# A CORRELATIONAL STUDY OF CRITICAL THINKING PEDAGOGY AND CRITICAL READING PROFICIENCY

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**Abstract**

This research study investigates the implications of critical thinking pedagogy in teaching reading comprehension skills to second language learners. The theoretical framework of the study is derived from the concept of critical thinking given by Bloom (1956) in his cognitive domain of educational objectives according to which learning of any available material or content is related with or dependent upon the level of human thinking. This implies that the lower the level of thinking, the lower the rate of learning; and the higher the level of thinking, the higher the learning. Following this line of the issue, the researchers have attempted to investigate whether critical thinking instruction can enhance reading comprehension skills of the second language learners. The data have been collected from 35 ESL learners. The extent of the use of critical thinking pedagogy has been assessed by using a questionnaire, while the reading proficiency of the learners has been measured through a critical reading test. The relationship between critical thinking pedagogy and critical reading proficiency has been explored statistically by applying Pearson product-moment correlational test on the collected data. The results show a positive relationship between critical thinking pedagogy and critical reading proficiency.

**Key Words:** Critical thinking, critical thinking pedagogy, reading comprehension skills, critical reading proficiency, Bloom's taxonomy of educational objectives and cognitive domain

## Introduction

In the present times, critical thinking is one of the major concepts under consideration. Success in education is generally equated with the power to think critically and behave creatively in academic tasks. In the field of language teaching, the concept of critical thinking was initially practiced in the United States for first language acquisition. Gradually, it achieved a pivotal significance in second and foreign language learning (Atkinson, 1997). Moon (2008) thinks that there is a dire need to explore the term 'critical thinking' because critical thinking skills can help to activate higher level learning. Lipman (2003) proposes that the teacher's responsibility includes not only to push the students from one educational level to the next, but also to develop critical thinking skills in them. Defining the objectives of a curriculum, Brown (2004) suggests that an ideal ELT program should necessarily exceed the boundary of

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linguistic factors, and step towards developing the art of critical thinking in the learners. He further points out that critical thinking matters a lot in language learning; so, it must be one of the constituent of language learning strategies. Thadphoothon (2002) argues that English, having the status of an international language, demands the ESL users and learners to be critical in their learning and use of language. Likewise, Khan (2011) comments that the real aim of education is "the creation of a critical frame of mind capable of independent, rational thinking and objective intelligent decision making" (p. 5). Hence, it can be assumed that language skills (reading, writing, listening and speaking) in higher education can be made active by adopting critical thinking approach to learning.

**Theoretical Background**

**What is critical thinking?**

Critical thinking, to be defined simply, is the ability to analyze and evaluate information. Halvorson (2005, p. 1) states that "to think critically about an issue is to consider that issue from various perspectives, to look at and challenge any possible assumptions that may underlie the issue and to explore its possible alternative". John Dewy, the American philosopher, psychologist and educator calls it "reflective thinking" and defines it as "the kind of thinking that consists in turning a subject over in the mind and giving it serious consecutive considerations" (cited in Ido and Jones, 1991, p. 112). Levy (1997) regards critical thinking as an active and systematic cognitive strategy to examine, evaluate and understand events, solve problems and make decisions based on sound reasoning and valid evidence.

**Bloom's Concept of Cognitive Domain**

In his *Taxonomy of Educational Objectives*, Bloom (1956) categorizes three overlapping domains of educational activities: the cognitive domain (mental skills), the affective domain (growth in feelings, emotional areas or attitudes), and the psychomotor domain (manual or physical skills). In the present study, the researchers will deal with the cognitive domain only as the other two (i.e. the affective domain and the psychomotor domain) do not occur within the context of the present study because it deals with cognitive aspects of learning, i.e. use of critical thinking in reading.

The cognitive domain (Bloom, 1956) involves knowledge and the development of intellectual skills. This includes the recall or recognition of specific facts, procedural patterns, and concepts that serve in the development of intellectual abilities and skills. Bloom (1956) identified six levels within the cognitive domain, each of which relates to a different level of cognitive ability (Duran et al. 2006). These cognitive levels are: knowledge, comprehension, application, analysis, synthesis, and evaluation which are listed in order below (from bottom to top), starting from the simplest behavior to the most complex. The categories can be thought of as degrees of difficulties i.e. the first ones must normally be mastered before the next ones can take place.

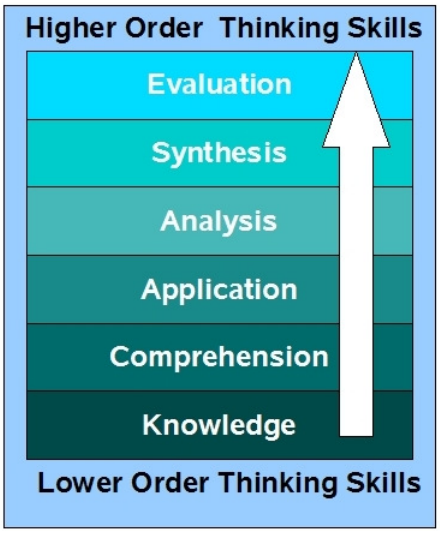



*Figure 1: Levels of human thinking in Bloom's (1956) cognitive domain*

The first three levels of human thinking (Knowledge, Comprehension and Application) constitute the lower order thinking skills, while the last three levels (Analysis, Synthesis and Evaluation) involve the higher order thinking skills and activities. Duran, et al. (2006, p. 160) observe that **knowledge** focuses on remembering and reciting information; **comprehension** focuses on sequencing the already learned information into a meaningful pattern; **application** focuses on applying information according to a rule or principle in a specific situation; **analysis** focuses on parts and their functionality in the whole; **synthesis** involves putting parts together to form a new and original whole and

