The Performance of Male and Female Students of First Year Engineering in Reading Comprehension Tests

S. Sankarakumar, S. Chandrakanthi, Ph.D. and P. Malathy, Ph.D.
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Abstract

This research study was designed to assess the performance of male and female students on a reading test with regard to demands on the strategy use and the interaction of the text topic with gender in a formal testing environment. The participants were 140 (90 - male and 50 - female) first year students in the 17 – 19 age range studying Engineering at PSG College of Technology, Coimbatore, Tamil Nadu, South India.

After 20 hours instruction in reading skills during their course work "Communication Skills in English", the reading test was administered to the participants. The test material consists of two passages, both dealing with topics without gender bias. The questions based on these two passages were classified into three categories: Multiple Choice Questions (MCQ), Identifying True or False Statements (T/F), and Matching the Vocabulary (MV). The demanding nature of each question enabled the students to interact with the reading text using different strategies. The findings of the study suggest that males and females perform differently on different items. Significant differences in their performance on "Multiple Choice Questions" and "True or False Statements (T/F) were found for both the passages. Conversely, there were no significant differences in their performance on "Matching the Vocabulary items (MV)" for both the passages.   Further, the text topics, which were not gender-biased, did not have an effect on the performance. Nonetheless, the overall performance of male and female students of first year

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graduate engineers on the reading comprehension tests were significantly different, implying that the text topic did not influence the performance on the reading comprehension test. This research paper discusses the findings and suggests suitable classroom implications.

Keywords: Reading Comprehension, Reading strategies, Topic Familiarity, Reading Test Item type, Classroom instruction

Introduction

Assessing reading skills is steadily resuming into the status of a conundrum due to the pedagogical restrictions and implementation strategies imposed upon students. Reading ability is an important skill that enables the students to understand the nuances of the text and construct meaning by using the available resources from the text and from their past knowledge. These resources help the readers use lexis and syntax, recall the meanings from one's mental lexicon, make inferences, and employ schemata appropriately to the successful comprehension of the text (Donin et al, 2004; Fukkink et al, 2005). The students' level of mastery in text comprehension can be assessed by different measures. Some reading test items are multiple choice questions (MCQ), open-ended question, cloze (C-Test), true/false/not given (T/F/NG), fill-in-the-blanks, written recall, sentence completion, and matching the vocabulary activity (MV). These question-types can measure readers' ability to identify the main idea or topic sentence, guess meaning from the context, read for specific information, identify referential meaning, the tone of the reading passage, and make inferences, and the gist of the reading, write summaries, and many more. Based on the ability measured in each question, the reader adopts a special approach -- top-down, bottom-up, or both and Interactive approach. In other words, it is the test item that demands a reader to employ certain strategies in answering reading comprehension questions. For example, Anderson et al (1991) found that the test items affect examinees' responses and their interaction with the text. Some items require test-takers to reread parts of the passage, to process deep level comprehension, or to scan; while other test items merely need a surface level understanding of the passage. Test conditions also influence the way readers interact with the test. Phakiti (2003) stated that "in a high-stakes test situation" (p.656), learners may use different strategies from normal reading conditions and some strategies are specifically used in test-taking contexts.

A number of earlier research findings show that males and females use different strategies in language learning particularly in reading comprehension (Yazdanpanah, 2007; Abu-Rabia, 2004; Chavez, 2001; Sheorey, 1999; Kaylani, 1996; Oxford et al, 1996; Oxford et al, 1993; Bacon, 1992; Green, 1991; Ehrman & Oxford, 1989; Forent &Walter, 1989; Oxford & Nyikos, 1989; Burke, 1989). Oxford (1994), for example, stated that males tend to be more analytic, while females tend to be more global in their approach to language learning. Males adhere more to rules while females adhere more to cultural differences. Furthermore, males and females may use the same number of strategies in language learning but females are more skillful in applying these strategies qualitatively. Additionally, some researchers assert that males and females differ in their knowledge, interest, and experiences, hence, their performance on different reading topics can also differ (Brantmeier, 2003; Brantmeier, 2002; Schueller, 1999; Young & Oxford, 1997; Bügel and Buunk, 1996). The present study examined the performance of males and females on different reading comprehension questions in a formal reading

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assessment condition (at PSG College of Technology, Coimbatore, South India) with regard to reading texts.

