EST Secondary School Reading Curriculum:  
The Preparation for Reading at Tertiary Level

Lubna Ali Mohammed  
Department of English  
Faculty of Major Languages Studies  
Universiti Sains Islam Malaysia (USIM), Malaysia  
luby_luda@yahoo.com

Harison Mohd Sidek  
Department of English  
Faculty of Major Languages Studies  
Universiti Sains Islam Malaysia (USIM), Malaysia  
harison@usim.edu.my

Abstract

Reading skill becomes the pioneer and the most vital skill at the tertiary level, it is the gateway to every academic achievement. This study analyses the Yemeni EST senior secondary reading curriculum to explore how well this curriculum prepares secondary school level students for reading content area subjects at the tertiary level. The data were collected through document review and classroom observation. The framework of this study was based on a revised model of Sidek (2010) of method analysis of the teaching of reading skill. The findings on the emphasis on reading skill and the level of cognitive demands of reading tasks indicated that reading skill is greatly and explicitly emphasized in the selected curriculum; however, the curriculum partially prepares secondary school students for tertiary reading in terms of the level of cognitive demands of reading tasks. Findings were discussed in terms of improving the effectiveness of EST senior secondary reading textbooks and classroom instruction on the students’ level of reading comprehension at higher education. Suggestions for EST curriculum revision were provided in the discussion section.

Keywords  EST senior secondary reading curriculum, cognitive demands, reading comprehension

INTRODUCTION

Reading is important for every personal development, social relationships, civic life and academic achievements (Holden, 2004). Through reading, people know about history, science, mathematics etc. Moreover, reading is essential to both academic and vocational success (Lesnick et al., 2010). Krashen claimed that reading is essential for learners to become good readers and spellers, to develop a good writing style and suitable vocabulary, and to improve grammar (Day, 1998). Therefore, it is assumed that learners who read in English will acquire and improve their English language better than other learners who don’t practice reading skill. For EFL learners, the more they practice reading skill and exposed to reading materials, the more they improve their language and improve their reading comprehension skill as well (Floris & Divina, 2009). As a consequence, it is very crucial for English language learners to have a perfect reading skill in order to comprehend the reading materials and to improve and acquire the language as well. Being proficient in reading skill, means; as a reader, being able to read and comprehend different types of written texts perfectly (Mahfoodh, 2007 as cited in Hassen, 2009).

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As the importance of reading skill in achieving educational and learning success and in providing a considerable amount of learning has been acknowledged, reading skill has been received incomparable status in the elementary schools because reading comprehension in this stage provides the basis for a considerable amount of learning in secondary school (Alvermann & Earle, 2003; Guthrie et al., 2004). Logically, the importance of reading skill has been acknowledged at the secondary school level as well because secondary school level is the gateway to tertiary education, where reading skill is the cornerstone of the students’ academic success (Carrell, 1988; Kavaliauskiene & Anusiene, 2010).

LITERATURE REVIEW

Reading in English in Yemen

Previous research showed that the most dominant language in both academic and professional contexts of the engineering studies is English language (Basturkmen, 1998; Hui, 2007; Pendergrass et al., 2001; Pritchard & Nasr, 2004; Venkatraman & Prema, 2007). Therefore, many students choose to study English for their degree because they recognize the instrumental feature of English mainly in finding high status and well-paid jobs (Nofal, 2011). Due to the important role of English all over the world, English language teaching and learning has been vividly increased (Hassen, 2009). As Yemen is still a developing country, such orientation into improving the quality of English teaching and learning will assist in building up the international relationships and communication networks in the world. Recently, reading in English has been received an extensive importance in Yemen (Almahedi, 2008). English language is taught in preparatory and secondary schools in Yemen in order to train the Yemeni learners to be good readers able to read and comprehend the information in the printed materials and to provide learners with the basis of scientific educational language they will need at the content based areas at the university level as well as to meet the requirements of efficient reading skill (Al-Shamiry, 2005; Al-Zubeiry, 2004; Al-Mekhlafi, 1999).