**evaluation** refers to valuing and making judgments based upon the received information.

**Critical Thinking in Language Teaching**

Over the last 20 years, educators and psychologists have stressed the importance of critical thinking skills as a part of curriculum. They believe that the key goal of education is to teach learners how to think critically (Hosseini et al. 2012). In the same vein, Dewy (quoted in Ido and Jones, 1991) argues that if learners do not reflectively think about the content they are studying, their knowledge cannot be useful i.e. memorizing content knowledge means ignoring the development of critical thinking.

In the perspective of using critical thinking in language teaching, it is strongly believed that using language and knowing the meaning do not lead the learners to be proficient. They need to display creative and critical thinking through the language to express and support their ideas creatively and critically (Fahim and Sa'eepour, 2011). Fahim et al. (2012) affirm that the development of critical thinking skills has become a key goal for educators in first and second language contexts. However, it is evident that the use of such activities has still not become widespread in a number of ELT situations. They opine that one reason for this may be lack of awareness about how levels of thinking can be conceptualized in ELT activities.

**Critical Reading**

A more recent concept growing rapidly in research in the field of ELT is that of 'critical reading'. 'Critical reading' generally refers to the use of critical thinking while reading a text. Critical thinking is a sort of higher order thinking that helps learners act critically through using problem solving strategies (Gheith, 2007). From this perspective, the act of reading, being a problem solving activity, itself provides an opportunity of a good command of thinking on the part of the learner (Hosseini et al. 2012). Cook (1991) regards reading primarily as a thinking process involving the use of various reading strategies on the part of the learner. Erler and Finbeiner (2007) say that in L2 reading, the readers are constantly engaged in a complex interaction between text, setting, reader himself, reader's background, reading strategies and the L1 and L2. It necessitates them to be able to evaluate the text critically. In other words, in order to understand the text and facilitate this complex interaction,

they need to be critical thinkers i.e. to learn to value their own thinking, to compare their own thinking and interpretations with others, to reexamine, accept or reject the part of their interpretations of the text, to agree or disagree with the author, to accept or reject the author's point, and to evaluate the newly received information in the light of their previous world knowledge (Collins, 1993). This is what we call using critical thinking in reading or 'critical reading'. Elder and Paul (1994) also elaborate the term 'critical thinking' in reading context. They define it as reading with an emphasis on understanding one's purpose in reading; understanding the author's purpose in writing; seeing ideas in a text as being interconnected; and looking for and understanding systems of meaning.

**Relationship between Critical Thinking and Reading Comprehension**

Paul (2004) has stressed that there is a significant correlation between critical thinking and reading comprehension. He affirms that the reflective mind improves its thinking by reflectively thinking about it. Likewise, it improves its reading by reflectively thinking about how it is reading. This shows the connection between critical thinking and reading comprehension. Veeravagu et al. (2010) affirm that reading comprehension is a thinking process by which a reader gets ideas from printed materials; determines the author's intended meanings; relates these meanings to his previous knowledge and evaluates their appropriateness and worth. Logically, active and thoughtful reading procedures should lead learners to critical analysis of the text, resulting in the reconstruction of knowledge. Many researchers advocate this concept of reading as a source for critical thinking engagement with texts because of its potential to facilitate and reconstruct knowledge that ensures comprehension (Fielding & Pearson, 1994). Veeravagu et al. (2010) further state that comprehension includes all the skills and abilities necessary for literal, inferential and critical reading. Facione (2011, p. 18) has also referred to a direct connection between critical thinking and reading comprehension as "improvements in one are paralleled by improvements in the other". Grabe (1991) proposes that inference, analysis, synthesis and evaluation are some of the cognitive skills involved in reading comprehension. Facione (2011) also considers them the very core of critical thinking.

Using the taxonomy of critical thinking skills drawn up by Facione (1990). Fahim et al. (2012) designed a program to probe the effects of critical thinking strategies training on reading comprehension of Iranian EFL students. Overall, the findings provided an empirical support for the facilitative effect of critical thinking strategy training on reading comprehension performance of the EFL learners. Comparing and analyzing various definitions of critical thinking and reading comprehension as given by different experts, Fahim and Sa'eepour (2011, p. 872) state that "critical thinking and comprehension both are cognitive abilities having cognitive skills in common so that improving the first can contribute to the improvement of the other". In line with the studies confirming the positive relationship between critical thinking and language proficiency, Fahim and Sa'eepour (2011) investigated the impact of teaching critical thinking skills on reading comprehension ability, as well as the effect of applying debate on critical thinking of Iranian EFL learners. The results confirmed that teaching critical thinking skills has a positive effect on reading comprehension. These studies demonstrate the positive impact of critical thinking on reading comprehension. The present study, however, in relation to the cognitive domain of Bloom's Taxonomy, aims at investigating the possible effect of critical thinking strategies instruction on critical reading ability.

