Relation between Reading Performance and Metacognitive Awareness and Strategy Use of University Level ESL Students of Pakistan

Bushra Ahmed Khurram

Abstract

This paper reports on an investigation into the relationship between the reading performance and metacognitive awareness and strategy use of university level ESL students. The participants comprised of 32 students studying a Compulsory English Course at a public sector university of Pakistan. A self-report measure was administered to assess students' metacognitive awareness and strategy use, and performance data was obtained from an academic reading test. The study employed correlation design. The results were obtained by employing Pearson product-moment correlation coefficient on the data. Results of the study revealed that there is no positive correlation between university level ESL Pakistani students' English reading performance and their metacognitive reading awareness and strategy use. The implications of the study for teaching and researching are discussed.

Keywords*:* Reading performance, Metacognitive awareness, Strategy use, English as a Second Language (ESL)

1. Introduction

Recent decades have seen extensive research on reading (Baker and Beall, 2009). The growing attention of research into different aspects of reading seems warranted since in the current knowledge-based world reading is regarded as critical to academic, economic and social success (Van den Broek et al., 2007). Reading effectively for students is particularly important because 'so much of information that students need is in the multiple texts they read' (Sheorey and Mokhtari, 2008:1). To help students become an efficient and autonomous reader, research suggests that learners should be taught reading strategies as 'less competent readers are able to improve through training in strategies' (Carrell, 1989: 648). In addition, research stresses the importance of metacognitive awareness of reading strategies as it is well-established that metacognition plays a critical role in skilled reading (Griffith and Ruan, 2005). In fact, research shows that metacognitive skills are the key factor that differentiates between skilled and unskilled readers (Mokhtari and Reichard, 2002).

2.Literature Review

2.1 Metacognition: A Brief Background

The concept of metacognition gained prominence in the 1970's with John Flavell. He coined the term 'metacognition' in 1976 after studying the work of Jean Piaget, a stage theorist in cognitive development, for years (Pintrich, 2002). Baker and Beall (2009) indicate that the theorists whose contributions are significant in the development of theory of metacognition are: Jean Piaget and Lev Vygotsky. Piaget (1926) provided early evidence of the poor comprehension monitoring skills of young children while listening (Baker and Beall, 2009). He also emphasized the active role of a child in constructing understandings. His theory, referred to as 'cognitive constructivism' (Schcolnik et al, 2006), proposes that the human mind actively constructs knowledge and

understanding, from birth to adulthood (Wadsworth, 1971). According to Baker and Beall (2009), constructivism forms the 'underlying premise in the study of metacognition' (p.378). On the other hand, Vygotsky's (1978) social development theory, also called 'social constructivism' (Schcolnik et al, 2006), is at the heart of many conceptualizations of metacognition development (Baker and Beall, 2009). Vygotsky's (1978) theory proposes that human beings learn how to engage in cognitive tasks through social interaction with more knowledgeable others (Baker, 2008). Vygotsky's theory influenced many theorists who propose that the origin of metacognitive skills lie in the expert-novice interactions (Rogoff, 1990).

Historically speaking, metacognition was neglected as a valid object for scientific inquiry for a long time due to the early pre-eminence of behaviorism (Afflerbach, 2002) as well as due to the disappointment that accompanied the use of introspection for scientific purposes (Yzerbyt et al, 1998). Pioneering research on metacognition per se only occurred in the 1970s in developmental psychology (Hacker et al, 1998). And only in the 1990s did interest increase in how people monitor their ongoing learning, which focused on the research on judgments of learning (Hacker et al, 1998). Today, the concept of metacognition is used in mathematics (Carr, Alexander and Folds-Bannett, 1994), motivation research and clinical psychology (Schneider, 2008), and cognitive neuroscience (Shimamura, 2000). However, it is noteworthy that the concept of metacognition is considered unique within developmental psychology since research in this 'field has been strongly related throughout to educational contexts and concerns' (Whitebread, 2011).

