



The Influence of Content Schemata on ESL Learners' Reading Comprehension

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ABSTRACT

Content schemata play an important role in influencing ESL learners' comprehension. If reading texts chosen do not relate well to their schemata, this could affect their comprehension. This qualitative case study which involved 12 participants, was conducted to explore how content schemata contribute to the learners' comprehension, to explore factors that contribute to the learners' understanding, and factors that hinder the process of understanding the text. Schema Theory and Reader-Response Theory guided this study. Data which were gathered through think aloud protocol sessions and in-depth interviews were cross analyzed for patterns. For the think aloud protocol, four patterns were identified: identifying important aspects of a message and allocating attention, monitoring ongoing activities, engaging in review and self-interrogation, and taking corrective action and recovering from disruptions. In addition, three themes had emerged in the analysis of the in-depth interviews: ways learners process texts, contributing factors to learners' understanding, and importance of background knowledge. The findings revealed that the learners' comprehension of text is hindered without content schemata. Results



of this study can help material writers in selecting texts which are within the learners' content schemata as they influence their cultural practices, attitudes and values which shape their understanding of reading texts.

Keywords: content schemata; reader-response theory; reading comprehension; schema theory; second language reading

INTRODUCTION

Carrell and Eisterhold (1988) highlighted the issue of content schemata as being the area that is most ignored in both, second language reading and foreign language reading. English language reading courses for students undergoing degree programmes at universities in Malaysia require them to obtain reading skills, such as the ability to interpret the content of the passages as well as to analyse the organization of the ideas that are necessary for them to understand academic texts. Language learners need to have a wide range of schemata to enable them to understand academic texts efficiently. According to Carrell (1988) and Nuttall (1982), insufficient schemata can hamper readers' understanding of the reading text. A reader can successfully comprehend a text if he/she obtained shared schemata as the reader can make use of his/her previous knowledge to understand the context of the text (Khataee, 2018).

Problem Statement

The reading materials chosen for English language servicing courses at the Malaysian tertiary institutions cover wide-ranging issues which demand ESL students to have background knowledge on the contexts presented in the reading materials. Learners are expected to be able to understand well the reading passages and short stories that are used in language classrooms.

However, insufficient schemata or "schema unavailability" (Nuttall, 1982; Carrell, 1988) is found to be problematic for language learners to understand the reading passages. Bartlett and Pearson (1988) stated that learners are not able to represent the suitable slots from their prior knowledge and relate them to the context of the reading passages as the slots should be represented with certain information. Nuttall (1982) explains that there is a possibility that difficulties could be faced by learners who do not possess the schema that is relevant to the text as the learners might not have sufficient information to understand the reading passage. While reading, the reader's schemata behave as a bridge which connects his/her background knowledge on a specific subject matter to the content of the text. Reading passages as well as short stories that are included in the textbooks for ESL students at secondary level as well as tertiary level could be difficult, especially for learners with limited schemata with regard to cultural literacy, to understand certain texts, as the content of the passages or the short stories are not within the learners' schemata. Literature genre reading materials also consist of intellectual content with artistic quality that the authors had employed to convey language creatively which includes the usage of figurative language (Ajjulus & Kamal, 2022).

Naqeeb (2012) emphasizes that the cultural content of the teaching materials and the cultural basis of the teaching methodology must be considered when deciding the texts to be



used for teaching and learning. This is crucial as comprehension of the text content is achieved by the reader from the stimulus that he or she gains from the reading text with the aid of the interaction with his or her prior knowledge (Ramli, 2021).

Therefore, the role of content schemata in influencing learners' understanding of a text among degree level students at Universiti Teknologi MARA, Arau Campus, Perlis Branch, Malaysia, was explored in this study. This research on reading, catering specifically on this issue will provide a clearer picture of reading problems pertaining to tertiary level students undergoing English language courses as servicing courses. This study is aimed to fill-in the gap in the area of content schemata in reading, i.e., in what way content schemata contribute to learners' understanding of a text. In addition, this study also hopes to fill-in the gap in the area of content schemata research conducted at local academic institutions because the research on this particular area that were done locally is limited in number. Most importantly, results obtained from this study can be of guidance for material developers as well as material writers in selecting suitable reading materials that are within the learners' content schemata.

Objectives of the Study

The objectives of this study are as follows:

1. To explore how content schemata contribute to learners' understanding of a text by looking at how the learners process content-familiar and unfamiliar texts.
2. To explore the factors that contribute to the learners' understanding of the text.
3. To explore the factors that hinder the learners from understanding the text.

Research Questions

Research questions below guided this study:

1. How do language learners process content-familiar text and content-unfamiliar text?
2. What are some of the factors that contribute to the learners' understanding of the text?
3. What are some of the factors that hinder the learners from understanding the text?

