

Knowledge, Skills, and Attitudes toward Reading English Technical Materials among Students in Selected Technical Secondary Schools

**Muhammad Putra Adha, Ahmad M. Syarif*
Ummul Aiman High School, Aceh, Indonesia

**Corresponding author: muhammadadha053@gmail.com*

ABSTRACT

The purpose of this study was to examine the secondary technical school students' knowledge, skills, and attitudes toward reading English technical materials. This case study was conducted on a sample of 120 students who had been randomly selected from several Technical schools in the state of Perak, Malaysia. The instrument used in this study was a set of questionnaires. Descriptive statistics such as frequencies, percentages, means, and standard deviations were employed to analyze the empirical data. The main result showed that the level of reading English technical materials in terms of knowledge and skills was moderate. The empirical data also indicated that the about 60% of the respondents spoke mother tongue at home but 40% of the respondents claimed they used mixed languages at home. In terms of reading skills, the respondents were slightly agreed ($M=3.69$; $SD=0.96$) that they possessed the reading skills. They claimed that they were good ($M= 4.25$; $SD= 0.89$) at “visualizing” what they were reading but poor ($M=3.18$; $SD=0.96$) at guessing the meanings of the unfamiliar words that they encountered. With regard to the reading purposes, they concurred ($M=4.30$; $SD=0.86$) that they read for self-development but did not see reading ($M=2.77$; $SD=1.06$) as way to improve their writing skills. In the context of reading interests, they asserted ($M=4.30$; $SD=0.86$) that reading technical materials and resources could enhance their knowledge. But they were unsure ($M=2.67$; $SD=1.17$) with the statement that they only focused on English reading. Finally, the empirical data on the reading preferences indicated the respondents preferred ($M=4.08$; $SD=1.08$) doing reading tasks using computer or digital devices. They, however, seldom ($M=2.24$; $SD=1.17$) read religious book in English. In conclusion, the main findings showed that secondary technical schools students in Perak believed that they possessed competence to read English technical materials but they were weak in writing and reading certain types of reading materials. This implies that the English curriculum for technical and vocational institutions needs further improvement in especially in reading contents, reading coaching, reading activities, teaching methods, and teaching-learning facilities. Digital devices to enhance reading competency should be used.

Keywords: Reading, knowledge, skills, attitude, English technical materials

INTRODUCTION

English has been widely acknowledged as an international language. According to Bruthiaux (2002: 415), “English has all the key characteristics that make it likely to remain the dominant worldwide language.” The importance of the English language has been established universally as a tool for social, economic, and career success. As a result, a number of non-English speaking countries have fortified English language programs to enhance the English proficiency among their students (Pennycook, 1994; Tollefson, 1995). For example, in Hong Kong, the shift from English to Chinese language instruction was rejected by the stakeholders such as parents, because English continued to be seen as the language of economic opulence (Tsui et al., 1999).

English is a mandatory subject in Malaysian schools and formally offered as the second language for students in primary to secondary school levels. English is a means of communication in varied activities and transactions. It is an important language to enable Malaysians to engage

meaningfully in local and international trade and commerce. It also provides an additional means of access to academic, professional, and recreational materials (Ministry of Education, 2002). English has also been used extensively in education, administration, media, and trade. Even in public sector in Malaysia, to become a public servant in certain occupations – a candidate should possess a passing grade in English.