The English language is very crucial at the tertiary level as well. Faculties of education in Yemen teach English as a compulsory subject. While faculties of medicine and Engineering employ English extensively as a language of instruction because in these faculties the majority of the materials taught are designed for native English speakers (Abdullah & Patil, 2012). Thus, the students must be skilled in both English language and content areas simultaneously in order to succeed in their studies (Huang, 2006). Success at the tertiary level is based on mastering some essential academic skills (Tinto, 1993) which reading skill is on their top. Reading skill is fundamental at tertiary level because learners need to be able to read and comprehend information from different types of texts were mainly written for native speakers of English. Learners at the faculty of medicine, Sana’a University, Yemen, stated that reading skill is the most important skill for their academic studies (Taya’a, 1996). However, at the content based areas, no attention is prearranged to improve or polish efficient reading skill of learners (Bean, 1996) as it is expected for reading skill to be already acquired during the secondary level of education (Erickson et al., 2006).

The truth is that in spite of the increased interest in teaching and learning English at all levels of education in Yemen from one hand and the importance of reading skill for learners’ academic success from the other hand, Yemeni learners still have many challenges in reading in English at content based areas (Alwalss, 2000; Azzan, 2001; Al-Mekhlafi, 1995; Yar Mohamed, 1992; as cited in Al-Tamimi, 2006).

Reading problems in Yemen

Past studies found that Yemeni learners at the secondary and university level encounter serious reading problems in English (Azzan, 2001; Alwalss, 2000; Bel-Fagih, 1999; Bamataf, 1997; Al-Mekhlafi, 1995; Yar Mohamed, 1992 as cited in Al-Tamimi, 2006; Balfakeh, 2009; Almahedi, 2008; Albadri, 2001). Those problems were classified as teaching materials-related problems (Al-Fatimi, 2009; Al-Mansoori, 2008; Al-Refa‘ai, 2001), problems due to shortage in reading instructional methods at secondary level (Azzan, 2001 cited in Al-Tamimi, 2006; Abdullah & Patil, 2012) or due to the absence of extensive reading comprehension strategy (Almahedi, 2008). At the university level, many reading comprehension problems
were found among the first-year medical students, Aden University, Yemen (Albadri, 2011). Hence, he suggested patterns of reading lessons for improving the medical students’ reading skills. Similar problems were found by Yar (1992), who analysed the reading problems faced by 100 tertiary level Yemeni students in faculties of education and engineering. As well as, Al-Mekhlafi (1995) who investigated the reading comprehension problems in the English language among students of English at Sana’a University, Yemen. Furthermore, Alwalss (2000) investigated the reading comprehension skills among 126 Yemeni students at Faculty of Arts and Education, Sana’a University.

The fact is that students at tertiary level have learned and acquired reading skills different from the reading skills that they need for academic level; reading demands at the tertiary level critically varies from reading at secondary school level (Hermida, 2009). Therefore, most tertiary level students apply the reading skills that were learnt at secondary school level to read academic texts, which results in reading comprehension problems. One of the differences between tertiary level reading and secondary school level reading is the levels of cognitive skills needed to comprehend reading tasks. According to Marzano’s (2000) and Marzano et al.’s (1988) taxonomy, two levels of cognitive processes are utilized in line with the task’s cognitive demand; higher-level and lower-level of cognitive demand.

**High and low level of cognitive demand**

The level of cognitive demand of the reading tasks has been investigated in previous studies (Biswal et al., 2010; Chun, 1997; Gao, 2006; Leslie, 1976) as reading comprehension tasks at different levels require different levels of cognitive demands. Higher-level cognitive demand tasks require skills such as organizing, applying, analysing, synthesizing, generating, summarizing and evaluating information. This level requires the students to apply the deep approach to reading in which the learners focus on the author’s message trying to analyse and make connections between the information in texts to what they have known before and utilize their understanding for problem-solving in other new contexts (Hermida, 2009). On the other hand, lower-level cognitive demand tasks require skills such as focusing, recalling information and information gathering skills. This level requires the students to apply the surface approach to reading in which the learners accept the information written clearly in the texts, they do not make any connections between the information in texts and other information in another context (Hermida, 2009). Such this level of cognitive demand doesn’t promote understanding; instead, it promotes memorizing and short-term retention of information.