**The Study**

Being ELT professionals and having read a considerable amount of literature on critical thinking and reading comprehension, the researchers felt curious to assess the current state of the use of critical thinking approach in teaching and learning L2 reading comprehension skills in a university of Southern Punjab in Pakistan where the researchers themselves have been teaching English over the years. The purpose of this study is to know whether the real aim of education (i.e. using critical thinking approach in learning) is being achieved or not. This was planned to be carried out at the above mentioned institute by evaluating the teachers' use of critical thinking pedagogy while teaching reading skills to the L2 learners of English and subsequently measuring the learners' acquired proficiency in L2 critical reading. The rationale to choose reading skills for this study was that the reading skills are the most important receptive skills at the level of higher education in Pakistan as

the learners are required to read a large number of reading materials in order to cope up with the demands of their learning.

**Research Questions**

The study concentrates upon investigating the following questions:

i- To what extent is critical thinking instruction available to the L2 learners of English?

ii- What is the critical reading proficiency level of the L2 learners of English?

iii- Is there any correlation between critical thinking instruction and critical reading proficiency?

**Research Methodology**

**Participants**

In order to explore the aforementioned correlation, the data were obtained from 35 ESL learners studying at graduation level in a university in Southern Punjab, Pakistan. The participants were enrolled in the department of English in B.A. (Hons) program. The sample consisted of both male and female students selected in accordance with their proportion in the B.A. (Hons) program in the department of English. The male to female ratio in the actual population was 1:3 students respectively. Therefore, 9 male students and 26 female students were selected for data collection. 12 participants were from B.A (Hons) English 1$^{st}$ semester, 12 from 3$^{rd}$ semester and 11were from 7$^{th}$ semester. Hence, all of the participants had at least 13 years of formal education in English language, and had been studying in the said department or institute as ESL learners for 1, 2 and 3 years respectively.

**Data Collection Tools**

**Questionnaire**

A self-designed questionnaire was used to collect data. However, a considerable help was sought from Rahman (2007) in the construction of this instrument. The questionnaire was meant to measure the level of critical thinking strategies of instruction provided to the participants. It consisted of 17 items pertaining to the use of a variety of reading strategies which involve critical thinking on the part of the learners while reading English texts. Items 1-7 are related with general thinking skills and strategies of reading while items 8-14 are directly based upon the six levels of human thinking as given in Bloom's (1956) cognitive domain of educational objectives. The participants' answers to each of the

statements were drawn in terms of 5-point likert scale which aimed to know the frequency to which a particular critical thinking-cum-reading strategy is used as a reading instruction by the teachers of the participants (see questionnaire in Appendix-A).

**Critical Reading Test**

A critical reading test (see Appendix-B) was conducted to measure the proficiency in critical reading of the L2 learners of English. The test was especially modeled in the design of six levels of human thinking as discussed in Bloom's (1956) cognitive domain of educational objectives. The test was based upon a passage written in English language. It consisted of 5 paragraphs each of a medium length (approx. 90 words). The participants were supposed to read the passage within 20 minutes and answer the questions given at the end of the passage. The test included 14 questions. The first seven questions (Section 1) inquired about the details related with the specific paragraphs to measure students' knowledge and comprehension ability. The last seven questions (Section 2) on the other hand, were based upon the learners' overall understanding of the given passage aiming exclusively to judge their critical reading ability.

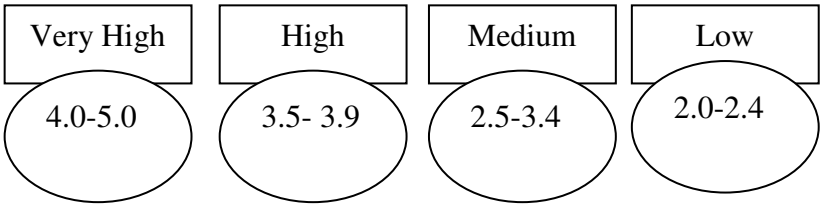
**Data Analysis and Findings**

The study assumes the quantitative-cum-qualitative paradigm for the analysis of the collected data. The participants' responses to the questionnaire were fed into the Statistical Package for Social Sciences (SPSS) for their quantitative analysis, and descriptive statistics were computed for each variable. On the other hand, the reading comprehension test was first analyzed manually by checking the participants' answers to the given questions and then awarding them scores and grades accordingly. Later, their attained scores were submitted to SPSS for a quantitative analysis of the results and to find out correlation between critical thinking pedagogy and critical reading proficiency. For this purpose, Pearson Product-moment Correlations were identified through standard correlational tests in order to measure the nature and extent of the probability of relationship between critical thinking pedagogy and critical reading proficiency.