As a developing country, Malaysia has to compete with other countries economically in order to survive in a globalized world. Hence, it is necessary for Malaysians to be competent in English – the dominant global language. Fortunately, English is taught as a subject from year-one in all national primary schools and year-three in Chinese and Tamil primary schools. English is also taught at secondary and post-secondary levels. Excluding preschool level, the minimum formal learning of English language for Malaysian learners is eleven years (Darmi & Albion, 2013). At tertiary level, English can be used as a medium of instruction, especially in private higher education institutions in order to attract foreign students. According to Too (2017), the liberalization of higher education industry since 1996 was based on the Education Act 1996 (2002) which aimed at making Malaysia as an regional education hub. The open-door policy has witnessed a resurgence role of the English language in higher education institutions. This Act allowed higher education institutions to use English language as the medium of instruction to attract international students to study in Malaysia. In addition, in the Malaysian Education Blueprint 2015-2025 (Higher Education), the prominent role of English language was emphasized in all Malaysian tertiary institutions (Ministry of Higher Education, 2015). The Blueprint has stressed the need for all university students in Malaysia to be proficient in the national language and English and it has also stated that students should learn one additional global language. In other words, English language has been an integral part of the education system in Malaysia and it is closely linked to the role of English in educational, social and economic development of the country (Gaudart, 1987; Ridge, 2004; Too, 2017). Thus, it is critical to develop English communication skills among students.

In the context of communicative competence, reading is a critical component. Reading is a basic skill that is closely related to other skills such as listening, speaking and writing (Hidayati, 2018). In general, students are required to read and understand the English reading materials in order to achieve better results in their learning process. A number of research has been conducted about reading non-technical English reading materials but very few studies have been detected with regard to measuring the reading competence of non-native English speakers on reading technical materials in English.

In Malaysia, Technical secondary schools are a type of educational institution offering technical and vocational subjects that had been introduced by the British since 1926 to train local youths as technicians (Mustapha, 1999; 2017). Since the 1980s, living skills (*Kemahiran Hidup*) subject had been introduced in Malaysian schools in both primary and junior secondary levels. It was also known as pre-vocational subject that covers various aspects of manipulative skills. At secondary level (Form 4 and Form 5), those who choose technical stream can enter a technical or vocational school. The technical and vocational schools offer the same core subjects as normal academic schools, including languages, mathematics, and sciences, but in addition, students are required to take selected technical and vocational subjects (Ministry of Education, 2010). In 2012, vocational schools were upgraded to vocational colleges.

The teaching of English for Specific Purposes (ESP) had flourished in the 1950s and 1960s. Hence, ESP gained popularity and became a vital and innovative program for the teaching of English specifically to prepare students for work in technical fields. Notwithstanding of its infancy, ESP has dominated the teaching of English especially for technical and engineering students. In the Malaysian polytechnic education system, English for Technical Purposes (ETP) is taught for three (3) semesters for certificate level and five (5) semesters at diploma level. The ETP course content was designed to prepare students with fundamentals technical skills in information processing, reading technical manuals, oral communication, report writing, job interview, and project presentation. Completing these ETP courses were also a pre-requisite for polytechnic students before embarking on a mandatory one-semester industrial attachment in related industries. Empirical data regarding Malaysian polytechnic graduates through the Graduate Tracer Studies (2004 to 2008) confirmed the concern expressed by the employers that the graduates had poor competency to converse and write in English. Responses from the open-ended questions obtained from the graduates on the quality of teaching and learning in the

polytechnics indicated their disappointment with the teaching of English in polytechnics (Yasin et al., 2010).

The English language competency issues have raised concerns in Malaysia. The issue of poor English proficiency among students regained the attention of language policymakers in Malaysia in the 1990s. In the context of language competence, Brown (2004) defined competency as an ability, expertise, or proficiency in a domain. It implied a high level of skill or a well-developed knowledge or a polished performance. Tsui and Tollefson (2006) have highlighted the importance of English proficiency as the “global literacy skill,” which has become a commodity for communication (Crystal, 2003). Communication in terms of language skills includes listening, reading, speaking and writing. For students who are learning English as a second language in a vocational context, especially in Malaysian technical schools or vocational colleges, reading English materials is extremely important because most of the target technical knowledge input is obtained through the channel of reading.

One of the language skills that must be learned by a student is reading. Reading is considered a necessary skill because of its essential role in facilitating learners to master a subject matter. Reading is a complex cognitive process of decoding symbols for the intention of deriving meaning (reading comprehension) and constructing meaning. Reading is a means of language acquisition, of communication, and of sharing information and ideas. Reading is a complex interaction between the texts and the reader, which is shaped by the reader’s prior knowledge, experience, attitude, and language competency, which is culturally and socially situated. The reading process requires practice, development, and refinement.