2.2 Definition of metacognition

Metacognition has been defined by a number of theorists. In his influential work, Flavell (1976: 232) has defined metacognition as 'knowledge concerning one's own cognitive processes and products or anything related to them' as well as 'active and consequent regulation and orchestration of the processes'. Brown (1978) presents a briefer definition of metacognition by emphasizing its knowledge aspect by stating that it is 'knowing about knowing' and 'knowing how to know.' Martinez (2006), on the other hand, has defined metacognition by emphasizing the regulative aspect of metacognition and stated that it is the 'monitoring and control of thought.' Tei and Stewart (1985), like Flavell (1976), have cast the net wider by defining metacognition more comprehensively as 'having knowledge (cognition) and having understanding, control over, and appropriate use of that knowledge' (p.47). In sum, the consensus view is that that metacognition refers to both conscious knowledge and the regulation of cognitive processes (e.g., Baker and Brown, 1984; Brown and Smiley, 1978; Dinsmore, Alexander, and Loughlin, 2008; Flavell, 1976; Schunk, 2008).

The concept of metacognition is regarded as a conceptually significant phenomenon in cognitive psychology and educational research (Baker and Brown, 1984, Brown, 1978, 1987; Efklides, 2008). However, due to its elusive nature, it has been criticised for being somewhat 'fuzzy' (Flavell, 1981: 37) and 'problematic since its inception' (Brown, 1987: 66). In my opinion this elusiveness is not exclusive to the construct of metacognition. Rather, it is to be expected in any area of study that attempts to explore unobservable cognitive processes.

2.3 Metacognition as applied to reading

The concept of metacognition has been applied to reading by a number of researchers. The literature indicates that Flavell's two-component conceptualization of metacognition has been

widely used in reading (Baker and Beall, 2009). Mokhtari and Reichard (2002: 249), for instance, have defined metacognition in reading as 'the knowledge of the readers' cognition about reading and the self-control mechanisms they exercise when monitoring and regulating text comprehension'. Similarly, Baker and Brown (1984: 353) have defined metacognition in reading as consisting of two interrelated clusters of information, namely 'knowledge about cognition' and 'regulation of cognition'. According to Baker and Brown (1984) knowledge of cognition in reading includes the reader's knowledge about his or her cognitive resources and the compatibility between the reader and the reading situation. Related to this is the reader's conceptualization of the reading process: how the reader conceptualizes what he/she is doing in reading. The regulation of cognition, in reading includes the awareness of and ability to detect contradictions in a text, knowledge of different strategies to use with different text types, and the ability to separate important from unimportant information (ibid).

2.4 Research on metacognition in reading

Research germane to the topic of metacognitive processes in reading comprehension predates the coining of the term 'metacognition' by more than three quarters of a century (Baker and Beall, 2009: 373). This can be seen in the work of researchers like Dewey (1910), Huey (1908/1968) and Thorndike (1917), who all have mentioned in their work that reading involves planning, monitoring and evaluating activities (Baker and Beall, 2009; Baker and Brown, 1984). However, only in the 1970s was metacognitive theory applied to reading, and a number of studies conducted relating to metacognition and reading. Most of this early research was carried out on L1 children (El-Hindi and Amelia, 1993). In the 1980s when metacognitive theory was applied to L2 reading a number of studies were conducted relating to adult metacognition and reading (e.g. Knight et al. 1985; Carrell 1989; Anderson 1991). This section reviews the empirical studies which examine adult L2 readers' metacognitive awareness and strategy use.

Studies of metacognitive awareness and strategy use

In reading research, several studies have investigated the role of metacognitive awareness and use of reading strategies in reading comprehension. The consensus view of these studies is that metacognitive awareness and use of reading strategies are critical elements of skilled reading. In L1 reading research, for instance, Pressley and Afflerbach (1995) examined 38 research studies on native English speakers' reading. They concluded that proficient readers are strategic, take conscious steps to comprehend texts and orchestrate the cognitive resources to ensure maximum comprehension. In addition, the L1 reading strategy research highlighted that students with good metacognition demonstrated good academic performance compared to students with poor metacognition (Kruger and Dunning 1999).