Literature Survey

Schema Theory

Schema theory, which is closer to the top-down approaches to reading, has a greater impact on the reading process. Further, it gives perception into how the text and the reader's previous knowledge interact by often activating the information that is relevant to the problem to be solved (Rumelhart, 1983; Nassaji, 2002). Carrell and Eisterhold (1983) claimed that "… a text only provides directions for readers as to how they should retrieve or construct meaning from their own previously acquired knowledge (p.556)". Swaffer (1988) in her study identified that schema knowledge can be more influential in reading comprehension than word knowledge and also claimed that topic familiarity facilitates "language recognition", recall of concepts, and "inferential reasoning" (p. 126). Afflerbach (1986) proved that familiarity with the reading topic enhanced the reconstruction of the main idea. Brantmeier (2003) emphasized that topic familiarity can be an exceedingly significant factor in affecting L2 comprehension. According to Hudson (1982), reading problems in L2 is caused by activating the wrong schemata rather than not activating any schemata at all. In other words, comprehension of a reading text involves extracting information from the written message and the reader's schemata and matching them together. In the same line, Bransford et al, (1986) found that problems in reading comprehension can be attributed to the readers' not having the required background knowledge or schemata which leads to inability to fill in the missing gaps. Bügel and Buunk (1996) also claimed that schema theory can explain why text context can influence the sexes in giving different responses to different reading comprehension questions. Their justification is that since males and females have different interests, they read different topics which eventually results in having different schemata. Brantmeier (2004) contended that gender is an important element affecting schemata in the process of making meaning from the text. She therefore emphasized the need to carry out more studies on gender and reading topics.

Bottom-Up, Top-Down and Interactive Approaches

Understanding any reading material is achieved through the interaction of three different approaches: top-down, bottom-up and interactive. When a text is read, it is analyzed, that is, the raw visual data is used, rearranged and decisions are arrived at based on the raw data (bottom-up). Top-down processing, on the other hand, based on our expectations and anticipations, influences the processing of information by matching the identified data (from bottom-up) with the activated concepts in one's schemata (Jay, 2003). Bottom- up processing occurs when the reader and the writer do not share the same background knowledge, have different view points, and the reader is left confused. In such circumstances, the reader focuses on the words, syntax, and vocabulary to sort out the meaning of the text. Top-down processing occurs when the readers interpret the writer's intentions, draw inferences, try to understand the overall purpose of the text, and make predictions about what is to come in the next part of the passage. But comprehensive comprehension is gained when these two approaches—top-down and bottom-

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up—are combined (Nuttall, 1998).

Nuttall (1998) identified drawing inferences, understanding "the overall purpose of the text", and making "a reasoned guess" (p.16) as activities of top-down processing. She also noted understanding word meaning and sentence structure as examples of bottom-up processing. Bacon's (1992) classification of bottom-up processing included concentrating on "text-based aspects", attending to "known words", focusing on the "structure", segmenting "words and phrases", attending to every single word, and "linear processing". Top-down processing, conversely, involved attending to the topic, hypothesizing, using "schemata", making inferences, guessing "from context", avoiding translation, and "global processing" (p.165).

According to Grabe (1991), the term 'interactive approach' refers to two different conceptions. Firstly, it refers to the interaction that occurs between the reader and the text, whereby the reader constructs meaning based partly on the knowledge drawn from the text and partly from his/her past knowledge. Secondly, it refers to the interaction occurring simultaneously between many component skills that result in reading comprehension. Therefore, he asserted that from an interactive approach, the reading process is seen as involving "both an array of low-level rapid, automatic identification skills and an array of higher-level comprehension/interpretation skills" (p.383).