Significance of the Study

The research is hoped to raise awareness with regard to the choices of reading texts among material writers and developers for servicing English language courses at tertiary institutions in Malaysia. ESL learners undergoing these courses face difficulties in understanding the reading texts as they lack content schemata in the area of topics chosen in the textbooks. If material writers and developers are aware of the problem, they will be better able to choose reading materials which content areas that are within the background knowledge of the learners to be included in the text books and teaching modules for ESP courses (Radzi & Aziz, 2014). This may have immense impact on learners' comprehension and evidently will be more advantageous to ESL learners. This can hopefully assist material developers and material writers to select reading texts which are within the learners' content schemata as they influence the learners' cultural practices, attitudes and values which shape their understanding of reading texts.



REVIEW OF LITERATURE

A brief overview of Schema Theory and Reader-Response Theory

David E. Rumelhart, a leading cognitive theorist developed Schema Theory and in 1980, he attributed the term schema to Kant's (1965) work. He also credited Bartlett (1932) who coined the word schema. Richard Anderson developed the theory further in 1970s. Minsky worked on artificial intelligence (AI) in 1970s and associated his research with Bartlett's study. As stated in Pappas (2014), schemata are regarded as a form of representation for complex knowledge in our brain and so our background knowledge will influence new information that we receive.

Another reading theory which is closely related to Schema Theory is Reader-Response Theory, which was developed by Rosenblatt (1978, as cited in Mart, 2018) with the view that stressed the text as an activating stimulus that serves as reference for the reader's interpretation. Beach (1993, as cited in Mart, 2018) stated that the context of the text influences the reader's responses.

Reading Comprehension and Schemata

Among the research on content schemata conducted was by Charun (2012) involved twenty-one Year 3 Tamil vernacular primary school students' understanding of three short stories presented in native as well as non-native cultures. From the analysis of the participants' comprehension test scores and retelling scores, it was found that the participants were able to understand the text presented in the native culture as opposed to the ones presented in the non-native cultures (Charun, 2012).

A study conducted by Khataee (2018) explored the effectiveness of cultural familiarity and cultural schemata in short stories in improving learners' comprehension. It was found that learners who obtained previous knowledge scored better as compared to those who read the nativized version of the short story (Khataee, 2018).

Thirunavukarasu and Raja Harun (2021) conducted a study to explore the learners' use of cultural schemata in understanding texts which contain Malay, Chinese as well as Indian cultures, involving 15 participants of a primary school. Their findings indicated that the participants' incomprehensibility of the text was because of their unfamiliarity of the cultural content presented in the text (Thirunavukarasu & Raja Harun, 2021).

In a study which looked at the influence of linguistic knowledge in EFL reading comprehension that focused on schemata analysis, Hamid et al. (2020) found that a method needs to be developed to assist ESL learners use their linguistic knowledge to activate their prior knowledge properly in understanding the different English reading texts.

Another study is done by Brown and Gueroudj (2020), utilized pre-reading, while-reading and post-reading tasks in looking at the effect of cultural schemata, i.e., getting a tattoo, on EFL learners' reading comprehension. In their study, data gathered from 40 participants revealed that many EFL learners who belonged to the control group displayed a lack of cultural schemata since their prior knowledge was not activated, which had negative impact on their reading practices (Bensalah & Gueroudj, 2020). They concluded that there is a correlation



between activating the learners' background knowledge and the learners' reading comprehension ability.

METHODOLOGY

The primary reason why the researcher had opted for a qualitative research for this study is to disclose rich data which emerged from the participants' perspectives with regard to the influence of content schemata on reading comprehension. By utilizing think aloud protocol, the researcher obtained verbal protocols from the participants while they were attempting the two texts and later obtained responses through the interview questions regarding their perspectives on the influence of content schemata while reading the two texts.

Participants

The participants in this study consisted of 12 students of Universiti Teknologi MARA Perlis, Part 2 and Part 3, Bachelor of Science (Hons) Technology and Plantation Management, Faculty of Plantation and Agrotechnology who were undergoing an English language course, i.e., BEL 462 Reading and Critical Thinking or ELC 501 English for Critical Academic Reading. The researcher had obtained informed consent from the participants prior data collection procedures.

Data Collection Techniques

The researcher conducted two data collection techniques, i.e., think aloud protocol and in-depth interview in order to explore how content schemata contribute to the participants' understanding of content-familiar and content-unfamiliar texts.

Think aloud protocol

Think aloud protocol was chosen to observe non-observable thought processes. The researcher intended to obtain the participants' concurrent verbalization during the process of reading. This provided important information with regard to each participant's processing steps namely series of spontaneous verbalization that is able to externalise mental processes, recording the sequence of processed information (Fujita et al., 2003, as cited in Radzi & Aziz, 2014). The participants' non-observable thought processes became observable as the participants were required to verbalize their cognitive processes.