In L2 reading research a number of studies have also investigated metacognitive awareness of reading strategies of second language readers. Most of these studies have focused on the relation between metacognitive awareness about reading strategies and reading achievement of adult L2 students. For instance, Barnett (1988) undertook a large scale quantitative study of foreign language reading to investigate the relationship between reading comprehension, strategy use and perceived strategy use. Participants of the study were 278 university level students learning fourth semester French. Results of the study showed that all three were significantly correlated for cognitively mature university-level readers of French as a foreign language. Barnett found that firstly, comprehension of the student increases with the better use of strategy of reading through

context (i.e., strategy use) and secondly, comprehension increases as students perceive they use more effective strategies with or without an emphasis on the strategy of reading through context. Hence, she concludes 'students who effectively consider and remember context as they read understand more of what they read than students who employ this strategy less or less well. Moreover, students who think that they use strategies considered most productive (i.e. perceived strategy use) actually do read through context better and understand more than do those who do not think they use such strategies' (1988: 156).

Sheorey and Mokhtari (2001) in a large-scale quantitative study also explored differences in the metacognitive awareness and perceived use of reading strategies of native and non-native English speakers when reading academic materials. Participants were 302 college students - 150 native-English-speaking US and 152 ESL students. Results of the study revealed that first, both US and ESL students displayed awareness of almost all of the strategies included in the survey. Secondly, both groups attributed the same order of importance to categories of reading strategies in the survey, regardless of their reading ability or gender: cognitive strategies[1], metacognitive strategies, and support strategies[1]. Thirdly, both ESL and US high-reading-ability students showed comparable degrees of higher reported usage for cognitive and metacognitive reading strategies than lower-reading-ability students in the respective groups. In addition, the US high-reading-ability students considered support reading strategies to be relatively more valuable than low-reading-ability US students. On the other hand, ESL students attributed high value to support reading strategies, regardless of their reading ability level. Lastly, in the US group, the females reported significantly higher frequency of strategy usage whereas in the ESL sample this gender effect is not reflected.

More recently, Madhumati and Ghosh (2012) have also investigated 52 Indian ESL university level students' awareness of reading strategy use and the relationship between their reading strategy use and second language reading proficiency. The results of the study showed moderate correlation between reading strategy use and reading comprehension achievement. The high proficiency students used reading strategies frequently and selected appropriate strategies for planning and monitoring reading comprehension. By contrast, low proficiency students used inappropriate strategies.

These studies have offered rich insights regarding students' metacognitive awareness of reading strategies but arguably, they have shed light on the metacognitive awareness of reading strategies of either L1 learners or that of French, English or Indian ESL learners. Examination of the relationship between the reading performance and metacognitive awareness and strategy use of Pakistani university level ESL students is a topic that remains to be explored in the literature. The current study was therefore designed to investigate the correlation between the reading performance and metacognitive awareness and usage of reading strategies of Pakistani university level ESL learners. Specifically, the study aimed to reveal if there is a positive correlation between reading performance and metacognitive awareness and usage of reading strategies of university level ESL Pakistani students during academic reading. The question that was examined in this study was:

What is the correlation between student reading performance and metacognitive awareness and strategy use in academic English reading among university level ESL students enrolled in a public sector university of Pakistan?

3. Research Methodology

3.1 Research Design

This study employed correlation design. The Pearson product-moment correlation coefficient was employed to analyze the null hypothesis. The null hypothesis for this study states that there is no relationship between university level ESL students' English reading performance as measured by an academic reading test and their metacognitive reading awareness and strategies. There were two variables in this study. The first was students' English reading performance measured by the academic reading test. The second variable was the overall score of the Survey of Reading Strategies (SORS) instrument.

3.2 Participants

The participants in this correlational study were BS 2nd Year students of Mathematics department of a public sector university in Pakistan. The BS 2nd Year students consisted of 6 male and 26 female students and were non-native speakers of English. The entire group was invited to take part in this study since they were identified using cluster sampling. The participants filled a consent form for the study.

3.3 Instrumentation

Survey of Reading Strategies Inventory (SORS)

All participants included in the study completed the Survey of Reading Strategies Inventory (SORS), self-report instrument. This instrument was designed by Mokhtari and Reichard (2002) SORS assesses adolescent and adult ESL students' metacognitive awareness and perceived use of reading strategies while reading academic materials (Mokhtari and Sheorey, 2002). It is designed for adult, bilingual or multilingual students studying English as a second or foreign language. It seems relevant to mention here that SORS is adapted from another instrument, the Metacognitive Awareness of Reading Strategies Inventory (MARSI), to be used with students for whom English is a second language. The MARSI was developed by Mokhtari and Reichard (2002) to measure native English speakers' metacognitive strategies. It was validated using a large native speaker population (N=825) representing students with reading abilities ranging from high school to college level (Mokhtari and Sheorey, 2002). The revised SORS has also been field tested on ESL students (n=147) studying at universities in United States and its overall reliability was established with a Cronbach's alpha of .89.