While reading skill is a “door” for getting information, reading knowledge become a key for knowing the meaning of a text and opening the reader’s mind. Background knowledge plays an important role in understanding a text. Readers comprehend the texts better when they are able to relate to the text as it is culturally familiar. When the text is culturally unfamiliar, it is important for teachers to activate background knowledge of the learners by the use of text previewing, which can be in the form of pre-reading activities leading learners toward a better understanding of background knowledge.

Besides reading skill, reading attitude toward the reading materials is also pertinent. Reading attitude could include interest, preference, and habit in choosing reading materials. Hence, reading attitude is highly connected to reading interest (Khairuddin, 2013). Hence, reading attitude is key for reinforcing reading skill. Reading attitude is an integral part of the development of lifelong reading skill. Having a positive attitude toward reading is one of the most important psychological concepts in learning. A positive attitude toward reading determines the success of any instruction, so it is crucial for instructors to engage, maintain, and rekindle learners' positive attitude toward reading. Positive reading attitude may affect the learners' academic achievement based on the amount of time that they spent on reading. Whether learners read or not is largely determined by their attitudes toward reading. If learners do not like to read and perceive reading as boring – the negative attitudes are likely to hold back their reading improvement. Poor readers generally have more negative attitudes than good readers (Inderjit, 2014).

RESEARCH BACKGROUND

In today’s world, the ability to read English fluently would be useful, particularly if one needs to obtain information from English-based references and materials. As students gain wider access to electronic databases through the Internet, it is reading, more than any of the other English language skills, that allows access to information (Yan, 2006). The ability to read has long been considered by literate societies to be one of the basic building blocks affecting commercial exchange, cultural advancement, and personal independence. High levels of literacy are even more important as we move through the 21st century. In fact, we are now exposed to more information that requires reading and synthesizing. We depend on our reading abilities in every area of our lives – our careers, assembling household items as well as being an informed citizen. The demands on students to read, comprehend, and evaluate complex information have never been greater. Jobs in technology, information, and management dominate the workplace, leaving few opportunities for the illiterates. Students in schools today require a strong foundation of literacy to enable them to participate in an increasingly educated workforce (Yan, 2006).

To be proficient in reading involves a variety of interconnected elements. These include learners' attitude toward reading and their motivation to read for enjoyment. Based on the vision to become an industrialized nation, Malaysia has made several conscious efforts to improve and develop literacy so that it would achieve a literacy rate of 100%. Previously, the World Education Report (1993) stated that Malaysia had one of the lowest literacy rates (78.4%) compared to her other Southeast Asian neighbors like Singapore (100%), Indonesia (81.6%), Thailand (93%), and the Philippines (89.7%), respectively. In 2014, the country's literacy rate was about 94%. And, that there has been an increased focus on reading instruction in higher education in recent years. Eventually, in an effort to improve the quality of instruction, a number of research has been conducted to break down and to understand the complex process of reading (Inderjit, 2014).

In the English language classroom, reading is one of the most critical skills to learn. In addition, reading is not a skill that can be automatically learned. Rather, it involves a complex process of making meaning from a text for a variety of purposes and in a wide range of contexts (Allen & Bruton, 1997). In the context of Malaysia, the Ministry of Education has introduced reading programs such as "The Structured Early Reading Programme", which aimed to inculcate a love for reading at an early age (AD-Heisat, Mohammed, Krishnasamy & Issa, 2009). In addition, the schools were given "big books" to be used with students through an extensive reading program (Ministry of Education, 2004).

Literature has shown that reading is a complex skill to be learned. According to Wallace (1992), reading could be pleasurable and easy for some learners or displeasing and complicated for others. Some students would employ reading as a learning opportunity while others would avoid it because they find it difficult, and they struggle at it. This could be the reason why students were said to be lacking interest in reading (Ley, Schaer & Dismukes, 1994). A Malaysian Reading Profile Survey conducted in 2010 also reported that Malaysians who were at the age of 10 and above only read approximately eight to twelve books a year (National Library of Malaysia, 2010). This number was worrisome. Moreover, students might have interest in reading; nonetheless, they may not adopt reading as a habit (Khairuddin, 2013).