**Analysis of the Questionnaire**

The questionnaire was analyzed by obtaining descriptive statistics for the participants' responses. As the questionnaire was meant to measure the

level of critical thinking pedagogy, an interpretation scale for the high, low or medium instruction was devised for the analysis of the obtained statistical values. The scale of interpretation is given below:




The rectangular shapes represent the level of critical thinking pedagogy, while the circular shapes identify the Mean scores computed through descriptive statistics. Scores for overall use of critical thinking pedagogy were calculated as are presented in tabulated form below:

Table 1: Descriptive statistics for critical thinking pedagogy

| **Sr. No.** | | **N** | **Mean** | **Std. Deviation** |
|---|---|---|---|---|
| 1 | Asking warm-up questions before reading | 35 | 4.51 | .853 |
| 2 | Reading a text with a set purpose | 35 | 4.34 | .802 |
| 3 | Using prior knowledge to understand text | 35 | 4.46 | .886 |
| 4 | Self-questioning during reading | 35 | 4.11 | .867 |
| 5 | Inferring the unstated statement of the writer | 35 | 4.00 | 1.163 |
| 6 | Surveying text organization | 35 | 4.00 | .804 |
| 7 | Reading text intensively | 35 | 4.57 | .739 |
| 8 | Asking knowledge based questions | 35 | 4.71 | .458 |
| 9 | Asking comprehension check questions | 35 | 4.43 | 1.008 |
| 10 | Applying textual information to different contexts | 35 | 4.29 | .957 |
| 11 | Analyzing the text | 35 | 4.83 | .453 |
| 12 | Analyzing attitude, mood, tone etc. of the author | 35 | 4.77 | .731 |
| 13 | Practicing synthesis skills | 35 | 4.31 | .718 |
| 14 | Evaluating the textual information | 35 | 4.66 | .482 |

| | | | | |
|---|---|---|---|---|
| 15 | Answering textually explicit questions | 35 | 4.26 | .886 |
| 16 | Answering textually implicit questions | 35 | 4.26 | 1.067 |
| 17 | Answering scriptally implicit questions | 35 | 4.11 | 1.022 |
| | **Total critical thinking instruction (average)** | **35** | **4.38** | **.51914** |

Scores for overall use of critical thinking pedagogy were calculated as are presented in bold figures above. The average mean score (4.38) illustrates that a very high level of critical thinking strategy instruction is available to the participants.

**Overall results of the critical reading test**

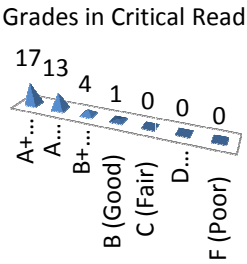
The following data were attained for overall results of the critical reading test:

Table 2: Overall results of the critical reading test

| Sr. No | % Marks | Grade | Frequency | Frequency % |
|---|---|---|---|---|
| 1 | 90% & above | A+ | 17 | 49% |
| 2 | 80%-89% | A | 13 | 37% |
| 3 | 70%-79% | B+ | 4 | 11% |
| 4 | 60%-69% | B | 1 | 3% |
| 5 | 50%-59% | C | 0 | 0% |
| 6 | 40%-49% | D | 0 | 0% |
| 7 | Below 40% | F | 0 | 0% |

The results reveal that 49% of the students passed the critical reading test with A+ grade (Marvelous/Exceptional), 37% of them got A grade (Excellent), 11% secured B+ grade (Very Good) and the remaining 3% of the participants achieved B grade (Good). None of the participants got C (Fair), D (Satisfactory) or F grade (Poor). The top highest (49%) and the second highest percentage (37%) of the participants securing A+ and A grades respectively is demonstrative of the fact that the students' overall critical reading proficiency is excellent. The percentage of students' achieved grades in the said test can be depicted in graphical form given below:

***Figure 3: Participants' Secured Grades in Critical Reading Test***




It is evident from the above data that the participants' showed a very high level of proficiency in text comprehension.

**Item-wise description of the results of critical reading test**

The results of the critical reading test were also analyzed in terms of its individual items, i.e. levels of critical thinking. As mentioned earlier, the critical reading test was especially modeled in the design of six levels of human thinking (each categorized either as Lower Order or Higher Order Thinking) as discussed in Bloom's (1956) cognitive domain of educational objectives. It included 8 items to evaluate participants' lower order thinking skills (3 items each for knowledge and comprehension and 2 items for application). The rest of the 6 items of the designed test aimed to measure higher order thinking skills, 2 items each for analysis, synthesis and evaluation). The participants' individual scores in each level of thinking were transformed into percentage scores and grades (shown in table 3) for an ease of interpretation of their ability in critical thinking.

Table 3: Item-wise description of the results of critical reading test

| **Levels of Thinking** ↓ | **Grades & Percentage Scores** | **A+ 90% or Above** | **A 80%-89%** | **B+ 70%-79%** | **B 60%-69%** | **C 50%-59%** | **D 40%-49%** | **F Below 40%** |
|---|---|---|---|---|---|---|---|---|
| **Knowledge** | percentage of | 25 | 5 | 0 | 4 | 0 | 0 | 1 |
| | | 71% | 15% | 0% | 11% | 0% | 0% | 3% |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Comprehension** | 27<br>77% | 5<br>15% | 0<br>0% | 2<br>5% | 0<br>0% | 0<br>0% | 1<br>3% |
| **Application** | 17<br>49% | 0<br>0% | 8<br>23% | 0<br>0% | 8<br>23% | 0<br>0% | 2<br>5% |
| **Analysis** | 25<br>71% | 4<br>11% | 0<br>0% | 2<br>6% | 0<br>0% | 3<br>9% | 1<br>3% |
| **Synthesis** | 15<br>43% | 7<br>20% | 0<br>0% | 13<br>37% | 0<br>0% | 0<br>0% | 0<br>0% |
| **Evaluation** | 26<br>74% | 0<br>0% | 7<br>20% | 0<br>0% | 1<br>3% | 0<br>0% | 1<br>3% |

