245	.212	.481
	Low Proficient	High proficient	.615*	.243	.033
		Mode proficient	.245	.212	.481

* The mean difference is significant at the 0.05 level

5. Discussion on the Findings:

The descriptive statistics results (see Table 3) showed that more retrieval, comprehending, and memory strategies occurred in top five strategies. These are the categories of cognitive strategies. Therefore, the finding indicates that all three groups (highly, moderately and low proficient) of students used cognitive strategies more frequently than metacognitive strategies in reading academic materials. This finding is consistent with that of Cheng's (2009) study which shows Taiwanese EFL students' more frequent use of cognitive strategies than metacognitive strategies in academic reading.

Descriptive statistics results (see Table 4) also revealed that more planning and evaluating strategies occurred in the bottom five strategies. As planning and evaluating strategies belong to metacognitive categories, the findings indicated that all three groups of participants reportedly used metacognitive strategies least frequently than cognitive strategies. This finding is consistent with the results presented in Table 3, which showed cognitive strategies were used most frequently although the findings contradict that of Shang (2011) who reported that EFL English major students used metacognitive strategies more frequently than cognitive strategies.

Regarding differences in reading strategy use across learners' proficiency levels, ANOVA results showed a significant difference among the highly, moderately and low proficient students in the use of one type of strategies (comprehending strategies) in which high and low proficient groups significantly differed from each other with the former scoring higher than the later. The finding is supported by many studies (e.g. Purpurra, 1999; Sheorey & Mokhtari, 2001; Sheorey & Baboczky, 2008; Sheorey, Kamimura & Freiermuth, 2008; Monos, 2005; Cheng, 2009; Dhanapala, 2010; Nurazila et al., 2011) which also reported significant differences between high and low proficient students. Though significant differences were not found in overall and other types of strategy use, the highly proficient students scored higher than both moderately proficient and low proficient students. From this finding, we can consider the highly proficient students as higher-level strategy users than the students of other proficiency levels.

The results in individual strategy use showed significant differences between high and low proficient groups concerning four strategies (guessing the word meanings of the unknown word; using reference materials; evaluating difficulty level of text; identifying relationships among ideas in the text). The high proficiency group used these strategies significantly more often than the low proficiency group. The findings are supported by other studies (e.g. Baker & Boonkit, 2004; Monos, 2005; Songsiengchai, 2010; Park, 2010) which reported that the highly proficient students employed some strategies including 'guessing the word meanings', 'using reference materials', and 'using background knowledge' significantly more frequently than low proficient students.

Most studies investigating reading strategies based on students' proficiency examined the differences between two extreme levels: high and low. A few studies (e.g. Monos, 2005; Cheng, 2009; Dhanapala, 2010) included a mid-level of proficiency and reported no significant differences between moderately proficient groups and other groups. The finding of the present study is consistent with these studies although it contradicts the study of Phakiti (2003) who reported a significant difference between highly and moderately successful students' use of metacognitive strategies. The results indicated that students with closer proficiency levels generally use strategies similarly while students with two extreme levels i.e. 'high' and 'low' may use strategies differently.

Although the highly proficient students are found to use reading strategies more frequently than the low proficient students, it does not necessarily mean that highly proficient students are always highly efficient and skilled readers. The use of reading strategies sometimes depends on many factors including the difficulty level of the text, learners' background knowledge, topics, etc. In reading an easy text, the frequency of strategy use may be similar for good and bad readers (Kletzien, 1991). But in general,

highly proficient readers are aware of the reading strategies which they can use more effectively and appropriately than the readers of other proficiency levels even though the frequencies of strategy use may be the same among them.

6. Conclusion and Implications

This study aimed at investigating undergraduate English language learners' use of academic reading strategies based on their level of reading proficiency in English. The main purposes of this study were to investigate the most frequently used reading strategies by highly, moderately and low proficient students, and to examine any significant differences among these three groups of students in their use of reading strategies.

The major findings of the study show that the participants, regardless of their level of proficiency, used cognitive strategies more frequently than metacognitive strategies. Regarding differences between reading strategy use and students' level of language proficiency, no significant differences were reported in the overall use of strategies among highly, moderately, and low proficient students. Nevertheless, significant differences were found between high and low proficient groups concerning one category of strategies (comprehending strategy) and four individual strategies: guessing the word meanings of unknown words; using reference materials; evaluating difficulty level of text; and identifying relationships among ideas in the text. The highly proficient group used these strategies significantly more frequently than the low proficient group. It is important to note that although significant differences were not found in the case of other categories and individual strategies, the highly proficient group scored higher than both moderately proficient and low proficient groups in all cases.

The findings of the study have important pedagogical implications. The findings can help teachers make informed decisions in their reading classes. As the results in the study show that the participants used metacognitive strategies least frequently, teachers can make students aware of these strategies, such as setting reading goals, deciding what to read and what to ignore while reading. In a language teaching programme, the ultimate goal is to develop learners as independent users of that language. Similarly, in a reading class, the main purpose is to develop students as independent and effective readers who can undertake their own responsibility as a reader. To achieve these goals, metacognitive strategies can play an important role. Therefore, this study, in line with other studies (e.g. Mokhtari and Sheorey, 2002; Cohen, 2000; Nunan 1999; Drucker, 2003), recommends reading strategy instruction to be implemented in English language classes. If the teacher can make students aware of the strategies, they can use them effectively, and thus they may develop as competent readers.

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