Most texts that students encounter in their studies are either narrative or expository. In science and technical courses, much of the texts that students encounter is expository. Students often treat expository text found in technical textbooks as just a listing of facts. By first understanding the different ways in which scientific and technical information is presented in text, the teacher can then develop strategies to enhance students' understanding and comprehension of the technical reading materials.

A significant number of researchers had attempted to identify the problems confronted by low English proficiency students by examining the differences between successful and unsuccessful learners. These two groups of learners were distinguished by their academic performance in tests, examinations, or learning tasks. Some studies found that major differences lie in aptitude, learning strategies, beliefs, and learning behaviors (Huang & Tsai, 2003). For example, the behaviors of underachievers have some characteristics. They lacked positive learning attitude, motivation, or persistence. In class, they need more personal attention, take a longer time to finish a learning task, often skip class or attend class late, and often delay or do not submit homework assignments (Hsu & Sheu, 2008).

STATEMENT OF THE PROBLEM

In Malaysia, as English is not the students' mother tongue and not widely spoken at home, they tend to face challenges in reading English materials. Some of the problems that can be identified such as students are unable to express their ideas the way they should be; students prefer to communicate with their peers in their mother tongue rather than in English; students have difficulties in comprehending what they are reading and having difficulties pronouncing certain English words which lead them to avoid reading in English at all (Salehuddin, 2002). In addition, Pandian (2004) asserted that only 20% of the Malaysian population are "regular readers", and the rest 80% are "reluctant readers" of English language materials. It was also found that students' main purpose of reading is to pass examination. Most Malaysian students were reluctant to read technical manuals in English. It was also added that if this phenomenon was left unattended, the future of Malaysia would eventually be dominated by "reluctant readers" who are poor readers in English.

In the technical and vocational system, this situation has worsened where most of the students who attended vocational courses tended to be those who had rather minimum proficiency, particularly in the English language. The lack of proficiency in the English language can seriously affect the students' achievements in certain courses. Literature also showed that empirical studies on the reading knowledge, skills, and attitudes in terms of understanding technical materials in English among secondary school students were scanty. Technical materials in this study refer to contents in science, technology, and vocational fields in which substantial terminologies are written in English. Obviously, technical materials are reading materials in English that are related to the technical subject, such as specialized textbooks, technical reports, manuals, tech-magazines, technology-related journals, and product specifications. Most of the scientific papers, techno-journals, and engineering reports are written in English. Hence, reading these techno-corpus demand the readers to have sufficient knowledge and skills in reading these technical materials in English. Since there was a lack of empirical studies regarding technical school students' knowledge, skills, and attitudes toward reading English technical materials so it was critical to conduct this study.

PURPOSE AND OBJECTIVES OF THE STUDY

The purpose of this study was to determine reading competency on English technical materials among secondary technical school (SMT) students. Specifically, the objectives of this study were as follows:

1. To identify the reading skills in English technical materials among SMT students in Perak.
2. To identify the reading purposes in English technical materials among SMT students in Perak.
3. To identify the interests toward reading in English technical materials among SMT students in Perak.
4. To identify the reading preferences in English technical materials among SMT students in Perak.

METHODOLOGY

The aim of this research was to determine the technical school students' knowledge, skills, and attitudes toward reading English technical materials. This case study – multiple cases and multiple sites – was conducted in a state of Perak in Malaysia. Four technical schools in Perak were being selected randomly. They were Sekolah Menengah Teknik Slim River, Sekolah Menengah Teknik Teluk Intan, Sekolah Menengah Teknik Lebu Catur, and Sekolah Teknik Pesiaran Brush, Ipoh. The instrument used in this study was a set of questionnaires. Five-point Likert scale was used to measure the perceived skills and attitudes of the respondents. The questionnaires used in this research were modified from AD-Heisat et al. (2009) study. The data were analyzed using descriptive statistics such percentage, frequency, mean, and standard deviation.