The researcher audio taped and transcribed verbatimly the participants' verbal externalisation of thought. The length of the think aloud protocol sessions with the participants varied from 16 minutes to 26 minutes for each short story. While reading the two short stories, the participants were required to produce verbal reports of the reading process they were undergoing. For every think aloud protocol session, each participant was given a short briefing on the nature of think aloud protocol task so that they knew what was expected of them to do as they were reading the short stories. To understand better the reading processes, i.e., the participants' cognitive processes as they were reading, the specific notations were used as guidance, that had been adapted from Cavalcanti's (1989) study, by Fujita et al. (2003). The researcher used the specific notations to transcribe the verbal protocols produced by each participant for both short stories (refer to Table 1).



In-depth interviews

In-depth interviews, i.e., one-on-one interviewing were also conducted. The length of the in-depth interview sessions with the participants varied from 7 minutes to 16 minutes for each short story. Each in-depth interview session was carried out right after each think aloud protocol session for each short story. The framework of Schema Theory which focuses on the role of prior knowledge as a primary support in reading comprehension, served as a guideline in coming up with the in-depth interview questions (Radzi & Aziz, 2013) for the interview guide. The in-depth interviews conducted were audio taped and transcribed verbatimly using NVivo 10 software.

Data Analysis

The analysis of the verbal protocol transcriptions of the think aloud protocol was guided using the list of mental actions (Brown, 1980), i.e., clarifying the reading purposes; identifying important aspects of a message; allocating attention so that concentration can be focused on the major content area; monitoring ongoing activities to find out whether comprehension is occurring (as cited in Radzi & Aziz, 2013); engaging in review and self-interrogation to verify whether goals are being achieved; taking corrective action when failures in comprehension are detected; and recovering from disruptions and distractions. The researcher referred to the specific notations which were adapted from Cavalcanti's (1989) study, by Fujita et al. (2003) in order to comprehend the readers' cognitive processes during the progress of the reading tasks.

In the process of analyzing the data collected from the in-depth interviews, Creswell's (2012), "Figure 8.4: A visual model of the coding process in qualitative research" (p. 244) was used as a guide. The interview transcripts were segmented by dividing the transcripts into segments of information. Each segment was labelled by assigning codes. These codes were then examined for overlaps and redundancy. The interview transcripts were analyzed for recurring patterns and the themes were classified according to categories. The researcher constructed the coding categories that were used on the transcriptions. The coded categories were compared and decided on the standard coding categories, referring to the most repeated patterns that were found in the transcripts. The codes were then collapsed into themes. The researcher derived the main themes from the participants' responses on interview questions. The researcher then derived the sub-themes by identifying the codes or memos in the participants' responses for the interview questions (Miles & Huberman, 1994).

Reading Texts

The reading texts used in this study were: i) a text which is regarded as content-familiar to the participants, written by a local author, i.e. 'A Quid of *Sirih*, A Bowl of Water' by Khadijah Hashim (1973) and ii) a text which is regarded as content-unfamiliar to the participants, written by an American author, 'The Lottery', Jackson (1948). The content area of both texts is similar in terms of traditional and ritual practices, i.e., the practice of consulting a medicine man or a traditional healer among the Malay community in a village (content-familiar text) and the annual practice of conducting a 'lottery' in a small American community in the countryside, which was traditionally carried out by the farming community to ensure plentiful harvest (content-unfamiliar text). Both short stories focus on the importance of upholding the traditions.

The researcher chose two readability formulae to check the readability index of the two short stories, i.e., McAlpine EFLAW (as cited in Radzi & Aziz, 2013) and the Fog Index



(Gunning, as cited in Alderson & Urquhart, 1992), using The Gunning's Fog Index (or FOG) Readability Formula. For the short story, which is 'A Quid of *Sirih*, A bowl of Water' (content-familiar text), the Fog Index Formula scored 5.4 for text scale that is under the category easy to read. As for the content-unfamiliar text, which is 'The Lottery', The Fog Index Formula scored 5 for text scale, that is under the category easy to read (as cited in Radzi & Aziz, 2013). The reason why the text scale is slightly different between the two texts is because the content-unfamiliar text contains several names which consist of three syllables such as "Delacroix", "Anderson" and "Hutchinson" in the 200 word sample size. Both text scales, however, fall under the same category, i.e., easy to read. For content-familiar text, i.e., 'A Quid of *Sirih*, A bowl of Water', McAlpine EFLAW(TM) Readability scored 10.46 for text scale which is under the category very easy to understand. For the content-unfamiliar text, i.e., 'The Lottery', McAlpine EFLAW(TM) Readability scored 10.85 for text scale which is under the category very easy to understand (as cited in Radzi & Aziz, 2013).