Experimental Studies

Cognitive studies

Cognitive differences among the male and female students have attracted the attention of several psychologists. The Studies on cognitive abilities of males and females have suggested that males are more spatial, whereas females are more verbal (Halpern & LaMay, 2000). Female students are able to surpass memory tasks, language use, reading comprehension, spelling, writing, arithmetic calculation, and the spatial location of objects while males tend to surpass verbal analogy tasks, mathematical word problems, and activities involving the recall of the geometric arrangement of an environment, or the mental rotation of two or three dimensional objects (Geary, 1998; Broone & Lu, 2000; Halpern & LaMay, 2000; Halpern, 2000; Hyde, 2005). However, these sex differences in task performance have been reported to be subtle (Hyde, 2005). Research also indicates that the brain structure of males and females is different with culture and sex hormone influences play an essential role in bringing out these dissimilarities. Nonetheless, cognitive similarities between males and females override the differences (Gurian, 2002).

Several studies reveal that the male and female students use different strategies when they perform complex cognitive activities. For example, when the students are required to compare two objects at different orientations, the male students first construct an image of one object in their minds and then mentally rotate the object to compare it with the other object. While in such activities, the females tend to compare the traits of spatial objects (Gallagher et al, 2002). Furthermore, the females are likely to give importance to geometric information, while males are likely to attend to landmarks in direction finding tasks (Saucer et al, 2003).

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Functional magnetic resonance imaging (fMRI) results in neuroscience show that males and females employ different mental resources or apply different strategies when carrying out cognitive tasks. The results of the research show that there is a significant difference in the activated areas in the brains of males and females in performing working memory tasks for language. In other words, males and females apply different strategies when completing the same language tasks. These differences become more significant while solving complex tasks in which a problem can be approached in different ways (Shaywitz et al, 1995; Speck et al, 2000).

Language Learning

In a study, Phakiti (2003) found that there are no significant differences between the reading performance of males and females and their cognitive and metacognitive strategy use in an L2 reading environment. Nevertheless, males reported using more metacognitive strategies in comparison to females; however, the difference was not significant. Zoubir-Shaw and Oxford (1995) looking at gender differences in L2 learning strategies, observed that males claimed "not knowing the meaning of a word" as an important factor in obstructing their mental processes; yet, females reported using "guessing meaning from context" more significantly than males. The conclusion drawn from the study was that males probably found L2 learning context less pleasant than females. Bacon (1992) examined the use of different strategies by the males and females while listening to authentic listening passages in Spanish. The male participants in the study reported using significantly more translation strategy (bottom-up processing) especially when listening to a more difficult text. Nonetheless, female participants reported using more inferential or guessing the meaning from context strategies (top-down processing). In another study by Ehrman and Oxford (1989), it was proved that females attempted to guess when there was lack of sufficient information. Examining self-reports of males and females on their attitudes, beliefs, strategies, and experience in language learning, Bacon and Finnemann (1992) reported that the females in the study utilized a significantly larger number of global/synthetic strategies than the males. On the contrary, the males utilized more decoding/analytic strategies than females. The general conclusion that can be drawn from these studies is that males attend more to words and apply a more bottom-up approach, while females favour guessing words from context and apply a more top-down approach in reading comprehension.

Schueller (1999) in a study examined the effect of top-down and bottom-up strategy instruction on males and females and found that females were superior to males in comprehending literary texts irrespective of strategic training. However, the males trained in utilizing top-down strategies outperformed their female counterparts only in the multiple-choice assessment task.

Bügel and Buunk (1996) conducted a study on schemata which indicated that the prior knowledge and topic familiarity were important factors among intermediate secondary-level Dutch students' performance. Females scored significantly higher than males on female topics such as "midwives, a sad story, marriage dilemma, and talks about style", whereas males scored significantly higher on male topics like "laser thermometer, volcanoes, motorcycles, cars, and football players". Another study found that males performed significantly higher than females on

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a neutral topic about "letting rooms to summer students" indicating that males have a higher level of text comprehension in comparison to females. Contrary to the findings of Bügel and Buunk's study, Young and Oxford (1997) gave English speaking men and women two Spanish texts and one English text on history, economics, and culture. The results showed no significant differences in the performance of males and females in the recall of the texts. Moreover, no significant difference with text topic and background knowledge related to topics existed. In another study investigating the effect of gender on passage content and comprehension of intermediate level students studying Spanish, Brantmeier (2002) used two reading passages (one on boxing and another on housewifery) in Spanish with advanced level students. The results of the study revealed that there was no significant difference in the performance of males and females on both texts. However, in another study using the same texts, Brantmeier (2003) found that intermediate level males outperformed their female counterparts on the "boxing match" passage while females outperformed males on the "frustrated housewife" passage. The results of the two studies led Brantmeier (2003) to conclude that the reader's gender does not interact with gender-oriented passage content in text comprehension at advanced levels.

