

Think-Aloud Protocol Analysis: Revealing The English Student's Problem in Reading Comprehension

*¹Ni Wayan Krismayani, ²Sebastianus Menggo

¹Universitas Mahasaraswati Denpasar, Indonesia

²Universitas Katolik Indonesia Santu Paulus Ruteng, Indonesia

***Correspondence:**

chrismayani@unmas.ac.id

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Abstract

Readers should integrate information from the text they are reading with their existing knowledge since reading is a process of building meaning and language expansion. Without improving reading abilities, it is hard to succeed in the teaching and learning process and develop a more thorough understanding, a perceptive attitude, and creative thinking to reach reading achievement. The purpose of this study is to outline the issues that cropped up while reading. In this descriptive-qualitative study, the researchers identified, analyzed, and characterized the readers' mental processes for reading comprehension. Thirty students were taken randomly from three classes enrolled in the Intermediate Reading Course of the English Language Education Study Program, Universitas Mahasaraswati Denpasar. The finding showed that the students encountered four main problems: Inability to understand word, phrase, and sentence processing (78.1%); having weak syntactic parsing (83.3%), less inference (81.7), and inadequate self-monitoring (84%). The reading lecturers are suggested to determine the student's reading comprehension needs and employ relevant tips in the reading course, such as creating good connections, making predictions, visualizing, making inferences, self-questioning, and summarizing. The results are expected to give a useful contribution to strengthen reading theory and the lecturers in analyzing students' reading comprehension problems.

Keywords: Think-aloud protocol, reading comprehension, English language teaching

INTRODUCTION

Reading is one of the language skills in English that students should achieve while studying the language. As a result, students should develop and comprehend reading skills and learn a variety of other skills (Safura & Helmanda, 2020; Syakur et al., 2020). Reading seems to be the most frequently encountered activity in a language learning activity

(Ahmadi et al., 2013; Maduabuchi & Vivian, 2016). Reading is not only a way to provide helpful information and entertainment but also a great way to learn more about the language (Patel & Jain, 2008). Additionally, reading is essential for extending someone's mind, acquiring language knowledge, and comprehending the culture of a different ethnicity or a different nation. Thus, reading skills must be learned by every EFL learner as well as every speaker to strengthen insight in general and linguistics in particular.

In strengthening someone's language knowledge in a reading activity, a reader must first recognize the various linguistic signal, such as letters, morphemes, syllables, words, phrases, grammatical cues discourse makers in a text (Brown, 2001; Menggo et al., 2019). In line with the ideas stated, (Nunan, 2004) affirmed that reading is a process of constructing meaning and language expansion; readers should indeed integrate information from the text they are reading with their prior knowledge.

Everyone, including students pursuing a degree in English education, must have basic student reading comprehension. The amount of time someone spends reading indeed has an effect on how well they think about how to solve problems in life (Ghahari & Basanjideh, 2017; Küçükoğlu, 2013). One's ability to deal with life's challenges increases in proportion to the quantity of time they spend immersed in quality reading material. Reading is a way for a person to recharge himself/herself by enhancing his/her perspectives, which ultimately results in reflection on the truthful meaning of life itself. According to this viewpoint, reading routines must be strengthened, particularly among Indonesian students. It is impossible to succeed in the teaching and learning process without increasing reading skills to generate a wider insight, sharp mindset, and creative ability to attain reading achievement. Reading practices focus on connecting relevant ideas to create bigger concepts to sharpen one's logic and problem-solving skills. Reading skill is therefore viewed as a very essential and crucial activity for developing one's intellect (Guo, 2018; Kim & Piper, 2019).

EFL teachers, particularly reading instructors, have a prophetic duty to guarantee that their learners fully comprehend their reading skills (Menggo & Darong, 2022). Teachers of English as a Foreign Language (EFL) are encouraged to be able to identify in detail the challenges learners face when learning reading comprehension. After identifying and understanding the issues confronted by learners, EFL teachers give the right analysis strategy to address these difficulties (Sarjan & Mardiana, 2017; Wibowo et al., 2021). The analysis strategy is a way of comprehending the numerous reading comprehension challenges learners have.

Numerous previous studies examined the think-aloud protocols as a method of teaching reading comprehension (Karizak & Khojasteh, 2016; Schellings et al., 2013; Wang, 2016). However, these previous researches did not investigate the evidence about think-aloud protocols as an alternate technique for analyzing reading comprehension difficulties English language learners encounter in reading courses. According to this rationale, this study should be conducted.

Students majoring in English education or non-education, such as English literature, are generally required to take reading skills classes, both in Indonesia and other countries. Reading courses for English education programs in the Indonesian context, including Universitas Mahasaraswati Denpasar, are grouped into three categories, namely, basic reading, intermediate, and advanced reading. In the context of this study, the data was

obtained from intermediate reading, which is, reading courses distributed in the third semester of this English education study program. It is the responsibility of the reading instructor to devise the most effective method for analyzing the difficulties encountered by students. In reading comprehension, think-aloud protocols are an effective method of analysis.

A recent study investigating reading comprehension skills has employed think-aloud protocols. It is a way to enhance learners' critical thinking and comprehension of what they are reading. Additionally, the think-aloud protocol could assist university students in developing the capacity to track their comprehension of reading content. This notion is in line with previous research findings that think-aloud protocol is claimed to assist students' analysis of reading comprehension (Alzu'bi, 2019; Chin & Ghani, 2021). Alzu'bi (2019) and Chin and Ghani (2021) revealed further that think-aloud protocol is a technique used to collect data in usability testing, product design and development, psychology, and various social sciences, such as reading, writing, and translating in the research process.