The SORS consists of 30 statements structured on five-point Likert scale, ranging from 1 = "I never or almost never do this." to 5 = "I always or almost always do this." The statements included in SORS require the participants to select a number from the scale that applies to them by circling it. The selected number on each statement indicates participants' awareness and perceived use of reading strategies during academic reading. Thus, the higher the number, the higher the perceived awareness and use of the strategy.

The SORS measures three categories or subscales of reading strategies: global reading strategies (GLOB), problem solving strategies (PROB) and support strategies (SUP). Global Reading

Strategies are those intentional reading strategies that readers use to monitor or manage their reading. Examples of such strategies include deciding what to read closely and what to ignore, using typographical aids like boldface and italics to identify key information. In SORS thirteen statements are related to GLOB. Problem Solving Strategies (PROB) are the localized, focused, while reading strategies that readers use to address problems of understanding textual information. Examples of PROB include adjusting reading speed according to what one is reading, visualizing information to help remember what one is reading. In SORS eight statements are related to GLOB. Support Strategies (SUP) are the support mechanism or tools aimed at aiding readers to sustain responsiveness to reading. Examples of SUP include using dictionary, paraphrasing, reading aloud and taking notes. In SORS nine statements are related to SUP.

IELTS Academic Reading Test

In addition to Survey of Reading Strategies Inventory (SORS), all students took a reading test which is an IELTS Academic Reading Test, the standardized reading test. The reading text used in the test has the lexical density of 64.8% which meant that the text was for those students who have above intermediate reading skills.

3.4 Data Analysis

The Pearson product-moment correlation coefficient was employed to analyze the null hypothesis, as mentioned earlier. The .05 significance level was set to determine whether the hypotheses in this study made Type I errors. Two-tailed tests were used for data analysis. All quantitative data were analyzed using the SPSS software version 20.

4. Findings and Discussion

The analysis of the Pearson product-moment correlation coefficient showed no positive correlation among the participants' reading test result and their reported overall score of the Survey of Reading Strategies Inventory instrument (r (32) = .153, p = .403) as displayed in Table 1. Hence, alternative hypothesis of this study is rejected and it is concluded that there is no significant relationship between university level ESL Pakistani students' English reading performance and their metacognitive reading awareness and use of strategies.

Table 4.1. Correlation for the reading test and overall score of SORS (N=32)

		Reading score	strategy score
Reading score	Pearson Correlation	1	.153
	Sig. (2-tailed)		.403
	N	32	32
strategy score	Pearson Correlation	.153	1
	Sig. (2-tailed)	.403	
	N	32	32

The result of this study was contrary to previous researchers, including the studies of Barnett (1988), Carrell (1989), Sheorey and Mokhtari (2001), Afflerbach (2002), Block and Pressley (2003), Pressley (2006) and Madhumati and Ghosh (2012), that indicated that students' awareness of metacognitive reading strategies correlates highly with reading achievement. The result of this

study was also inconsistent with Coutinho's (2008) study, which indicated a positive correlation between the college students' metacognition and GPAs.