The earlier studies provided inconsistent results on the effect of background knowledge (schemata) and the reading scores on different gender. Bügel & Buunk (1996) and Brantmeier (2003) found that the males perform better at male topics and the females better at female topics. Brantmeier (2002) and Young & Oxford (1997), on the other hand, found no difference between male and female performance on gender- biased texts. Schueller (1999) found females generally superior to males in comprehending literary texts. And this may be due to different research design methods implemented in these studies (Brantmeier, 2004). Furthermore, all the researches mentioned above were not carried out in a formal testing condition.

A comprehensive study conducted by the Educational Testing Service (ETS) reported that females were markedly superior to males in writing and language use but performed only slightly higher than males in reading and vocabulary reasoning tests (Cole, 1997). Data from American College Test (ACT) of 2001 also revealed that females scored higher than males in reading. However, the differences in mean scores of males and females were subtle (Zwick, 2002). A study was conducted by Lin & Wu (2003) to examine the performance difference at the item level of male and female Chinese university graduates on an English proficiency exam. The proficiency test called EPT, modeled after the TOEFL, contained listening comprehension, grammar and vocabulary, cloze test, and reading comprehension. T-tests revealed that females significantly outscored males in the listening comprehension section, while males performed significantly better than females in the cloze and grammar and vocabulary section of the test. However, the results combined together revealed no significant difference in the overall scores of both males and females. In addition, no significant difference was found in the performance of both genders on the reading comprehension section of the test. These explorations suggest that in a real testing condition on language abilities, females subtly surpass males on the reading comprehension section of the test. Nonetheless, these reports have not considered the interaction of gender with topic familiarity for the study.

Research Rationale

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No research has been conducted in an ESL / EFL testing related to gender (Lin & Wu, 2003). In an L2 reading context, test constructors must keep in mind the gender differences while designing reading comprehension tests so that one gender will not be biased over another (Alderson, 2000). According to Brantmeier (2004), gender needs to be considered as an essential element both in the process of L2 reading test design and in the analysis of its results. However, very little investigation has been conducted in this area. It should also be mentioned that the majority of researches on gender performance in reading comprehension have been carried out in low-stakes contexts. Testing conditions can extensively influence the performance of learners. Hence, there is a need for investigating the interaction of gender differences with L2 reading tests (Phakiti, 2003). The review of the literature on male and female strategy use and testing in reading comprehension also reveals that no study to this date has looked into the relationship between the strategy demands (top-down, bottom-up or both and interactive approaches) of reading test items and the performance of males and females.

Research Hypothesis and Queries

The present study was designed to find out the interaction of a reading comprehension test with gender in a testing environment and the performance of male and female students on reading test items in relation to the demands on their strategy use. The research questions are as follows:

1. Do male and female students perform differently on different items in a reading comprehension test?
2. Do male and female students' overall score on a reading comprehension test differ?

Informants

The 140 students, (90 = male and 50 = female), doing first year Bachelor of Engineering Degree programme at PSG College of Technology, Coimbatore, South India, were taken as samples for the study during their course work "Communication Skills in English". The participants ranged between 17 and 19 in terms of age (mean = 18). The students had received approximately 90 hours of instruction in English before taking the test and were from different socio, economical and cultural background. Majority of the students were from Tamil Nadu State through Single Window System of Admission Process namely Tamil Nadu Engineering Admissions, a small number from Kerala, Karnataka and Andhra Pradesh, Arunachal Pradesh States of India. However, the State wise Admission Quota factor was not taken into consideration. The institution provided a healthy environment for their education with special attention to cater to the language needs of the learners by developing their Spoken and written skills with the aim of preparing them for studying at their core departments such as Mechanical Engineering, Electrical and Electronics Engineering and Electrical and Electronics Engineering, in which the medium of instruction is English as it is officiated in the Educational Policies of the Government of India

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(NCEE, 2006). For this reason, the 90 hours of instruction at the graduation level was allocated to teach vocabulary, grammar, reading/listening comprehension, speaking, and writing skills.