RESULTS AND DISCUSSIONS

This paper presented the analysis of the think aloud protocol and the in-depth interviews for content-familiar and content-unfamiliar short stories in the following section. The cross-units of analysis of the think aloud protocol and the in-depth interviews for content-familiar and content-unfamiliar short stories are also presented. A few sample transcriptions are included in this section.

Analysis of the Think Aloud Protocol for Content-familiar Short Story (A Quid of Sirih, A Bowl of Water)

Table 1 below indicates the specific notations, adapted from Cavalcanti's (1989) study, as cited in Fujita et al. (2003, p. 4) used in transcribing the verbal protocols from think aloud protocol from the participants for both short stories.

Table 1
Specific notations for verbal protocol transcriptions

[...]	passage of the text verbalized by the subject at the first reading
Italic	subject's comments showing his/her comprehension
...	pauses and continuation of reading
< - -	subject returns to previous passages of the text
bold	terms selected by the subject
(- >)	subject "jumped" (ignored) passage of the text during reading
/	auto-interruption of a thought
((SL))	subject speaks and laughs at the same time
((MT))	subject mutters (meaning irony)
((LG))	subject laughs



(-> -> ->)	subject accelerates the reading rhythm
(~~~)	subject reading at a slower speed, with attention
"..."	word or expression commented upon by the subject
{	inclusion in the transcriptions of descriptions of the subject's meaningful gestures or the researcher's analytical comments
(...)	omission of an irrelevant passage of transcription
Underlined	relevance of the passage for the reader
Underlined and bold	sequences that best express the phenomenon under analysis

The findings are discussed based on the list of mental actions by Brown (1980), which consists of seven actions. From the review of the transcriptions from think aloud protocol, the patterns were coded and classified. Four major patterns which are identifying important aspects of a message and allocating attention so that concentration can be focused on the major content area; monitoring ongoing activities to find out whether comprehension is occurring (Radzi & Aziz, 2013); engaging in review and self-interrogation to verify whether goals are being achieved, and taking corrective action when failures in comprehension are detected and recovering from disruptions, were identified.

Sample transcription from only one participant is included in the following section. In this study, the researcher focused more on the content of the participants' responses rather than on the grammatical aspects. Eventhough some of the responses were grammatically inaccurate but these did not hinder understanding. Based on the participant's verbal externalization of thoughts, the following major patterns were identified from the List of Mental Actions by Brown (1980):

- a) Identifying important aspects of a message and allocating attention so that concentration can be focused on the major content area.

It was observed that during the think aloud protocol sessions for the content-familiar text, the participants could identify the major aspects of the text and focused their attentions on the major content area. The participants always looked for the connection between the characters and the subject matter in the short story in order for them to concentrate on the major content area of the text. Below is the think aloud protocol transcription given verbatim by one of the participants (name using pseudonym):

OK. The story about Farid who are a going graduate student (pause). He go back to his home at the village and when he back, he asked his mother to cook a roasted chicken for him (pause). And when his mother asked him to find the chicken, he couldn't find any because his Pak Long don't want to sell his Rooster chicken (pause.) His mother tell that their village has hit by the chicken epidemic or some sort of (pause) and his father Pak Seman was a shaman for the village...

(Muiz)



The participant, Muiz explained the connection between the characters, i.e., Farid and his mother. Muiz also identified the subject matter of the short story, i.e., Farid's father, the village *pawang* (traditional healer).

b) Monitoring ongoing activities to find out whether comprehension is occurring.

It was also observed that the participants always monitored ongoing activities to find out whether they understood the story plot. The participants confirmed their understanding of the storyline while reading the text.

In the beginning he remember Cikgu Ali who was his teacher when he was small. He insulting him about his being a pawang son and then when the current time that Cikgu Ali comes to his house and asked help from his father and then Farid remember the time when he was insult and have some sort of revenge or something like that ...

(Muiz)

Muiz verbalized the part where Cikgu Ali, Farid's former teacher who comes to see his father for incantation water for his sick child. Muiz also referred to the part where Farid takes the opportunity to get back at his former teacher who has made fun of him for being a *pawang's* (traditional healer) son. Muiz indicated that he monitored the plot as he understood the flow of the short story.

c) Engaging in review and self-interrogation to verify whether goals are being achieved.

It was observed that the participants were reviewing the passages by turning to the previous pages of the text that they were reading. In addition, a few of the participants questioned themselves to check whether they could comprehend the text.

He argued with his father about the job but his father don't have fixed salary or fix income so that < - - whenever people come to him, they only give him anything that they have < - -

(Muiz)

Muiz verbalized the confrontation between Farid and his father. He also returned to the previous pages, as indicated in the verbal protocol transcriptions above using the symbol (< - -), in order to check that he understood the main part of the story.

d) Taking corrective action when failures in comprehension are detected and recovering from disruptions.