In the content area, reading tasks have been shown to be a critical issue and require a high level of reading comprehension skill (Anderson & Pearson, 1984). To achieve a satisfied level of reading comprehension, learners need to be trained with the appropriate level of reading skills at secondary school level so that they will be able to process information while reading at the tertiary level (Moore et al., 1999). In other words, equipping learners at secondary school level with the essential cognitive skills is considered vital for their success at tertiary level (Crano & Johnson, 1991) because learners who were already trained on tasks with higher-level of cognitive demand will be able to process academic language tasks efficiently (Dutro & Moran, 2003). Since secondary school level is considered as the gateway to higher education, all secondary school curricula have to endeavour to train students on a higher level of cognitive skills so that they will be able to pursue their higher studies in content area successfully. Moreover, it is needed to improve the students’ ability to process information using both higher and lower order cognitive skills (Sidek, 2010). Thus, this study aims at finding out how well the Yemeni EST senior secondary reading curriculum prepares students for reading at the tertiary level. Therefore, this study analyses the emphasis of reading skill as explicit skill as well as the level of cognitive demand of reading tasks in the selected curriculum documents and classroom instruction.

**Problem statement**

Reading skill is crucial for learners’ academic success; however, learners still have many challenges in reading in English at content based areas in Yemen (Alwalss, 2000; Azzan, 2001; Al-Mekhlafi, 1995; Yar Mohamed, 1992; as cited in Al-Tamimi, 2006; Almahedi, 2008). As was mentioned in Hassen (2009), recent
researches (e.g., Al-amri, 2007; Mahfoodh, 2007; Al-Shamiry, 2002) have examined and analysed general English language curriculum of high school in Yemen for all language skills to find out the reasons behind English teaching and learning problems in secondary school level in general. However, to the best of the researchers’ knowledge, far too little attention has been paid to examine English for specific purposes reading curriculum, particularly English for Science and Technology (hereafter EST) for the senior level of secondary school. In addition, no research has examined EST reading curriculum for the senior level of secondary school in relation to how this curriculum prepares the Yemeni students for reading in English at the tertiary level. Thus, analysing the EST senior secondary school reading curriculum is necessary to improve the reading comprehension skill among the Yemeni learners in their secondary level, because the secondary level is the cornerstone in which students step on to move to higher education and has a direct impact, either positive or negative (Abdullah & Patil, 2012). Consequently, the cognitive demand level of reading tasks in the Yemeni EST senior secondary school course book, workbook and classroom practices were analysed to find out whether the cognitive demands of the reading tasks in the selected curriculum match the required level of reading tasks at the tertiary level.

METHODOLOGY

This explorative case study aims at exploring how well EST reading curriculum for the senior level of secondary school prepares the Yemeni secondary school students for reading at the tertiary level of education. This study aims to answer the following research questions:

1. How explicitly is the reading skill used to achieve the learning outcomes in the Yemeni EST senior secondary school curriculum documents?
2. What level of cognitive demand of reading tasks is reflected in the Yemeni EST senior secondary school curriculum documents and classroom instruction?

The theoretical framework of analysing reading skill and the level of cognitive demands of reading tasks in the Yemeni EST senior secondary school reading curriculum in the present study was based on a revised model of Sidek (2010) of teaching and learning, which is a revised model of Richards and Rodgers (2001). This model intends to analyse language teaching in terms of three structural levels; Approach (refers to the language theories and instructional approaches), Design (refers to the content of the teaching materials), and Procedure (refers to teaching instructional practices in the classroom). However, this study did not use the entire original framework of this model; only elements at the design and the procedure levels were applicable to the current study. The approach level was excluded because the current study does not examine SLA theories and instructional approaches.