Reading Samples and Plethora of Questions

Two reading comprehension passages with 40 questions (each passage with 20 questions) were given to the participants during their first semester Coursework on "Communication Skills in English". The first passage was on *Cloud formation*, the second was on *Noise Pollution*. According to Bügel and Buunk's (1996) classification, both the passages are neutral topics. It can be inferred that the reading test is not gender-biased. The questions on these passages tapped different information and each question required the students to interact with the reading passages in a different way. Some questions required the students to rely mainly on top-down processing and some on bottom-up processing and some others on both (parallel processing and interactive approaches). For each passage a variety of question-types—fill-in-the-blanks, multiple-choice, true/false—were considered and analyzed in this study. All the questions for the two passages were framed considering the use of strategy that would enable the students interact with the texts. These three categories, along with the number of items in each category, are given in Table I.

Table I Categories of Item types for passage 1 and 2

Item Type	Number of Questions
Multiple Choice Questions(MCQ)	10
Identifying True or False Statements (T/F)	20
Matching the Vocabulary (MV)	10

The process of passage selection and question preparation was completed in consultation with a team of experts in the Department of English. The testing passages were selected based on the relevance to the students and their understanding capacity during their first year engineering coursework. So, the topics selected were attractive and up to date. The item types used in the test were completely familiar to the students because the questions were framed based on their classroom practices. Further, the questions were similar to the test items used in first and second continuous assessment tests during their course work "Communication Skills in English".

Variables

Gender: The independent variable in this study was the gender of the participants. Among the 140 participants, 90 were males and 50 were females.

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Item Type: The first dependent variable was the grades of the participants on each of the three groups of items separately.

Overall Grade: The second dependent variable was the overall grades that males and females obtained in the reading comprehension test. As a result, three dependent variables were studied. Each correct response was graded 1 and each incorrect response was graded 0. No penalty was considered for the incorrect responses.

Methodology

At the end of the 90 hours of instruction, the students were given two separate tests on different days. In the first test, the students were examined on passage 1 and the reading comprehension abilities were measured. On a different day, they were tested on passage 2 and the scores were noted. For each test, the students were given a maximum of 50 minutes. The 140 students' correct and incorrect responses were tabulated on each of the 20 items onto the SPSS program (version 16). One way ANOVA was used to calculate the overall performance of males and females on the three different categories of test items. The test scores were compared in different ways such as between group of male and female students and within the group of male and female students.

Results and Analysis

Mean squares for each group of items are presented in Table II and III. Mean squares on "Identifying True or False Statements" and "Matching the Vocabulary" indicate differences between the group of male and female students and the difference between the performance of male and female students in Multiple Choice Question items was significant. In addition, the performance between male and female students for "Identifying True or False statements" for passage 1 was not significant, whereas for the passage 2 it was significant. However, Table II and III show that no significant difference was found for "Matching the Vocabulary" Test Items for both the passages.

Table II One way ANOVA statistical distribution between the performance of male and students for Passage 1

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ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Multiple choice Test A	Between Groups	.261	1	.261	.453	.502
	Within Groups	80.008	139	.576		
	Total	80.270	140			
True/False A	Between Groups	9.079	1	9.079	5.849	.017
	Within Groups	215.744	139	1.552		
	Total	224.823	140			
Matching the Vocabulary A	Between Groups	4.526	1	4.526	13.491	.000
	Within Groups	46.633	139	.335		
	Total	51.160	140			

$P < 0.05$

Table III. One way ANOVA statistical distribution between the performance of male and students for Passage 2

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Multiple choice Test B	Between Groups	.356	1	.356	.299	.585
	Within Groups	165.516	139	1.191		
	Total	165.872	140			
True/False B	Between Groups	1.843	1	1.843	2.124	.147
	Within Groups	120.583	139	.868		
	Total	122.426	140			
Matching the Vocabulary B	Between Groups	3.943	1	3.943	7.295	.008
	Within Groups	75.135	139	.541		
	Total	79.078	140			

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P<0.05

Research Question 1: Do males and females perform differently on different items in a reading comprehension test?