It was also observed that only one participant, Sam, took a corrective action when he detected a problem to understand parts of the text and was able to recover from disruptions and resume reading the rest of the text.



(~~~) *Eh! I was mistaken, Pak Seman is the father, Farid's father*
(pause) *he is a 'pawang' (pause) that's why* (inaudible utterances)
(LG)

(Sam)

Sam's verbalization indicated that he realized Pak Seman is Farid's father, the *pawang* (traditional healer) in the short story. At first, Sam thought that Pak Seman is not related to Farid. He then understood the argument between Farid and his father.

Analysis of the In-depth Interviews for Content-familiar Short Story (A Quid of Sirih, A Bowl of Water)

The findings are discussed based on the semi-structured guideline questions. The participants were asked five major questions, followed by sub-question/questions for each major question. Three main themes which emerged are: (1) Ways learners process content-familiar text, (2) Contributing factors to learners' understanding and (3) Importance of background knowledge, as depicted in Table 2 below. Only selected sub-themes are presented below.

Table 2

Main themes and sub-themes of the conception of the influence of content schemata on learner's understanding of content-familiar text

Themes	Sub-themes
Ways Learners Process Content-familiar Text	Analyzing Character Searching for Key Words Making Prediction Using Imagination Brainstorming Keep Searching for Information Matching and Checking
Contributing Factors to Learners' Understanding	<i>Bomoh</i> Comparison Background Knowledge Accommodates Understanding Filtering Irrelevant Information Rejected or Accepted Coincide Information Selecting Other Information Acceptance of New Knowledge Association with Personal Experience Activation Not Inhibited Association of Prior Knowledge with Context Background Knowledge as Basis of Inference
Importance of Background Knowledge	Necessity of Background Knowledge Content Familiarity

Ways learners process content-familiar text

The first main theme was derived from the participants' responses on interview questions number 1 and number 2, which is based on Research Question 1, i.e., How do language learners process content-familiar text and content-unfamiliar text? From thematic analysis, this theme can



be categorized into seven sub-themes which are analyzing character, searching for key words, making prediction, using imagination, brainstorming, keep searching for information and matching and checking.

The sub-themes were then collapsed from the codes that had been assigned. The sub-themes are discussed based on the interview guideline questions and are illustrated in the sample quotes below. Sample transcriptions from only one participant for selected interview questions are included in this paper.

Interview Question 2: How do you cope with the text that requires specific background knowledge?

2 i) How do you activate your background knowledge on the particular topic?

Sub-theme: Using Imagination

This sub-theme is derived from the sub-theme, utilizing various mediums. The participants stated that they had used their imagination during their reading, to visualize the *bomoh* (traditional healer) in the short story. In coping with the text that requires specific background knowledge, the participants had used their imagination which came from various mediums as illustrated in the sample quotes below whereby parts of the excerpts has been highlighted. One of the participants, Muiz said:

Yes. I activated my **background knowledge on certain topics**. Because shaman job still exists nowadays. But some people might go to them or some people might prefer to go to the hospital or use the latest technology. But when they tried the latest technology, and they fail, they might go to a shaman to ask for help.

Interview Question 2 iv) Do you check or match the information in the text against your background knowledge and experience?

Sub-theme: Matching and Checking

This sub-theme is derived from the sub-theme similarities and differences. The participants revealed that they matched and checked the information in the text against their previous knowledge and experience. The participants looked at the similarities and differences of the information. One of the participants, Lan said:

Um, yes. Because for me, if I see it similar to me, it **has similarities with me or my culture**, it's quite interesting. The few similar things are **I live in a kampung also...Kampung culture**, they like to share their things and after they went to see the *bomoh* or *pawang* to get the holy (blessed) water or something, and if it worked, they will give a prize or present, to say their thanks? Umm, **similarities to the bomoh**.



Contributing factors to learners' understanding

The second main theme was derived from the participants' responses on interview questions number 3 and number 4, which is based on Research Question 2, i.e., What are some of the factors that contribute to the learners' understanding of the text? and Research Question 3, i.e., What are some of the factors that hinder the learners from understanding the text? From the thematic analysis, this theme can be categorized into ten sub-themes which are *bomoh* (traditional healer) comparison, background knowledge accommodates understanding, filtering irrelevant information, rejected or accepted coincide information, selecting other information, acceptance of new knowledge, association with personal experience, activation not inhibited, association of prior knowledge with context and background knowledge as basis of inference.

Interview Question 3: How do you connect the medicine man (*bomoh*) in the short story to your background knowledge?