Data Collection and Data Analysis

Hassen (2009) examined the entire materials of English language teaching in order to analyse the curriculum. Following Hassen (2009), this study examined EST course book, EST workbook and EST reading classroom instruction for the senior level of secondary school in Yemen. The data were collected via reviewing the course book and the workbook and observing 16 EST reading classroom instructions in 8 secondary schools in Yemen. EST coursebook, EST workbook, observation sheets and Sony Walkman Recorder were used as instruments for collecting the data. Details of data collection and data analysis for each Research Question (RQ) are explained below:

RQ1: The emphasis of reading in the Yemeni EST senior secondary school curriculum documents

The data to answer this RQ were collected from EST course book and workbook. In order to analyse the degree of emphasis on reading skill in the selected documents of the EST senior secondary curriculum compared to other skills, the following procedures were conducted:
1. Extracting all reading, writing, listening and speaking related statements (tasks) in the EST course book and workbook.
2. Counting the frequency and calculating the percentage of English language tasks for each skill.
3. Coding the reading tasks elicited from the EST course book and workbook as explicit or implicit tasks. For example, a statement like “Read the description of people and fill in the table” was coded as an explicit reading task; while a statement like “Read the job advertisement. Then, write a business letter” was coded as an implicit reading task for writing objective.
4. Counting the frequency and calculating the percentage of the explicit reading statements as reflected in the selected documents compared to the implicit ones.

RQ2: The level of cognitive demands of the reading tasks as reflected in the Yemeni EST senior secondary school reading curriculum documents and classroom instruction

The required data to answer this RQ were collected from the EST course book, EST workbook and EST reading classroom instruction. The combination of Marzano et al.’s (1988) Core Thinking Skills taxonomy (Marzano et al., 1988) and Marzano’s Cognitive System taxonomy (Marzano, 2000) were used to find out the level of the cognitive demands of reading tasks. The combination of these taxonomies was used because Marzano’s taxonomy of thinking skills combines a wide range of thinking skills (incorporated in Self-System, the Metacognitive System, and the Cognitive System), and also presents how the students think. A Combination of Marzano et al.’s (1988) and Marzano’s (2000) Core Thinking Skills Taxonomy as categorized by Sidek’s (2010) include: 1) focusing 2) information-gathering and 3) recalling/remembering as the low level cognitive skills and 1) organizing 2) applying 3) analysing 4) synthesizing 5) generating 6) integrating and 7) evaluating as the high level cognitive skills.

Procedures of Classroom Observation

Previous studies that conducted classroom observation show that the number of observations is arbitrary (Dumessa, 2002; Rahim, 2014; Salahuddin et al., 2013). For this study, a total of 16 observations were made in secondary schools in the south of Yemen. The 16 EST senior reading classrooms were observed and tape-recorded with teachers’ informed consent. Then, each reading classroom instruction was transcribed verbatim. A list of reading-related statements was elicited from the transcriptions and was coded in terms of the two levels of cognitive demands.

Procedures of Reviewing EST Curriculum Documents

A list of reading related statements was elicited from the course book and workbook and then was coded based on the two research questions of the current study. Statements that are related to writing, listening and speaking skills were also collected in order to analyse the frequency of reading skill compared to other language skills in EST curriculum. Then, reading related statements were coded as explicit or implicit reading statements. For the purpose of the second research question, reading related statements were coded in terms of the two levels of cognitive demands.
FINDINGS AND DISCUSSION

RQ1: The emphasis of reading in the Yemeni EST senior secondary school curriculum documents

The findings of this research question are presented in Tables 1 and 2 below:

Table 1 Analysis of EST Skills in the EST Senior Secondary School Curriculum

<table>
<thead>
<tr>
<th>Skills/Documents</th>
<th>EST Coursebook (165 Statements)</th>
<th>EST Workbook (579 Statements)</th>
<th>Overall (744 Statements)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Implicit Statements</td>
<td>Explicit Statements</td>
</tr>
<tr>
<td></td>
<td>82 Statements</td>
<td>393 Statements</td>
<td>Frequency</td>
</tr>
<tr>
<td></td>
<td>22 Statements</td>
<td>116 Statements</td>
<td>43 Statements</td>
</tr>
<tr>
<td></td>
<td>9 Statements</td>
<td>146 Statements</td>
<td>52 Statements</td>
</tr>
<tr>
<td></td>
<td>52 Statements</td>
<td></td>
<td>39 Statements</td>
</tr>
<tr>
<td>Percentages</td>
<td>50</td>
<td>54</td>
<td>53</td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>16</td>
<td>15</td>
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<td></td>
<td>5</td>
<td>24</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>32</td>
<td>6</td>
<td>12</td>
</tr>
</tbody>
</table>