To understand the discrepancy between this study and previous research two potential explanations are offered here. First, the discrepancy between this research and previous research can be due to the fact that participants in this study were from Pakistani English as a second/foreign language context. In the Pakistani English as a second/foreign language context, reading provides rich and abundant samples of L2 input to improve learners' overall language proficiency at primary, secondary and tertiary level. From a utilitarian point of view, reading is what Pakistani learners need most both in their academic studies and in their future work. However, Pakistani students are not generally taught reading to help them become independent, autonomous readers. To elaborate, students are provided with 'very little or no opportunities to read on their own in English language classrooms' (Muhammad 2013: 1404). In more detail, most of the teachersask students to take turns to read each and every word carefully and aloud in the class. Moreover, most of the teachers provide meaning of difficult words themselves and also translate and explain difficult paragraphs to students during the reading classes (Khan 1995). In addition, most of the reading tasks that students perform in public sector schools and colleges do not tap their higher order reading skills as the questions in them operate at factual or literal level (Khan 1995). Needless to say, learners are not taught how to read i.e. what strategies to employ to process a text either at school, college or university level. That is, they are not taught reading strategies in any second/foreign language they study or even in their mother tongue. Furthermore, the state examination system mostly requires students to answer comprehension questions from memory (Khan 2011). Thus, teachers are generally not concerned about developing such reading comprehension abilities in students that can lead them to a more responsive reading or to a fuller interpretation of a text. Moreover, students are not taught reading strategies that they can employ to comprehend a text better. On the contrary, students in the previous studies had background information and training on reading strategies prior to filling the inventory as reported in these studies.

The discrepancy between the results of this study and previous research may also be a result of an inability of ESL learners of this study to accurately examine their own strategy awareness and use. As mentioned earlier, scores on the SORS instrument were generated through the results of a self-reported instrument. It is difficult for students to precisely and consciously assess how they are reading in English especially when they are not trained to do so and when they have never thought about the strategies one can use while reading a text. Since SORS required participants to report on the strategies he/she employs before, during or after reading, it is possible that some students might have overestimated or underestimated use of reading strategies. Isaacson and Fujita (2006) and Kruger and Dunning (1999) have also pointed out that the less competent learners have a disposition to overestimate their abilities. The ESL students in this study might have overrated their use of reading strategies.

5. Limitations of The Study

There were potential limitations in this study. One limitation was the small sample size which may influence validity, reliability, and generalizability of the quantitative data analysis. Another limitation was that SORS is limited to participants' self-reports. Thus, it is possible that it may not accurately reflect students' actual awareness and usage of reading strategies.

6. Conclusion

The results of this study have implications for students, teachers, teacher trainers and researchers. To begin with, it suggests that students should become aware of metacognitive reading strategies that proficient reading requires, although this study indicated that there is no correlation between reading performance and awareness and usage of reading strategies. The reason for this suggestion lies in the fact that most of the previous L2 reading strategies research have shown that metacognitive reading strategies awareness lead to academic achievement. In addition, it is also considered that since students in Pakistani ESL context are not taught the reading strategies they can employ during reading to comprehend a text, it is possible that the finding of this study is based on student's guess about the reading strategies they use and hence is not a true depiction of the strategies these readers actually use while reading an academic text.

In addition, it is recommended that students should also consciously try to use the reading strategies while reading. This is suggested since, Anderson (1991) in his paper has stressed that second language reading is 'not simply a matter of knowing what strategy to use, but the reader must know how to use it successfully and (to) orchestrate its use with other strategies. It is not sufficient to know about strategies, but a reader must also be able to apply them strategically.' (1991:19)

Next, this study implies that that Pakistani teachers of English as second/foreign readers should understand that reading demands active cognitive involvement with the text. Thus, to develop reading skills learners have to be more than passive recipients of information in reading classes. In addition, teachers should also try to develop higher order thinking skills in students by making students answer factual, inferential, applicative and evaluative level questions on a text. Most important of all, teachers of all ESL contexts should understand the challenges the students face in English reading, become aware of the significant role of metacognition in reading, and teach various metacognitive reading strategies to the learners to help them become ''constructively responsive'' readers. Moreover, teachers should scaffold learners more in the beginning of the teaching reading process and should gradually reduce their support to help students become independent strategic readers.

Teacher trainers are advised to educate teachers about the reading strategies advanced L2 readers employ to comprehend a text. In addition, they should also help teachers understand what metacognition is, how it applies to the reading process, and what impact it has for reading among ESL learners. Furthermore, teacher trainers should help teachers develop reading programs that can instruct students on using metacognitive reading strategies effectively during reading.

Lastly, this study has implications for researchers. It is recommended that researchers should conduct further studies to find out the metacognitive reading strategies of ESL readers and to see the effect of metacognitive reading instructions on ESL learners. In particular, it is essential for the researchers to disseminate the researches that have been carried out in the field of metacognition and reading to teachers through conference presentations as well as through publications.