RESULTS

Table 1 showed respondents' demographics information based on gender. Majority of the respondents were males (53.3 %), and the rest were females (46.7 %). In terms of parents' education level, most of them were secondary school leavers. The majority (74.2 %) of their fathers possessed secondary school qualifications, while only about one-fourth (25.8 %) were university graduates. Similarly, only one-fourth (26.7 %) of the mothers' possessed university degrees. Majority (73.3%) of the mothers were secondary school leavers. Regarding the language used at home, over one-half (59.2 %) of the respondents spoke only their mother tongue. While the rest (40.0 %) spoke mixed-language at home with the exception of only one respondent (0.8%) who used only English at home. In terms of students' residence, majority of the respondents (73.3 %) lived in cities, and only about one-fourth (26 %) of the respondents lived in rural areas.

Demographic Information of the Respondents

Table 1: Respondents’ Demographic Information

Variables	n	(%)
Gender: Male	64	53.3
Female	56	46.7
Parents' Education Level:		
Father:		
University level	31	25.8
Secondary school level	89	74.2
Mother:		
University level	32	26.7
Secondary school level	88	73.3
Language Used at home:		
Mother tongue	71	59.2
Mixed-language	48	40.0
English only	1	0.8
Residence Location:		
City	88	73.3
Rural	32	26.7
Total	120	100

Reading skills

In the context of reading skills, Table 2 displayed the top three means which included items 1, 2 and 3. For item 1, the respondents strongly agreed (M=4.25; SD=0.89) that they imagined scenes of what they were reading. Next, the students agreed (M=4.10; SD=0.97) that they focused on keywords and phrases to expedite reading (item 2). The third highest mean was item 3 where the respondents agreed (M=4.09; SD=0.75) that they tried to understand the new vocabularies that they encountered in the texts.

Nevertheless, the three lowest means were items 15, 16, and 17. For item 15, the respondents were not sure (M=3.30; SD=1.04) whether they were aware of the time limit for reading the text. Hence, the students were facing difficulty (M=3.20, SD=0.97) to rephrase the sentences in their own words (item 16). Finally, in item 17 the respondents were unsure (M=3.18; SD=0.92) whether they made guesses about the meanings of the sentences that they read.

The overall mean was 3.69 (SD=0.96) which means that the majority of the respondents were slightly agreed that they possessed reading skills. Meanwhile, the overall standard deviation value was 0.96. This indicated that the responses were somewhat polarized. Items with high standard deviations were items 5, 7, 8, 11, 13, and 15 and these items indicated high dispersion in the responses. Table 2 showed means and standard deviations for the aspects of reading skill.

Table 2: Means and standard deviations of items for reading skills

No.	Items	Mean	SD
1.	I imagine scenes of what I am reading	4.25	0.89
2.	I focus on keywords, and phrases to expedite reading	4.10	0.97
3.	I try to understand the new vocabulary in the text thoroughly	4.09	0.88
4.	I control my reading speed for difficult passages	3.95	0.97
5.	I read the sentence first then I guess the meaning of the difficult words	3.94	1.00
6.	I use context, like familiar words, pictures, and the content to help me	3.78	0.92

	guess the meanings of unfamiliar words		
7.	While I read, I periodically check whether the material is making sense to me (understood)	3.75	1.02
8.	I keep reading if I find it difficult to understand what I read in order to guess the context	3.75	1.04
9.	I summarize (in my head) important information that I read	3.71	0.88
10.	I read the title and predict what the text is about	3.65	0.92
11.	I take notes while reading	3.59	1.03
12.	I test my understanding toward material by trying to answer the preview questions without referring to my notes	3.55	0.90
13.	I look for the words that are boldfaced, italics, or in a different font size, style, or color for identifying main ideas	3.52	1.06
14.	Before I read, I think of what I already know about the reading topic	3.42	0.98
15.	For intensive reading, I'm aware of the time limit for reading the text	3.30	1.04
16.	I rephrase what I am reading in my own words	3.20	0.97
17.	I make guesses about up-coming information in the text	3.18	0.96
Total average of means and standard deviations		3.69	0.96