As predicted, the results of this study suggest that differences do exist in the performance of males and females on the different items. The "Multiple Choice Question (MCQ)" items tested the overall understanding of the reading and the use of different strategies at the passage level. This item required the students to comprehend the text by identifying appropriate choices from the whole reading passage using top-down approach. Significant differences were found between the male and female students' performance and within the group also. . The "Identifying True or False Statements (T/F)" items were designed to identify the general understanding of the passages and their involvement in prediction. The result shows that no significant difference was found for passage 1, whereas the significant difference was found for passage 2. The "Matching the Vocabulary (MV)" test items were designed to find out the test takers' use of vocabulary by merely identifying keywords in the paragraphs and matching them with their synonyms, in the form of phrases, from a list. The test scores show that the male and female students' performance was not significant between them in finding out the correct answer. The reason for their performance may be attributed to their level of background and exposure and medium of instruction at school level. Further, the results show that the performance of male and female students, if it may be within the group or between the group, there were significant differences found among them especially when they dealt with general understanding of the passage (top down approach) or focused on the linking words and phrases (bottom up approach) to select the correct responses or both the approaches interacting while handling multiple choice questions. The findings suggest that males surpass females in certain test items using different reading strategies. To sum up, significant difference lies while carrying out more complicated tasks. The male and female students show greater cognitive divergence while doing more complicated tasks than the basic ones (Shaywitz et al, 1995; Speck et al, 2000). However, from an L2 point of view, female students use reading strategies qualitatively compared to male students (Oxford 1993).

Research Question 2: Do males and females score differently on reading comprehension tests?

The results of the study justify that the performance of male and female students in different reading test items are significant especially in MCQ and Identifying True or False Statements. Moreover, the selection of the passages was not gender biased so that either gender would benefit in answering successfully in all the test items. Table II and III show that the performance between male and female students in Multiple Choice Questions was significant for both the passages at the significant level 0.502 and 0.585 respectively. The performance between male and female students in Identifying True or False Statements was not significant for the passage 1 and was significant for the passage 2. However, this difference was not significant for matching the Vocabulary test items for both the passages. It can be concluded that text topics did not affect the performance of both males and females in this study. These results support the findings of Young and Oxford (1997) and Brantmeier (2002) who claimed that text topic does

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not affect gender. Nevertheless, the results are contradictory to Bügel & Buunk's (1996) claim that text topic affects comprehension and that males may have a higher level of understanding.

The findings are also in agreement with Brantmeier's (2003) claim that gender interacts with L2 reading comprehension at the tertiary level. Further, the present study supports the investigations on the performance of male and female students by Lin & Wu (2003), Zwick (2002), and Cole (1997). As indicated in the literature study, these studies explored the performance of male and female students' reading comprehension tests, even it may be within the group or between the groups, irrespective of the text topics. However, it can be claimed from the result that, at the tertiary level, the performance of male and female students of first year engineering was significant in Multiple Choice Test Items and Identifying True or False Statements but there is no significant difference in their performance in "Matching the Vocabulary" test items.

Discussion

The present study confirms research findings in a Second Language learning environment that performance of male and female students in a reading comprehension test would create gender differences in their strategy use. However, the research suggests that these gender differences in reading comprehension tests are significantly affected by what is tested rather than the topics of the texts.

Reading is always an active process involving the three major approaches such as top-down, bottom-up, and interactive. This study suggests, similar to the Anderson et al. (1991) study, that the test items in a reading comprehension do affect the test takers' performance and their interaction with the text. Some items required the readers focusing mainly on a top-down approach, some on a bottom-up approach and some on interactive approach to reading. However, the findings of earlier studies conducted by Zoubir-Shaw and Oxford (1993), Ehrman and Oxford (1989) show that female students are more global and prefer guessing meaning from context, while male students tend to be more analytic. In other words, female students use more top-down approaches to reading, while male students use more bottom-up approaches while reading the texts.