7. Recommendations for Further Research

Based on the results of this study, a few recommendations for further research are presented. First, this study directs further research on metacognition. It is suggested that researches should be

carried out in ESL contexts to see if explicit instructions on metacognitive reading strategies have an impact on reading achievement of ESL readers. Second, as Baker and Beall (2009) suggested, more studies should be carried out on metacognition and reading comprehension keeping in view other variables, such as age, self-efficacy, personality, that may contribute to reading comprehension. Third, it is recommended that researchers investigate usage of metacognitive strategies by ESL readers while reading for different purpose, such as pleasure reading and academic reading. Focusing on different purposes may contribute to a better understanding of what metacognitive strategies are used by ESL readers in different types of reading. Last, because this study was limited to measure students' metacognitive awareness and strategy use through a self-reported instrument, further studies may benefit from utilizing multiple tools to explore the students' metacognitive awareness and monitoring processes. These instruments may include semi-structured interviews, teacher's evaluation, students' reflecting journals, and think-alouds. Using these tools may further inform us what, when and how learners use different reading strategies.

References

Afflerbach, P. (2002). Teaching reading self-assessment strategies. In C. Block and M. Pressley (Eds.), *Comprehension instruction: Research-based best practices,*pp. 96-111. New York: The Guildford Press.

Anderson, N. J. (1991). Individual differences in strategy use in second language reading and testing.*Modern Language Journal, 75*, 460-472.

Anderson, N. J. (1999). *Exploring second language reading: Issues and strategies.*Boston: Heinle&Heinle Publishers.

Anderson, N. J. (2003). Metacognitive reading strategies increase L2 performance. *The Language Teacher, 27(7),* 20-22.

Anderson, N. J. (2005). L2 learning strategies. In E. Hinkel (Ed.), *Handbook of research in second language teaching and learning* (pp. 757-771). Mahwah, NJ: Lawrence Erlbaum Associates.

Anderson, N. J. (2008). Metacognition and good language.In C. Griffiths (Ed.), *Lessons from good language learners* (pp. 99-109). Cambridge: Cambridge University Press.

Baker, L. (2002). Metacognition in comprehension instruction. In C. Block and M. Pressley (Eds.), *Comprehension instruction: Research-based best practices* (pp. 77-95). New York: Guilford.

Baker, L. (2008). Metacognition in Comprehension Instruction: What we've learned since NRP. In C. Block, S. Parris (Eds.).*Comprehension instruction: Research-based best practices*. (pp. 65-79). NY: The Guildford Press.

Baker, L., and Brown, A. L. (1984).Metacognitive skills and reading.In P. D. Pearson, R. Barr, M. L. Kamil, and P. Mosenthal (Eds.), *Handbook of research in reading* (pp. 353-394). New York: Longman.

Baker, L., and Beall, L. C. (2009); Metacognitive processes and reading comprehension. In S. E. Israel and G. G. Duffy (Eds.), *Handbook of research on reading comprehension* (pp. 373-388). New York: Routledge.

Barnett, M. A. (1988). Reading through context: How real and perceived strategy use affects L2 comprehension. *Modern Language Journal, 72*, 150-160.

Block, E. L. (1986). The comprehension strategies of second language readers.*TESOL Quarterly, 20*, 463-494.

Block, E. L. (1992). See how they read: Comprehension monitoring of L1 and L2 readers. *TESOL Quarterly*, *26*, 319–343.

Block, C. C, and Israel, S. E. (2004). The ABCs of performing highly effective thinkalouds.*The Reading Teacher, 58(2),* 154-167.

Block, C. and Pressley, M. (2003). Best practices in comprehension instruction. In Morrow, L, Gambrell, L., and Pressley, M. *Best practices in literacyinstruction,* 2nd ed., pp. 111-126. New York: The Guildford Press.

Brown, A. L. (1978) Knowing when, where, and how to remember: A problem of metacognition. In R. Glaser (ed.) *Advances in Educational Psychology* (Vol 1) (pp. 77-165). Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.

Brown, A. (1987). Metacognition, executive control, self-regulation and other more mysterious mechanisms.In F. E. Weinert and R. H. Kluwe (Eds.), *Metacognition, motivation, and understanding* (pp. 65-116). Hillsdale, NJ: Erlbaum.