Reading Purposes

With regard to reading purposes, the top three means were items 1, 2, and 3 (see Table 3). In the first item, the respondents strongly agreed (M=4.30; SD=0.86) that they read for self-development. The second goal (item 2) was to master the grammar of the language (M=3.86; SD=1.03). Next, for the third purpose (item 3), the respondents concurred (M=3.80; SD=1.00) that their aim of reading in English was for academic purpose.

Nevertheless, the three lowest means were items 6, 7, and 8. The data showed that the students were unsure whether they read English materials to master vocabulary (M=3.05; SD=1.03), or as a hobby (M=2.99; SD=0.99) or to enhance writing skills (M=2.77; SD=1.06). In addition, the standard deviations for items 2, 3, 6, and 8 were relatively high. These items portrayed high variability in the responses. Overall, the results demonstrated that the respondents have varied reasons for reading English materials. Table 3 showed means and standard deviations for the aspect of reading purpose.

Table 3: Means and standard deviations of items for reading purposes

No.	Items	Mean	SD
1.	I read English materials for self-development	4.30	0.86
2.	I read English to ease me to master grammar of English	3.86	1.03
3.	I read English materials for academic purpose	3.80	1.00
4.	I read English to ease me to listen to English	3.80	0.95
5.	I read English materials to obtain general information	3.58	0.96
6.	I read English to master vocabularies	3.05	1.03
7.	I read English materials as a hobby	2.99	0.99
8.	I read English to ease me to write in English	2.77	1.06

Note: Range of mean: 1.00 – 1.80 (Strongly disagree), 1.81 – 2.60 (Disagree), 2.61 – 3.40 (Uncertain), 3.41 – 4.20 (Agree), 4.21 – 5.00 (Strongly agree)

Reading Interests

Table 4 illustrated the empirical data pertaining to reading interest. The highest three means were items 1, 2, and 3. The empirical data illustrated that the majority of the respondents strongly agreed (M=4.30; SD=0.86) that they enjoyed reading in English, and they chose reading materials that they found interesting (M=3.86; SD=1.03). Next, the majority of the respondents preferred to read comics, newspapers, magazines, and novels (M=3.80; SD=0.95). However, the lowest means were items 8, 9, and 10. For item 8, the students were not sure (M=2.87; SD=1.03) whether they competed with their friends to read articles or materials in English. Next, item 9 showed that the respondents were doubtful whether textbooks and academic books were their preferred choice (M=2.77; SD=1.06). Finally, the

respondents were rather uncertain ($M=2.67$; $SD=1.17$) whether they totally immersed in reading English materials (item 10). The standard deviations for items 2, 4, 6, 8, 9, and 10 were rather high which indicated the responses were polarized. Overall, the results demonstrated that the respondents have myriad interests in reading in English technical materials. Table 5 posited the means and standard deviations for reading interests.

Table 4: Means and standard deviations of items for reading interests

No.	Items	Mean	SD
1.	Reading is very important for me to enhance my knowledge	4.30	0.86
2.	I choose English reading materials based on whether it is interesting or not	3.86	1.03
3.	I also read comics, newspapers, magazines and novels in English	3.80	0.95
4.	My reading skill in English is better than my writing skill in English	3.80	1.00
5.	I like reading English technical materials	3.58	0.96
6.	I read something in English every day	3.05	1.03
7.	I do a lot of reading in English materials because it is my hobby	2.99	0.99
8.	I compete with my friends to read articles or materials in English	2.87	1.03
9.	Of all the English materials available, I prefer to read textbooks (academic book)	2.77	1.06
10.	I focus my attention when I am reading English	2.67	1.17