The study also reveals that the significant differences between male and female students' performance in different test items although this difference was not significant in certain test items. The findings imply that the performances of different gender in verbal ability are fading due to the developing societies especially in the cognitive abilities and the effect of the changes on the attitudes of the newer generations. However, more research needs to be done since the focus of the research was not on nationality.

Though the male and female students show different interests and their use of different schemata, as claimed by Bügel and Buunk's (1996), the topics do not affect the performance of male and female students' reading comprehension tests. This may be the result of the fact that both the male and female students are exposed to different reading topics at their schools and tackle different issues in their daily life and this will reflect on their performance at the tertiary

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level. Furthermore, it can be claimed that it is not the topic that affects reading performance but it is the type of approach that the test takers follow while tackling certain test items. Hence, more research needs to be devoted to studying the effect of different test items on processing information by both males and females in reading comprehension tests.

Implications and Futuristic Perspectives

The present study addresses the issues related to the performance of male and female graduate students of first year engineering in reading comprehension tests and how different reading test items can influence their performance in a Second Language learning environment. Males and females perform differently on different test items of a reading comprehension. If teachers are known of these differences, they can help their learners of both sexes in different ways. By focusing on their learners' limitations, the teachers can provide successful learning situations. In this way, the differences in their performance do not upheld their achievement in reading tests but they can be handled effectively. The participants of this study attempted to word meanings and were more skillful in using contextual cues while reading the passages. So that no significant difference is found in their performance of "Matching the Vocabulary" test item. However, "… simply knowing the meanings of words or having a good knowledge of L2 grammar may not be enough. A fluent reader is one who is also able to process words and their relationships in texts as efficiently as required for fluent processing and understanding of text" (Nassaji, 2003: 271). One way to solve this problem is incorporating similar test patterns from their school curriculum to meet the challenges while undertaking the language tests such as TOEFL, IELTS, TOEIC, and GRE etc and the meaningful instruction of different reading strategies in an English as a Second Language environment through extensive reading. In this way, learners will develop greater skill in coordinating lexical and syntactic knowledge with their previous knowledge to comprehend the texts (Nassaji, 2003).

Moreover, the findings suggest that language learners, both male and female readers, need to be taught the skills of reading comprehension very effectively and their use of text knowledge and world knowledge be constantly monitored especially their real time language use (Morrison, 2004). When the students come to first year engineering graduate programme, induction training can be given about various reading strategies by working with them in small groups or individually using various reading comprehension passages and addressing to check students' understanding problems. Teaching the learners about various approaches to reading comprehension and test taking strategies, the teacher can assist them to take a more reflective and self-directed approach towards reading comprehension.

Suggestions for Further Studies

Since no single study mentioned in the literature review emphasized the learners attempt on all the question types and their strategy use in a real reading test taking environment, a more in-depth study is needed to explore the interaction of question-type, processing strategy, and the effect of gender on their reading performance. Significant difference in test-item performance of males and females does not guarantee that they use different strategies in a reading comprehension test. A detailed interview with the test takers of both male and female students is

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required to give more insight into their strategic use in a real world reading task which will help the researchers in the future to make solid conclusions.

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S. Sankarakumar
Research Scholar (PT)
Asst. Professor (Sr.Gr)
Department of English
PSG College of Technology
Coimbatore – 641004
Tamilnadu
India
sankareng@gmail.com

S.Chandrakanthi, Ph.D.
Associate Professor & Head (Retd.)
Department of English
PSG College of Technology
Coimbatore – 641 004
Tamilnadu
India
chandras214@yahoo.co.in

P. Malathy, Ph.D.
Assistant Professor (Sr.Gr.)
Department of Science and Humanities (English)
Kumaraguru College of Technology
Coimbatore – 641 049
Tamilnadu
India
visitmala@yahoo.com

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