Brown, A. L. and Smiley, S. S. (1978) The development of strategies for studying texts. *Child Development* 49 (4), 1076-88.

Carr, M., Alexander, J., and Folds-Bennett, T. (1994).Metacognition and Mathematics Strategy Use.*Applied Cognitive Psychology*, 8, 583-595.

Carrell, P. L. (1989).Metacognitive awareness and second language reading.*Modern Language Journal, 73*, 121-133.

Coutinho, S. (2008).Self-efficacy, metacognition, and performance.*North American Journal of Psychology, 10(1),* 165-172.

Dewey, J. (1910). *How we think.* Boston: D. C. Heath.

Dinsmore, D. L., Alexander, P. A. and Loughlin, S. M. (2008) Focusing the conceptual lens on metacognition, self-regulation, and self-regulated learning. *Educational Psychology Review* 20 (4), 391–408.

Dunlosky J. and Metcalfe, J. (2009).Metacognition. Thousand Oaks, CA: Sage Publications, Inc.

Efklides, A., (2008). Metacognition: Defining its facets and levels of functioning in relation to self- and co-regulation. *European Psychologist*, 13, 277–287.

El-Hindi and Amelia, (1993).Supporting College Learners: Metacognition, locus of control, reading Comprehension and writing performance. ERIC Document Reproduction Service ED 364852.

Flavell, J. H. (1976). Metacognitive aspects of problem solving. In L. B. Resnick (Ed.), *The nature of intelligence* (pp. 231-235). Hillsdale, NJ: Lawrence Erlbaum Associates.

Flavell, J, H. (1981). Cognitive monitoring.In W. P. Dickson (Ed.), Children's oral communication skills (pp. 35-60). New York: Academic Press.

Griffith, P. L. and Ruan, J. (2005). What is metacognition and what should be its role in literacy instruction? In S. Isreal, C. Block, K. Bauserman, K. Kinnucan-Welsch (Eds*.) Metacognition in literacy learning: Theory, assessment, instruction and professional development* (pp. 3-18). Hillsdale, NJ: Lawrence Erlbaum Associates.

Hacker, J. D., Dunlosky, J., and Graesser, A.C (Eds).(1998). Metacognition in Educational Theory and Practice. Mahwah, NJ: Erlbaum.

Isaacson, R. M., and Fujita, F. (2006). Metacognitive knowledge monitoring and selfregulated learning: Academic success and reflections on learning. *Journal of the Scholarship of Teaching and Learning, 6(1),* 39-55.

Khan, I. (2011).Reading assessment techniques among selected secondary school teachers in Pakistan: Current trends and practices.*International Journal on New Trends in Education and Their Implications* 2 (4), 58-75.

Khan, S. N. (1995).*An Evaluation of the Exercises Provided in the English Compulsory Textbook for Class X*. Unpublished master's thesis. Department of English, University of Karachi, Pakistan.

Knight, S. L., Padron, Y. N., and Waxman, H. C. (1985).The cognitive reading strategies of ESL students.*TESOL Quarterly*, 19, 789-792.

Kruger, J., and Dunning, D. (1999). Unskilled and unaware of it: How difficulties in recognizing one's own incompetence lead to inflated self-assessments. *Journal of Personality and Social Psychology,* 77(6), 1121-1134.

Madhumathi, P. and Ghosh, A. (2012).Awareness of reading strategy use of Indian ESL students and the relationship with reading comprehension achievement.*English Language Teaching* 5 (12), 131-140.

Martinez, M. E. (2006). What is metacognition? *The Phi Delta Kappan*87 (9), 696-699.

Mokhtari, K., and Reichard, C. A. (2002).Assessing students' metacognitive awareness of reading strategies.*Journal of Educational Psychology, 94(2),* 249-259.

Mokhtari, K., and Sheorey,R. (2002). Measuring ESL students' awareness of reading strategies.*Journal of Development Education,* 25, (3), 2-10.

Muhammad, S. (2013). Second language reading instruction in Pakistan.*Procedia-Social and Behavioral Sciences* 70, 1403-1412.