Note: Range of mean: 1.00 – 1.80 (Strongly disagree), 1.81 – 2.60 (Disagree), 2.61 – 3.40 (Uncertain), 3.41 – 4.20 (Agree), 4.21 – 5.00 (Strongly agree)

Reading Preferences

In the context of reading preferences, the respondents were asked to rank the types of reading English materials they like most based on their personal reading preference. As shown in the Table 5, 15 types of reading materials were included on the questionnaire that can be categorized as either academic or non-academic writing. Non-academic reading materials, such as English blogs, newspapers and magazines were shown to be the most popular among the respondents. As illustrated in Table 5, it was demonstrated that the respondents agreed ($M=4.08$; $SD=1.08$) that they read English materials and resources digitally or online. They also read ($M=3.70$; $SD=1.06$) fiction books in English. Next, the respondents also reported to read English newspapers ($M=3.53$; $SD=0.92$) frequently. However, the respondents were not sure whether they read journal articles ($M=2.82$; $SD=0.82$) or library reference books ($M=2.78$; $SD=0.76$). Finally, the students admitted that they did not read religious books in English ($M=2.24$; $SD=1.17$). The standard deviations for items 6, 7, 8, 10, 11, and 15 were rather high which show the high variability in the responses. Table 5 displayed the means and standard deviations for reading preferences.

Table 5: Means and standard deviations of items for reading preferences

No	Items	Mean	SD
1.	English materials digitally (e.g., reading e-mails, blogs or Facebook)	4.08	1.08
2.	Fiction books (storybooks)	3.70	1.06
3.	Newspapers	3.53	0.92
4.	Articles on the internet	3.47	1.09
5.	Magazines	3.45	0.96
6.	Comics	3.45	1.63
7.	English songs/repertoire	3.34	1.46
8.	English puzzles/games	3.30	1.12
9.	Special interest books	3.28	1.09
10.	Announcement or advertisement in English	3.24	1.28
11.	Novels	3.05	1.22
12.	English dictionaries	2.98	0.88
13.	Journal articles	2.82	0.82
14.	Library reference books	2.78	0.76
15.	Religious books in English	2.24	1.17

DISCUSSION AND IMPLICATIONS

Based on the empirical data, it was found that the level of reading knowledge and skills of secondary technical school students was at a moderate level. Hence, the students slightly agreed they possess reading skills. Their strengths in reading skills include they could imagine what they read; they focused on keywords and keen to learn new vocabularies. However, the students admitted that they were not time-conscious when reading; and they faced difficulty to rephrase sentences using their own words. Further, they were not proficient in guessing the meaning of the words. In the context of reading purpose, the respondents stated that their main goals in reading English technical materials and resources were for self-development; to master grammar, and understand English resources better. However, they were facing problem regarding the jargons, they treated reading as an academic exercise and not as a hobby; and they faced a profound challenge in writing in English.

In terms of reading interests, the respondents were keen in reading English technical resources to enhance their technical knowledge in the subject matter. But they only chose the relevant and interesting materials and resources. Nevertheless, during their leisure time, they read comics, newspaper, magazine and novels. In addition, they had not set reading as hobby and they were not keen to compete with their friends in finishing their reading tasks. And they were not totally immersed when they read in English.

Furthermore, with regard to reading preferences – they preferred reading digitally or reading online rather than reading the traditional reading materials. Similarly, they preferred to read news online. In the context of reading preferences, the respondents were asked to rank the types of reading English materials they like most based on their personal reading preference. From the 15 types of reading materials included on the questionnaire that can be categorized as either academic or non-academic writing, they preferred non-academic reading materials such as English blogs, newspapers and magazines. It was also demonstrated in this study that the respondents agreed that they read English materials and resources digitally or online. They also read fiction books in English. Next, the respondents also reported to read English newspapers frequently. However, the respondents were not sure whether they read journal articles or library reference books. In general, the respondents' skills and attitudes (purpose, interests, and preferences) in reading English material seemed to be positive.