Sub-theme: *Bomoh* (traditional healer) Comparison

It was revealed that one of the factors that contribute to learners' understanding is the participants' action of comparing the traditional healer in the short story with the type of *bomoh* that they were familiar with from their background knowledge. One of the participants, Ain said:

But, hmm...**all the *bomoh* that are normally portrayed in the dramas**, etc., they all **seem to be bad people**. **But, Farid's father is a good man**, he wants to help people...he doesn't cheat people...In the dramas, the *bomoh* are normally evil, right?

Question 3 i) Does your background knowledge on the medicine man (*bomoh*) accommodate your understanding on the topic?

Sub-theme: Background Knowledge Accommodates Understanding

This sub-theme is derived from the sub-theme, previous experience with such occasion. Most of the participants admitted that their background knowledge on *bomoh* (traditional healer) and for some of them, from their previous experience of meeting a *bomoh* or meeting someone who practices traditional healing methods, had helped them to understand the topic, i.e., the *bomoh*, in the short story. One of the participants, Qis said:

It helped me a bit...because **the one that I met was not actually a *bomoh***. He's actually an *ustaz*...my little sibling has problems sleeping at night...Just gave some water...**it is related somehow** because Malays, if it concerns water, **they see a *bomoh*...typical Malays**.

Question 4 iii) Does your background knowledge become the base of inference on the topic?

Sub-theme: Background Knowledge as Basis of Inference

The participants mentioned that their background knowledge with regard to *bomoh* (traditional healer) became the basis of inference on the topic, the *bomoh*, in the short story (Radzi & Aziz, 2014). One of the participants, Muiz said:



Yes, because if I don't understand anything, I cannot imagine the story, and if I do not have the knowledge, this might be a new knowledge for me. Yes, hmm, (I have) the knowledge of shaman and this boy...and I have met such a person.

Importance of background knowledge

The third main theme was derived from the participants' responses on interview question number 5, which is based on Research Question 2, i.e., What are some of the factors that contribute to the learners' understanding of the text? From the thematic analysis, this theme can be categorized into two sub-themes which are necessity of background knowledge and content familiarity.

Interview Question 5: In your opinion, is background knowledge important to understand a text?
Sub-theme: Necessity of Background Knowledge

The participants revealed that background knowledge is a necessity to comprehend a text. One of the participants, Ain said:

I think, if he/she wants to imagine what a *bomoh* is,
he/she needs some background knowledge.

Analysis of the Think Aloud Protocol for Content-unfamiliar Short Story (The Lottery)

The researcher observed that during the think aloud protocol sessions for the content-unfamiliar text, all participants were able to identify the major aspects of the short story. They also focused their attentions on the major content area of the short story. The participants seemed to look for the connection between the characters and the subject matter of the text they were reading. Below are the think aloud protocol transcriptions given verbatim by the participants (names using pseudonym):

[Suddenly, Tessie Hutchinson shouted to Mr. Summers. You didn't give him time enough to take any paper he wanted. I saw you. It wasn't fair!]
(~~~) [Mr. Graves nodded and held up the slips of paper. Put them in the box, then] (~~~)[Mr. Summers directed. Take Bill's and put it in. I think we ought to start over, Mrs. Hutchinson said, as quietly as she could. I tell you it wasn't fair].

(Qis)

The participant, Qis (referred to the text, lines 194-195), the part where Tessie's husband, Bill Hutchinson opens the folded piece of paper in his hands and realizes that he has a black spot on it. Qis also (referred to lines 198-208), the part where the slips of papers are collected from the Hutchinsons so that only the family will draw again from the black box. Tessie, the wife, thinks that the first draw is not fair as her husband is not given enough time to draw. The verbalization from Qis indicated that the participant had identified the major aspect of the text, i.e., the drawing process in the lottery.

Then, last paragraph say that the lottery is done by piece of paper now (....) replace, hmm, replacing the wood chip (....) Hmm, from the

previous town because paper is more suitable and more, eh, fit more easily to the box compared to woodchips (...). Then, they say that the box will be kept securely in several places when it is not used for < - - any lottery or any ceremony.

(Zac)

The participant, Zac referred to the text lines 60-71, as he verbalized Mr. Summers' role as the official of the lottery, replacing the chips of woods with paper slips and ensuring the safety of the black box until the next lottery. Zac also returned to the previous pages, as indicated in the verbal protocol transcriptions above using the symbol (< - -), in order to check that he understood the main part of the story.

Analysis of the In-depth Interviews for Content-unfamiliar Short Story (The Lottery)

The participants were asked five major questions, followed by sub-question/questions for each major question. Three main themes which emerged are: (1) Ways learners process content-unfamiliar text, (2) Contributing factors to learners' understanding and (3) Importance of background knowledge. Only selected sub-themes are presented below.