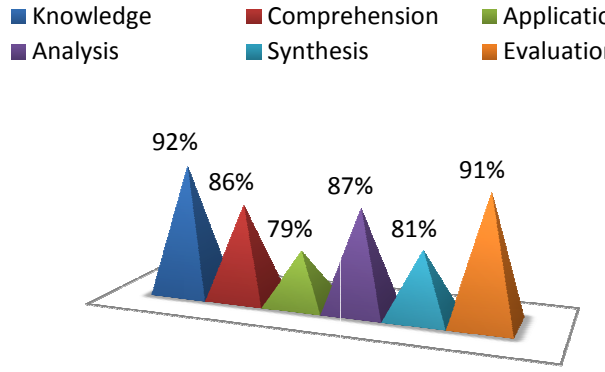
Afterwards, average percent scores for each level of cognition were calculated as is presented below in table 4.

*Table 4: Average scores in various levels of thinking*

| **Category of cognition** | **Levels of thinking** | | **Average percent score and grade** | | **Category percent score and grade** | |
|---|---|---|---|---|---|---|
| **Lower order thinking** | 1 | Knowledge | 92% | A+ | 89% | A |
| | 2 | Comprehension | 86% | A | | |
| | 3 | Application | 79% | B+ | | |
| **Higher order thinking** | 4 | Analysis | 87% | A | 86% | A |
| | 5 | Synthesis | 81% | A | | |
| | 6 | Evaluation | 91% | A+ | | |

The results produced through the above table can be used to carry out a comparison between participants' proficiency in six different levels of critical reading. This is represented through the figure below:

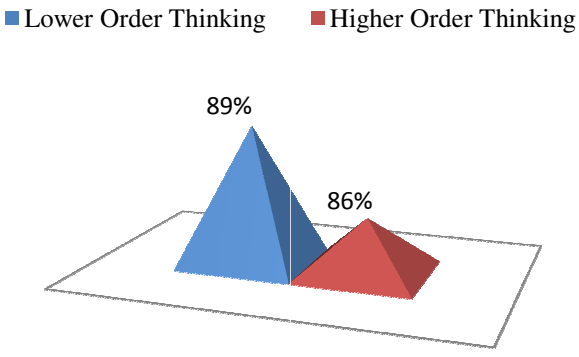
***Figure 4: Average Scores in Critical Reading***




The differentiated bars show that participants' critical reading ability is highest for knowledge (average score = 92%) and second highest for 'Evaluation' (Average score = 91%). Moreover, the average percent score for 'Analysis' is 87%; for 'Comprehension' it is 86%; and for 'Synthesis' it is 81%. The least among all is the score for the skills of 'Application', although it is still very good being 79% (B+ grade).

Finally, average percent scores for higher and lower order thinking skills were figured out by summing up those of the individual levels of cognition involved in each category. These scores were then compared and contrasted in the form of the following bar chart:

***Figure 5: Average Scores in Lower and Higher Order Thinking***



The data demonstrates that the participants' proficiency is excellent (80%-89% score) for both Lower Order and Higher Order thinking skills, yet their command on Lower Order reading skills is greater than that of the Higher Order reading skills.

**Identification of Correlation between Critical Thinking Pedagogy and Critical Reading Proficiency**

Pearson Product-moment correlation coefficients were computed to investigate the statistical relationship between critical thinking instruction and proficiency in critical reading (see table 5).

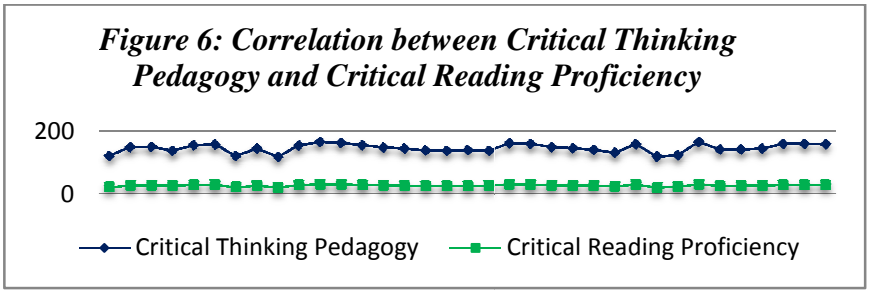
*Table 5: Results of Pearson Product-moment Correlation for Cognitive Reading Instruction and Critical Reading Proficiency*

| | | Critical Thinking Instruction | Proficiency in Critical Reading |
|---|---|---|---|
| Critical Thinking Instruction | Pearson Correlation | 1 | .977** |
| | Sig. (2-tailed) | | .000 |
| | N | 35 | 35 |
| Proficiency in Critical Reading | Pearson Correlation | .977** | 1 |
| | Sig. (2-tailed) | .000 | |
| | N | 35 | 35 |

**. Correlation is significant at the 0.01 level (2-tailed).

The results reveal that a strong positive correlation exists between critical thinking pedagogy ($r$ = .977, $p$ = .000) and critical reading proficiency. The correlation is significant at the level 0.01. The correlation is visually represented in figure 6 below:

Figure 6: Scatter plot for correlation between critical thinking pedagogy and critical reading proficiency.



The strong similarity in the vertical flow of points in each category is supportive for a positive relationship.