Table 1 shows that reading skill was the most frequently reflected skill (53%) in the EST senior secondary school reading curriculum while speaking skill was the less frequently used skill with a percentage of 12% followed by the writing skill (15%) and then the listening skill (20%). In terms of the EST course book, reading skill was highly presented (50%) compared to other skills. Similarly, reading skill was frequently emerged in the EST workbook (54%) more than other skills.

Table 2 Analysis of EST Reading Skill in the EST Senior Secondary School Curriculum

<table>
<thead>
<tr>
<th>Documents</th>
<th>Explicit Statements</th>
<th>Implicit Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>EST Course Book (82 Statements)</td>
<td>Frequency</td>
<td>43 Statements</td>
</tr>
<tr>
<td></td>
<td>Percentages</td>
<td>52</td>
</tr>
<tr>
<td>EST Workbook (311 Statements)</td>
<td>Frequency</td>
<td>205 Statements</td>
</tr>
<tr>
<td></td>
<td>Percentages</td>
<td>66</td>
</tr>
<tr>
<td>Overall (393 Statements)</td>
<td>Frequency</td>
<td>248 Statements</td>
</tr>
<tr>
<td></td>
<td>Percentages</td>
<td>63</td>
</tr>
</tbody>
</table>

Table 2 demonstrates that reading skill was used explicitly as the main and primarily skill of EST curriculum to achieve the listed learning outcomes in the EST course book and workbook. Reading skill was frequently used as an explicit language skill in both EST course book (66%) and workbook (52%). In general, reading skill was frequently used as an explicit means in the EST curriculum (63%) to achieve the listed learning outcomes.

In order to prepare EST learners for reading at the tertiary level, reading skill should be effectively emphasized as an explicit skill throughout the EST curriculum as a means to achieve the listed learning outcomes in the curriculum; and actually, the findings of the emphasis on English language reading as the means to achieve the listed learning outcomes in the EST course book and workbook demonstrate that reading skill was more significantly emphasised than all other English language skills. Such findings
suggest that reading skill is the most essential skill in the Yemeni EFL senior secondary curriculum, which denotes that the Yemeni Ministry of Education (MoE) realizes the importance of reading skill as the central gate to every personal development (Almahedi, 2008; Holden, 2004) and the essential and the pioneer skill for academic success (Lesnick et al., 2010; Kavaliauskienë & Anusienė, 2010; Carrell, 1988). Reflecting reading skill explicitly more than other English language skills in the EST senior secondary school curriculum to achieve the listed learning outcomes in the curriculum do not necessarily mean that the curriculum fully prepares the Yemeni EST learners to read successfully in their academic areas at the university level. Other variables in the EST senior secondary school reading curriculum such as the level of cognitive demands is among the determinants of whether the Yemeni EST senior secondary school reading curriculum fulfils its aims and objectives in preparing EST students to read effectively in English at the university level.

RQ2: The level of cognitive demand of reading tasks as reflected in the Yemeni EST senior secondary school curriculum documents and classroom instruction

The results of analysing this research question are presented below in Table 3.