As an implication, the policymakers particularly in the Ministry of Education should undertake steps to review and revise the present English curriculum for improvement in the areas of curriculum and teaching methods. Technical secondary schools should be able to provide better teaching and learning facilities that attract and cultivate students in reading English technical materials.

Another initiative to improve the students' attitudes (purpose, interest, and preference) toward reading technical materials in English is to intensify students' reading proficiency – students themselves need to be more creative and active in the learning process. In addition, teachers should be more innovative in teaching English by exploring new methods of teaching. Teachers ought to use myriad of latest teaching aids including the internet, digital teaching and learning aids, simulations, and other technological devices to stimulate students' interest in learning reading in English. Furthermore, teachers should integrate and emphasize various reading activities in their teaching plans. Technical schools students could take their own initiatives in improving their English reading proficiency through practicing reading exercises. In other words, the students should develop their own interests and preferences toward reading until they become reading habits. As most respondents stated that reading is one of the most complicated skills to master in learning a language, teachers need to encourage students to increasingly practice reading skills in their daily life. It is reasonable to assume that as more students practice reading comprehension, the better they would become in reading. Teachers need to exhibit a good role model in improving English communicative skills of their students so that the students would follow the teachers' footsteps. Therefore, it is suggested that teachers or educators who seek to improve students' reading attitudes should organize courses that could motivate their students intrinsically.

In the nutshell, the current study revealed that respondents' reading skills, reading interests, and reading preferences were perceived to be critical to be nurtured. This is because the students' capability in reading technical materials in English is still inadequate. Nonetheless, students have acquired some reading skills while at school, and they also have narrowed purpose of reading but they did not show much interest and preference in reading technical materials and resources in English. Hence, it is crucial for instructors to effectively teach students with better strategies and techniques in order to enhance the students' reading skills and to nurture the students' positive reading attitude. Teaching reading strategies should include both cognitive and metacognitive strategies to enhance reading skills. Students should be provided with ample exercises to practice the varied reading strategies. Teachers should not assume that their students have acquired reading skills and abilities. These skills should be taught. In terms of reading skills, teachers should determine the most appropriate techniques to enhance students' reading capabilities. In addition, their students' reading interests and preferences need to be improved. An interesting point was that most of the students preferred to read in the digital form or online. In the IR 4.0 era, the millennial students were attracted to fun learning with digital gadgets. The aim of this research was to examine reading knowledge, skills and attitudes in reading English technical materials among students in selected technical secondary schools. Based on the empirical data, it is suggested that through a bilateral cooperation between Ministry of Education and school authorities, a new reading program – teaching reading English technical materials and resources could be introduced for technical schools and vocational colleges in Malaysia.

CONCLUSIONS

The study was designed to identify technical school students' knowledge, skills, and attitudes toward reading English technical materials. Based on the research findings and limitations of the study, several conclusions can be drawn. First, the students claimed that they possessed reading skills. In terms reading skills, the respondents were slightly agreed that they possessed the reading skills. They claimed that they were good at “visualizing” what they were reading but poor at guessing the meanings of the unfamiliar words that they encountered. Second, with regard to the reading purposes, they concurred that they read for self-development but did not see reading as way to improve their writing skills. In other words, the respondents were unsure if they read in English for the purpose of improving their writing skills. And, the respondents were uncertain whether they read English material as a hobby. Similarly, they were also ambivalent with regard to reading English to enhance corpus of new vocabularies.

Third, in the context of reading interests, the students asserted that reading technical materials and resources could enhance their knowledge. But they disagreed with the statement that they only focused on English reading. Finally, the empirical data on the reading preferences indicated the respondents preferred doing reading tasks using computer or digital devices. They, however, seldom

read religious book in English. In conclusion, the main findings showed that secondary technical schools students in Perak believed that they possessed some competence to read English technical materials but they were weak in writing and reading certain types of reading materials. This implies that the English curriculum for technical and vocational institutions needs further improvement in especially in reading contents, reading coaching, reading activities, teaching methods, and teaching-learning facilities. Digital devices to enhance reading competency should be used.

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