***Discussion***

**Research Question 1:** To what extent is critical thinking instruction available to the L2 learners of English?

The findings show that a very high level of critical thinking instruction is available to the L2 learners of English. The learners report that the teachers use critical thinking strategies while teaching them. This stands in contrast with the findings of a number of other studies which depict a very bleak situation regarding the use of critical thinking instruction in academic institutes of various regions in Pakistan as well as in other contexts. For example, Khan (2001) claims that education system in Pakistan is devoid of the use of critical thinking. Likewise, Fahim et al. (2012) state that the application of critical thinking is not commonly realized in ESL situations.

**Research Question 2:** What is the critical reading proficiency level of the L2 learners of English?

The findings also show that the critical reading proficiency level of the L2 learners of English is very high. They are good at practicing both lower order thinking skills (i.e. knowledge, comprehension and application) and higher order thinking skills (i.e. analysis, synthesis and evaluation) while reading English texts. This might be because of the critical thinking instruction provided to them by their teachers. The students' high scores in six levels of cognition (i.e. critical thinking) may also be associated with the cognitive input available to the learners in the form of cognitive reading strategies and critical reading skills. Similar kinds of relationships between cognition and reading comprehension, and between critical thinking and reading comprehension have been reported in various studies like Grabe (1991), Facione (2011), Fielding and Pearson (1994), Paul (2004), Kuland (2010), Veeravagu et. al. (2010), Fahim and Sa'eepour (2011) and Fahim et al. (2012) (See theoretical background).

**Research Question 3:** Is there any correlation between critical thinking instruction and critical reading proficiency?

The results show a very strong positive correlation (r = .977**) between critical thinking pedagogy and proficiency in text comprehension or critical reading. It suggests that the more the critical thinking instruction, the better the proficiency in text comprehension or critical reading. Hence, it is suggested that the Cognitive domain of Bloom's Taxonomy

of Educational Objectives (1956) has positive implications in teaching reading skills to L2 learners. If ESL learners are instructed about various levels of thinking and about how to inculcate these levels in reading an English text, they automatically become proficient in their critical reading skills.

Here, it is worth mentioning that the present study has moved a step further by disclosing the role of cognitive strategies in improving critical thinking. The previously conducted research studies focused mainly on the impact of critical thinking on reading comprehension. The current study, on the contrary, has twin findings. Besides investigating the role of critical thinking (i.e. cognitive and critical reading instruction) in reading comprehension, it aimed and finally succeeded in exploring the possible effects of comprehension skills and strategies on critical thinking (i.e. the role of reading strategies on critical reading).

**Conclusion**

Finally, it can be concluded that the ESL learners are highly instructed about using critical thinking in reading English materials. The students use all major types of critical thinking strategies such as setting a purpose for reading, previewing, activating prior knowledge, making connections, drawing inferences, self-questioning, summarizing, synthesizing and evaluating. Moreover, it is also concluded that the ESL learners are highly proficient in critical reading. The students' average grades in six separate levels of thinking (A+, A, B+, A, A and A+ respectively) reveal that the students have 'exceptional' power in answering 'knowledge' based questions (textually explicit questions). They also have an 'exceptional' proficiency in evaluation of their reading materials. Likewise, their capability of 'comprehension', 'analysis' and 'synthesis' of the textual information is of 'excellent' level. As far as the 'application' of the textual information is concerned, they have exhibited a 'very good' practice in this level of thinking. All this demonstrates that the students possess a very high level of cognitive and critical thinking ability. Hence, the students' capability in both lower order and higher order thinking skills is excellent, although their proficiency in the former one is a bit greater than the latter one.

## References


Atkinson, D. (1997). A Critical Approach to Critical Thinking in TESOL.*TESOL Quarterly*.71(89), 32-39.

Bloom, B. (1956). *A taxonomy of educational objectives. Handbook 1: The cognitive domain.* New York: McKay.

Brown, H. D. (2004). Some Practical Thoughts about Students- Sensitive Critical Pedagogy. *The language teacher,* 28(7), 23-27.

Collins, N. D. (1993). Teaching Critical Reading through Literature. *ERRIC Digest,* 4: 1-5.

Cook, J. E. (1991). *Critical reading? How? Why? Teaching pre k-8*. 21(6): 23-24.

Duron, R., Limbach, B. &Waugh, W. (2006).Critical Thinking Framework for any Discipline. *International journal of teaching and learning in higher education.* 17(2),160-166.

Elder, L., & Paul, R. (1994). Critical thinking: Why We Must Transform Our Teaching. *Journal of developmental education* 18(1), 34-35.

Erler, L. & Finkbeiner, C. (2007). *A review of reading strategies: Focus on the impact of first language.* In Cohen, A. D. and Macro, E. (Eds.) Language Learner Strategies (pp: 187-206). Oxford: Oxford University Press.

Facione, P. A. (1990). *Critical Thinking: A statement of expert consensus for purposes of educational assessment and instruction*. Millbare. CA: California Academic Press.

Facione, P. A. (2011). *Critical thinking: What it is and why it counts*. San Jose, CA: California Academic Press. Retrieved May 23, 2011 from http://www.insightassessment.com/pdf_files/What&Why2010.pdf

Fahim, M. &Sa'eepour, M. (2011).The Impact of Teaching Critical Thinking Skills on Reading Comprehension of Iranian EFL Learners. *Journal of language teaching and research*, 2(4), 867-874.