Table 3
 Main themes and sub-themes of the conception of the influence of content schemata on learners' understanding of content-unfamiliar text

Themes	Sub-themes
Ways Learners Process Content-unfamiliar Text	Analyzing Story Line Looking for Cues Did Not Make Prediction or Delayed Prediction Recalling Information from Memory Not all Learners Brainstormed Keep Searching for Information Matching
Contributing Factors to Learners' Understanding	Comparisons of Lottery Types Insufficient Background Knowledge on 'lottery' Filtering Irrelevant Information Rejected Coincide Information Selecting Other Information or Looking for Clues Acceptance of New Knowledge Association with Personal Experience Some Factors Inhibit Activation Association of Prior Knowledge with Context Background Knowledge as Basis of Inference
Importance of Background Knowledge	Necessity of Background Knowledge Content Familiarity Influenced Understanding

Ways learners process content-unfamiliar text

The first main theme was derived from the participants' responses on interview questions number 1 and number 2, which is based on Research Question 1, i.e., How do language learners



process content-familiar text and content-unfamiliar text? From the thematic analysis, this theme can be categorized into seven sub-themes which are analyzing story line, looking for cues, did not make prediction or delayed prediction, recalling information from memory, not all learners brainstormed, keep searching for information and matching. In the process of deriving the seven sub-themes, the researcher identified codes or memos (Miles & Huberman, 1994). The sub-themes were then collapsed from the codes that had been assigned.

Interview Question 2 iv) Do you check or match the information in the text against your background knowledge and experience?

Sub-theme: Matching

This sub-theme is derived from the sub-theme different situation. The participants revealed that they matched the information in the text against their previous knowledge and experience (Radzi & Aziz, 2014) on a situation that is almost similar but realized that the situation in the text was different from what they were familiar with. Ain said:

I imagined the usual lottery, money involved, the one who will win cash prize, but when I read, owh, that's not it, not that kind of lottery.

Contributing factors to learners' understanding

The second main theme was derived from the participants' responses on interview questions number 3 and number 4, which is based on Research Question 2, i.e., What are some of the factors that contribute to the learners' understanding of the text? and Research Question 3, i.e., What are some of the factors that hinder the learners from understanding the text? From the thematic analysis, this theme can be categorized into ten sub-themes which are comparisons of lottery types, insufficient background knowledge on 'lottery', filtering irrelevant information, rejected coincide information, selecting other information or looking for clues, acceptance of new knowledge, association with personal experience, some factors inhibit activation, association of prior knowledge with context and background knowledge as basis of inference.

Interview Question 3: How do you connect 'the lottery' in the short story to your background knowledge?

Sub-theme: Comparisons of Lottery Types

One of the factors that contribute to learners' understanding is the participants' action of comparing the lottery in the short story with the kind of lottery that they were familiar with. The participants mentioned that they made some connections between the two types of lottery and realized that both forms of lottery were different from one another where the lottery in the text was not what they initially presumed. Parts of the excerpts have been highlighted as illustrated below.

Qis said:

Hmm, I can make the connection in this case. It's not the kind of lottery that I initially thought.

Question 3 ii) Do you filter the irrelevant information from your background knowledge in connection to the topic?



Sub-theme: Filtering Irrelevant Information

The participants mentioned that they filtered the information that they found to be inconsistent with their background knowledge in relation to the topic, i.e., the lottery in the short story.

Qis said:

Aha. So, **I think that this lottery is not similar to the lucky draw lottery**, not like the ones where the winner will get the prize. The ‘prize’ must be something else. So, **I just ignored lah.**

Question 3 v) What effect does the new information in the text, if there is any, have on your existing knowledge on ‘the lottery’?

Sub-theme: Acceptance of New Knowledge

This is derived from the sub-theme, new knowledge about another kind of lottery. The participants revealed that the new information in the short story regarding the lottery that was conducted had changed their perception on the way lottery is conducted, the reason for conducting the lottery and the people who take part in the lottery. Muiz said:

I know that people in the past sacrifice people to worship the God but for this villagers, in this modern century (20th), **it quite hard to imagine that people still do the tradition to sacrifice people** because this people have already got their job as coal miners but still they do the tradition thing... **Yes (new information)** because I think in the era of miners, I think they already worship like Jesus but still this village do the annual ritual and practise this tradition. **It comes out as weird as in this era they still do sacrifice.**

Question 4 i) Were there any factor that inhibit you from activating your background knowledge on the particular topic?

Sub-theme: Some Factors Inhibit Activation

This is derived from the sub-theme, language used and contradicting information. The participants stated that there were some factors that inhibited them from activating their background knowledge on the particular topic, i.e., the lottery. One participant mentioned that one factor is his difficulty to understand certain words in the short story. Other participants stated that the form of lottery in the short story contradicts the form of lottery that they were familiar with, which became a factor that inhibited them from activating their background knowledge on the lottery. Ain said:

Because when, **there’s one part**, when the husband got the slip of paper (with the black mark), his wife seemed to be unsatisfied with the process of the lottery...Um, like it’s unfair. **It gave the impression that this kind of draw was not something happy, the happy kind. It seemed different...**Um, something that is scary.