Nietfeld, J. L., and Schraw, G. (2002).The effect of knowledge and strategy explanation on monitoring accuracy. *Journal of Educational Research, 95, 131-142.*

O' Malley, J.M., Chamot,A.U., Stewner-Mazanares,G., Russo, R. and Kupper, L. (1985). Learning strategies applications with students of English as a second language.*TESOL Quarterly*, 19, 285-296

O'Malley, J. M., and Chamot, A. U. (1990).*Learning strategies in second language acquisition.*Cambridge: Cambridge University Press.

Ormrod, J. E. (2008). *Human learning* (5th ed.). Upper Saddle River, NJ: Pearson/Merrill Prentice Hall.

Pintrich, P. (2002). The role of metacognitive knowledge in learning, teaching and assessment.*Theory Into Practice*, 41(4), 219-225.

Pressley, M. (2006).*What the future of reading research could be.* A paper presented at the International Reading Association's Reading Research 2006, Chicago, Illinois, USA.

Pressley, M. and Afflerbach, P. (1995) *Verbal Protocols of Reading: The Nature of Constructively Responsive Reading*. Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.

Pressley, M., and Gaskins, I. W. (2006).Metacognitively competent reading comprehension is constructively responsive reading: How can such reading be developed in students? *Metacognition and Learning,* 7(1), 99-113.

Rogoff, B. (1990). Apprenticeship in Thinking: Cognitive Development in Social Context. New York: Oxford University Press.

Schcolnik, M., Kol, S. and Abarbanel, J. (2006).Constructivism in Theory and in Practice.*English Teaching Forum*, 4, 12-20.

Schmitt, M. C. (2005). Measuring students' awareness and control of strategic processes. In S. E. Israel, C. C. Block, K. L. Bauserman, and K. Kinnucan-Welsch (Eds.), *Metacogriition in*

literacy learning: Theory, assessment, instruction, and professional development (pp. 101-119). Mahwah, NJ: Lawrence Erlbaum Associates.

Schneider, W. (2008). The development of metacognitive knowledge in children and adolescents: Major trends and implications for education. *Mind, Brain and Education*, 2(3), 114-121.

Schraw, G. (1998). Promoting general metacognitive awareness.*Instructional Science,*26(1-2), 113-125.

Schunk, D. H. (2008). Metacognition, self-regulation, and self-regulated learning: Research recommendations. *Educational Psychology Review*, 20, 463–467.

Sheorey, R., and Mokhtari, K. (2001).Differences in the metacognitive awareness of reading strategies among native and non-native readers, System, 29, 431-449.

Sheorey, R., and Mokhtari, K. (2008).Introduction. In K. Mokhtari and R. Sheorey (Eds.), *Reading strategies of first- and second-language learners: See how they read (pp.*1-10). Norwood, MA: Christopher-Gordon Publishers.

Shimamura, (2000).The role of prefrontal cortex in dynamic filtering.*Psychobiology*, 28 (2), 207-218.

Steele, J.L., Meredith, K.S., Temples, C. (1998). *A Framework for Critical Reading Across the Curriculum: Guidebook 1.*NewYork: International Reading Association.

Tei, E. and Stewart, O. (1985) Effective studying from text: Applying metacognitive strategies.*Forum for Reading* 16 (2), 46-55.

Thorndike, E. L. (1917). Reading ad reasoning: A study of mistakes in paragraph reading.
Journal of Educational Psychology, 8(6), 323-332.

Van den Broek, P., McMaster, K.L., Kendoeu, P. and Espin, C, A. (2007). Higher-order comprehension processes in struggling readers: A perspective for research and intervention. *Scientific Studies of Reading*, 11 (4), 289-312.

Wadsworth, B.J. (1971). Piaget's theory of Cognitive and Affective Development: Foundations of Constructivism (5th Edition). Longman.

Whitebread, D.(2011). Metacognition, strategy use and instruction.*Educational Review*, 63, (3), 380-382.

William, M., and Burden, R. L. (1997). Psychology for language teachers: A social constructivist approach. Cambridge: Cambridge University Press.

Yzerbyt, V.Y., Lories, G and Dardenne, B. (1998). Metacognition: Cognitive and Social Dimensions. London: Sage Publications.