Fahim, M. & Behdani, R. S. (2011).Critical Thinking Ability and Autonomy of Iranian EFL Learners. *American journal of scientific research. 29*. 59-72.

Fahim, M., Barjesteh, H. &Vaseghi.R. (2012).Effects of Critical Thinking Strategy Training on Male/Female EFL Learners' Reading Comprehension. *English language teaching* 5(1), 140-145.

Fielding, L., & Pearson, P. D. (1994). *Reading comprehension: What works? Educational Leadership*, 51(5), 62–67.

Gheith, G. A. (2007). Developing Critical Thinking for Children through EFL Learning. *World applied sciences journal.*17(10),1356-1364.

Grabe, W. (1991). Current Developments in Second Language Reading Research. *TESOL Quarterly*. 25 (3): 375-406.

Halvorsen, A. (2005). Incorporating Critical Thinking Skills Development into ESL/EFL Courses. *Internet TESL journal, 11*(3).

Hosseini, E. Khodaei, F. B., Sarfallah, S. & Dolatabadi, H. Z. (2012). Exploring the Relationship between Critical Thinking, Reading Comprehension and Reading Strategies of English University Students. *World Applied Science Journal* 17(10): 1356-1364.

Ido, L. & Jones B. F. (1991). *Educational value and cognitive instruction: Implication for reform.* New Jersey: The North Central Regional Educational Laboratory.

Khan, M. I. (2011).*Critical Thinking and Education in Pakistan.* Retrieved from http://mikhan7.blogspot.com/2011/04/critical-thinking-and-education-in.html on April 1, 2011.

Kurland, D. J. (2010). How the Language Really Works: The Fundamentals of Critical Reading and Effective Writing. Retrieved on December 14, 2011 from *http://www.criticalreading.com.*

Levy, D. A. (1997). *Tools of critical thinking: Metathoughts for psychology*. Boston: Allyn & Bacon.

Lipman, M. (2003).*Thinking in education.* West Nyack, NY, USA: Cambridge

University Press.
Moon, J. (2008). *Critical thinking of theory and practice*. UK: Library of Congress.
Paul, R. (2004). *Our concept of critical thinking*. Retrieved April 4, 2012, from http://criticalthinking.org/aboutCT/ourConceptCT.shtml
Rahman, Md. H. (2007). *An evaluation of the teaching of reading skills of English in Bangladesh*. A thesis submitted in partial fulfillment of the requirements for the degree of MA in English. Department of English University of Rajshahi, Rajshahi, Bangladesh.
Thadphoothon, J. (2002). *Enhancing critical thinking in language learning through computer-mediated collaborative learning: A preliminary investigation.* A paper Published in the Proceedings of the International Conference on Computers in Education. Dated 3-6 Dec.2002. Page(s)1490-1491, Vol 2.Print ISBN:0-7695-1509-6. INSPEC Accession Number:7685175
Veeravagu, J. Muthusamy, C. Marimuthu, R. & Michael, A. S. (2010).Using Bloom's Taxonomy to Gauge Students' Reading Comprehension Performance. *Canadian social science,* 6(3). 205-212.

**Appendix-A (Questionnaire)**

**Relationship between Critical thinking pedagogy and Critical Reading Proficiency**

Name (Optional): .....

**INTRODUCTION:** This questionnaire is meant for a research in English language teaching. Your cooperation is important for the study. The information you provide will be strictly confidential and used only for the purpose of this study. Below is presented a brief introduction to the nature of the research:

Critical thinking pedagogy means to teach students different types of critical thinking strategies which can be used when reading any text in English. The present study aims to assess if critical thinking instruction can improve students' reading comprehension ability.

**DIRECTIONS**: This questionnaire focuses to measure the extent to which critical thinking instruction is being provided to you as English language learners. Listed below are statements about what teachers might do when teaching reading comprehension skills to students. After reading each statement, mark the box that applies to your teachers when teaching reading comprehension skills.

| **No.** | | **Never** | **Rarely** | **Sometimes** | **Often** | **Always** |
|---|---|---|---|---|---|---|
| 1 | Your teacher asks you warm-up questions related to the text before reading. | | | | | |
| 2 | Yourteacher teaches you how to read a text with a set purpose in mind. | | | | | |

| | |
|---|---|
| 3 | Your teacher asks you to use your previous experience or background knowledge to understand a text. |
| 4 | Your teacher helps you to ask yourself questions about the text when you are reading. |
| 5 | Your teacher teaches you how to infer the unstated statement of the writer. |
| 6 | Your teacher teaches you how to survey (analyze) text organization. |
| 7 | Your teacher teaches you how to read the text closely to know the details (i.e. intensively). |
| 8 | Your teacher asks you knowledge based questions (i.e. who, what, where… questions, recalling dates, listing events, defining terms etc.) about the text you have read. |
| 9 | Your teacher asksyou comprehension check questions (i.e. stating ideas, explaining, interpreting, comparing, contrasting, summarizing etc.) after each reading. |
| 10 | Your teacher assigns you tasks to apply the textual information to some different given contexts. |
| 11 | Your teacher teaches you how to analyze the text (to identify causes, themes, motifs, relationships, to compare and contrast etc.). |
| 12 | Your teacher teaches you how to analyze attitude, mood, tone etc. of the author. |
| 13 | Your teacher helps you practice synthesis skills (compiling, recreating, and reorganizing the textual information in different forms and patterns). |
| 14 | Your teacher encourages you to evaluate the textual information (i.e. to prove, disprove, agree, disagree, criticize the author's point etc.). |
| 15 | Your teacher teachesyou how to answer textually explicit questions (whose answers can be located in the text directly |

'on the lines').