Question 4 iii) Does your background knowledge become the base of inference on the topic?

Sub-theme: Background Knowledge as Basis of Inference

The participants mentioned that their background knowledge with regard to the common lottery where the winner will be awarded the prize money became the basis of inference on the topic of the short story, i.e., the lottery. Muiz said:

Yes. If the lottery in the story same with our lottery, I might know what this story is about, they choose people for their head village or somesort. But then in this story, it's far different from the current lottery.

Importance of background knowledge

The third main theme was derived from the participants' responses on interview question number 5, which is based on Research Question 2, i.e., What are some of the factors that contribute to the learners' understanding of the text? From the thematic analysis, this theme can be categorized into two sub-themes which are necessity of background knowledge and content familiarity influenced understanding.

Interview Question 5: In your opinion, is background knowledge important to understand a text?

Sub-theme: Necessity of Background Knowledge

The participants revealed that background knowledge on the kind of lottery being conducted in the short story and the processes involved in it, is necessary to comprehend a text. Qis said:

Yes. I think will have a better understanding if we had read a novel about this, we have **some memory about it**, may be in the novel, there is **some information about this kind of lottery that stone people**. So, **when we read something similar, we can recall** what we had read before, **so it is important**.

Question 5 i) Does your familiarity with the content of the short story influence your understanding?

Sub-theme: Content Familiarity Influenced Understanding

The participants mentioned that familiarity with the content of the short story did have some influence on their understanding of the short story. Muiz said:

Hmm...I know it is a sacrife because at first, **they bring stones or pebbles** and then **the pebbles are used to throw to people...Sacrifice is like, it's like in Islam, the *Hukum Hudud* for *zina***. They bury the people and throw stones.

Cross-units of Analysis of the Think Aloud Protocol and the In-depth Interviews

From the analysis of the think aloud protocol data for content-familiar and content-unfamiliar texts, it was found that learners backtracked such as checking their comprehension and monitored their process of reading. The findings also provided the insights with regard to the



context of the availability or unavailability of content schemata that had emerged from the thorough analysis of the verbal protocol transcriptions for both types of texts that had influenced their understanding on both types of texts.

From the analysis of the in-depth interviews, it was found that comprehension is an on-going process where learners, most of them, would keep on reading the texts before making or forming conclusion. They also continued reading the text before forming any conclusion on the type of lottery in the content-unfamiliar short story. The factors that contribute to learners' comprehension had also emerged from the in-depth interview data analysis.

Therefore, the cross analysis of the two data, i.e., the analysis of the think aloud protocol data and the in-depth interviews, had provided significant insights on how content schemata contributed to learners' understanding of both, content-familiar and content-unfamiliar texts by looking at how learners processed content-familiar and content-unfamiliar texts, the form of triangulation that had been attempted by the researcher in this study.

The results of the study are consistent with the findings in Kang's (1992) study, which revealed that the learners' understanding of the text was influenced by culture of the specific schemata. The findings also support the study conducted by Johnson (1982) which found that the readers' prior cultural experience facilitated their comprehension of familiar information in the reading passage.

The findings also corroborate with Yousif's (2006) study which indicated that content familiarity was found to have significantly affected the participants' overall comprehension performance and Ismail and Salim's (2009) study, as well as Maghsoudi's (2012) study which showed that the learners' cultural familiarity facilitated their comprehension. In addition, the results correspond with a study conducted by Truong (2021) which found that students made use of skills such as making prediction, using imagination and background knowledge while completing the reading task given.

CONCLUSION

This study aimed at exploring the influence of content schemata on reading comprehension, looking at how content schemata could contribute to learners' understanding of the two short stories by looking at how they process content-familiar and unfamiliar texts. The think aloud protocol and the in-depth interviews conducted in the study had gained important knowledge into ESL learner's cognitive processes that were involved in reading. The analysis implies that content schemata play a crucial role in second language learners' understanding of reading texts. Learners who lack content schemata will face difficulties to understand a text as lacking in content schemata can affect reading comprehension. With regard to the types of texts selected for the study, the findings indicate the influence of content schemata on reading comprehension among ESL learners. The findings of this study can hopefully assist material developers and material writers to select reading texts which are within the learners' content schemata and their cultural literacy, as they influence the learners' cultural practices, attitudes and values which shape their understanding of reading texts. This study is limited to the role of background



knowledge as a primary support in reading comprehension. As for further research, it is recommended for future researchers to include participants from various tertiary level institutions.

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Conflict of Interest

The authors declare no conflict of interest. There was no conflict of interest during the progress of the study.



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