<table>
<thead>
<tr>
<th>level of Cognitive Demands</th>
<th>Documents</th>
<th>Low Level</th>
<th>High Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Findings in EST Curriculum</td>
<td>Frequency</td>
<td>398 Statements</td>
<td>258 Statements</td>
</tr>
<tr>
<td>Percentages</td>
<td>61</td>
<td>39</td>
<td></td>
</tr>
</tbody>
</table>

Table 3 shows that the reading tasks in the Yemeni EST senior secondary school reading curriculum and classroom instruction are primarily designed on the low level of cognitive demands more than the high level. A significant emphasis seems to be placed on reading tasks that require students to apply low level (61%) of cognitive skills such as recall text information, focus on specific information in text and information gathering. Based on Marzano et al.’s (1988) core cognitive skills, by emphasizing the low level of cognitive skills, the curriculum does not train the learners in acquiring the high level of cognitive skills. The high level of cognitive skills such as identifying details, identifying main ideas and drawing inferences are symbolised in cognitive processes such as synthesizing, analysing and evaluating while the recall and focus on specific information skills fall into processing texts through grammar, vocabulary and text structure.

The EST senior secondary school reading curriculum reflects (39%) reading tasks that require students to apply high reading cognitive skill. The incorporation of high cognitive reading tasks in the selected curriculum was in a considerably low amount compared to the low-level tasks. However, allocating the high level of cognitive demand, as it is found in the current study, suggests that the EST senior secondary school reading curriculum in small portion emphasises on the learners’ cognitive needs at the tertiary level. The high emphasis on EST reading tasks with a low level of cognitive demands in the EST senior secondary school reading curriculum contributes to the reading comprehension challenges that encounter the Yemeni EST learners at the tertiary level. Thus, EST senior secondary school learners should be trained to process reading tasks that require a high cognitive level in order to improve their cognitive abilities in processing reading tasks of higher levels of cognitive demands. The deficiency in preparing secondary school learners in Yemen via training them to process tasks with high level of cognitive demands is in line with the findings of past studies (Rahim, 2014; Sidek, 2010; Astika, 2004).

The highly incorporating of the low cognitive demands evidence that the EST senior secondary reading curriculum partially prepares secondary students for reading comprehension at tertiary level, which mainly incorporate reading tasks that need properly high level of cognitive skills. Such findings suggest that EST reading curriculum designers might be unaware of the learners’ needs to be trained and prepared for their reading at tertiary level (Hassen, 2009) in terms of processing reading tasks that require a high level
of cognitive demand. If the Yemeni EST curriculum is designed to train students to meet high cognitive demand reading tasks such as analysing and evaluating, the curriculum will be able to prepare students for successful reading in English in the academic areas at the tertiary level. It is important to equip and polish the learners’ essential cognitive skills at the secondary school level in order to ensure their academic success at the tertiary level (Crano & Johnson, 1991).

Academic reading materials are relatively difficult and commonly require a high level of cognitive demands reading tasks (Alderson, 2000; Urquhart & Weir, 1998). Efficient reading requires the readers to manage high cognitive demands reading tasks such as making predictions and hypothesis about the text content and examine their predictions (Ozek & Civelek, 2006). Dutro and Moran (2003) stated that equipping the learners with reading tasks requiring a high level of cognitive demands will prepare them to process academic language tasks efficiently. Therefore, it is essential to train learners to critically analyse reading texts for their academic success (Ghalandari & Talebinejad, 2012).

CONCLUSION AND RECOMMENDATION

This paper aimed at exploring how well the EST senior secondary school reading curriculum prepares students for reading in the content area at the tertiary level. The findings show that however reading skill is greatly and explicitly emphasized in the selected curriculum, the curriculum does not fully prepare secondary school students for tertiary reading in terms of the level of cognitive demands of reading tasks required at the tertiary level. Based on the findings of the current study, it is recommended that the curriculum designers ensure that the curriculum fully prepares the EST secondary school students for reading in English in their content areas at the tertiary level. As such, the current EST senior secondary school reading curriculum should be revised. Reading tasks that require a high level of cognitive demands should be of great emphasis in the EST reading curriculum and classroom instruction. The Yemeni EST secondary school reading curriculum should incorporate a significantly high amount of reading tasks of various high cognitive demands in order to equip EST students with the ability to overcome reading challenges via the efficient processing of reading tasks of various cognitive demands in English at the university level (Sidek, 2010; Astika, 2004). With the proposed revisions in the EST senior secondary school reading curriculum, the goal of the curriculum to prepare secondary school students for EST reading at the university level could be materialized.

REFERENCES