16 Your teacher teaches you how to answer textually implicit questions (whose answers can be located between the lines).

17 Your teacher teaches you how to answer scriptally implicit questions (whose answers can only be generated beyond the lines).

****Thank you for your cooperation****

**Appendix-B**

**CRITICAL READING TEST**

Name---------- Class and semester----------

Read the following passage and answer the questions given at the end:

1. All down the ages, many people have believed that Nature holds mysterious and mighty secrets. In the past they thought that if they could learn these secrets, they would gain all sorts of powers, either to benefit themselves, or to direct the lives of other people, for good or evil purposes. There has been a long history, then, of those who have claimed access to the mysteries of Nature. Magicians and witches, fortune-tellers and astrologers boasted that they could see a deeper meaning in the way the world operated. They said that the appearance of strange stars in the sky, the violent forces of earth-quakes and storms and the mysterious onset of plagues could all be attributed to the workings of Nature. They claimed that only they could understand them.
2. No doubt man's first acquaintance with these mysteries was through the animals around him. Curious hoof marks sometimes be seen in the lonely woodlands were thought to be belonging to some horrifying spirits. So, people began to make humble offerings of food and wine to animals in order to pacify these spirits. And what of those roarings and rumblings underground that often went before some violent earthquake. Was it some bull-like creature beneath the earth roaring and running wild? Let the powerful bulls above have special place, then, among the herds of animals, and let them be worshiped in ceremony and rituals. This is how the animals took the roles of gods in men's eyes and that ritual worship quickly developed. The animal-rituals were mostly violent to echo the violence that the gods could display. The animal worshippers dressed themselves in animal skins, hoping to assume some of the wild attributes of their gods. Many living creatures, even humans were torn apart at the climax of such rituals.

3. Moon-worshippers, however, tended to follow the gentler paths of worship. The learning of spells and magic formulae formed the core of their devotion, for they believed that the mysterious powers of nature could in this way be brought under some control, or at least persuaded to act in their favour. Women also played their part in worshipping moon-goddess by reciting spells and magic formulae. These, they believed, could bring rich harvest, divert storms and floods, and control the powers of wild, dangerous animals.
4. Later, the new religions emerged which sought to root out the ancient worship of Nature and its supernatural spirits. The female magicians were classed as 'witches', and to call a woman a witch was automatically to accuse her of sinful practices. They were suspected of bringing bad-health and harm to innocent people by calling devil-spirits through their magic spells. Therefore, the new religions started persecuting them.
5. In time, science began to provide psychological explanations for types of human behavior which had formerly been regarded as deeply suspicious. It also began to present geographical reasons for the rendings of earth, the violence of winds and the fury of waters. Witches, if they did exist, could be regarded as harmless cranks, and there was no longer any need for sorcerers or magicians in the age of science. Yet man still looks in wonder at the mighty forces of Nature; violent storms, floods and earthquakes make headline news across the world and somehow the plain scientific facts that lie behind them do not dispel our fear and awe of Nature's powers. The stars at night are not just part of some unending world outside; they can control and direct our lives, according to astrologers. Man, it seems, will always be fascinated by things supernatural, and will not give up his quest to find out more about the many mysteries that science cannot explain.

**QUESTIONS**
**SECTION 1: SPECIFIC PARAGRAPHS**

**From paragraph 1:**

**1.** What powers people in the past sought to gain by learning the secrets of nature?

_____
_____

**From paragraph 2:**

2. Strange hoof prints could sometimes be seen in the woodlands. What did people think about them?

_____
_____

3. Explain in your own words why, according to the passage, some primitive worshippers were dressed in animal skins?

_____

_____

**From paragraph 3:**

4. Explain in your own words the purpose of the spells and magic formulae in moon-worship.

_____

_____

_____

_____

**From paragraph 4:**

**5.** What was suspected about the female worshippers or magicians?

_____

_____

**From paragraph 5:**

6. Explain the two ways in which science has attempted to remove superstitious beliefs from men's minds.

_____

_____

In paragraph 5, what do these phrases refer to? i) The rending of earth, ii) the violence of winds, and iii) the fury of waters. Find answer in the same paragraph ahead.

_____

_____

**SECTION 2: OVERALL COMPREHENSION**

7. In the passage, the author has compared two styles of worship. Name them.

_____

_____

8. What conclusion does the author give to his argument on the mysteries of nature and the logics of science? Which one is more powerful according to him? State in your own words.

_____

_____

9. Has the author been logical in presenting the details of his argument? Yes or no? Support your stance.

_____

_____

_____

_____

10. "Man, it seems, will always be fascinated by things supernatural, and will not give up his quest to find out more about the many mysteries that science

cannot explain", says the author. Do you agree?

_____

_____

Having read the whole passage, what interpretation do you personally give to the natural disasters (i.e. floods and earthquakes) occurring in your own country? Scientific changes, religious aspects or the supernatural element? Argue.

_____

_____

11. Suggest a suitable title for the above passage.

_____

12. Summarize the passage in your own words. OR Make an outline.

_____

_____

_____

_____

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_____

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