Moreover, think-aloud protocols provide indirect access to the reader's thoughts by attempting to extract the reader's thought pattern while performing a reading task. Thus, think-aloud protocols can encourage the students to be aware of differentiating between reading words and comprehending the text by uttering what they think about the reading texts (Bahri et al., 2018; Tolhah & Sugirin, 2021). These researchers reported that the think-aloud protocol was believed to facilitate students' EFL reading comprehension. Through verbalization, students enhance reading comprehension and maintain track of their thoughts as they read.

It is evident from the preceding description and early interview data that a new study is clearly needed to expand and diversify the prior study's findings. This study aims to reveal the students' difficulties in the third-semester students of the English Language Education Study Program, Universitas Mahasaraswati Denpasar, in comprehending the reading text in an intermediate reading course. For this reason, the research question was looked into: What obstacles do students encounter in analyzing reading comprehension in an intermediate reading course?

METHOD

This research is a descriptive qualitative study, done from September to October 2021, in which the researchers determined, examined, and characterized the reading comprehension mental processes of learners. This research design permits researchers to investigate the cognitive processes or activities involved in reading comprehension. The questionnaire and interview served as the instruments for this study. The instruments used were adapted from Vygotsky's (1962) idea of "inner speech," as cited by the researcher (Charters, 2003). In addition, a panel of three subject-matter experts has also confirmed the validity of the questionnaire's question structure to ensure the accuracy and coherence of the questions.

Besides, the data sources were questionnaires and verbal responses of the respondents in answering the interview. The data of this study were the transcribed verbal recording of think-aloud protocols and the subjects' responses to the interview questions. Third-semester students who took the Intermediate Reading Course from the English

Language Education Study Program at the Faculty of Teacher Training and Education, Universitas Mahasaraswati Denpasar, were the subjects of this study. There were 90 students from three classes enrolled in this Intermediate Reading Course, but only thirty students were chosen using a random sampling technique due to the researcher's limitations. Ten respondents obtained thirty respondents from each class.

The researchers used some techniques to gather data, including (1) explaining the think-aloud activity to the respondents; (2) providing an example of the real think-aloud activity using a tape recorder; (3) conducting a test to prepare a tape recording of the respondents' think-aloud protocols; (4) asking the subjects to record or verbalize their thoughts while understanding a given task; (5) the researchers asked respondents to perform an actual think-aloud exercise on one of the particular students; and (6) They also instructed respondents to speak for the duration of the work, saying whatever comes to mind.

This concept has been indented to examine the students' cognitive processes and to evoke their understanding. The tape recordings were transcribed for examination after all of the students had participated in the actual think-aloud session. The researchers also conducted a retrospective interview, which aims to uncover any mental techniques that might not have been seen during the think-aloud activity. Following the interview's transcription, the researchers conducted a qualitative analysis of it using the research's guiding theory.

FINDINGS

This study aims to find out what difficulties' university students have when they are trying to comprehend the text. In this study, the students were asked to verbalize what comes to their minds when they are reading an English text. The presentation of the findings and discussions begins with the analysis of each verbalization to find the students' problems in comprehending the reading text. In this study, the respondents encountered four main problems: (1) inability to understand word, phrase, and sentence processing; (2) having weak syntactic parsing; (3) less inference; and (d) inadequate self-monitoring. The percentage of each of these obstacle findings can be described in greater the Table 1.

Table 1 Students' difficulties in comprehending the reading text

No	Statements	Answer option			
		SA	A	D	SD
1	I like reading, but I am unable to understand words, phrases, and simple sentences in comprehending text given	62.1%	16%	11.5%	10.4%
2	I am weak in syntactic parsing when analyzing reading text	68.9%	14.4%	10.4%	6.3%
3	When it comes to comprehending the reading's contents, I have not been able to draw the proper inferences and comprehend its meaning	66.2%	15.5%	5.8%	12.5%
4	I am lack of self-monitoring required to interpret the text's meaning	64.4%	19.6%	4.9%	11.1%

Source: Researchers' data

Note: SA = Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree

DISCUSSION

Inability to understand word, phrase, and sentence processing

Up to 78.1% of the students had trouble understanding words, phrases, and sentences while reading the reading material (SA = 62.1% + A = 16%). It is clear that the learner had trouble deciphering complex words and clauses. One of the responders made an effort to comprehend the challenging phrase or clause by taking it apart, as illustrated in the protocol below:

“Why do I need everything to be completely shipshape? The role of temperament peranan temperamen dalam membentuk individual... individuality atau kepribadian... Why do I need everything to be completely shipshape? Kenapa saya butuh segalanya itu... rapi or completely shipshape... lengkap dan rapi. (WID)”

According to the above protocol, the student (respondent code WID) had trouble understanding the question, “Why do I need everything to be completely shipshape?” This is corroborated by the researchers’ interview data, which shows that the students made an effort to fully comprehend the paragraph by translating each word, phrase, and sentence. Another issue can be seen in how the respondent (SAK), who had a choice of several alternative translations, chose the right one. In this case, the respondent must select the proper term from a list of possible words in the following protocol:

“OK, kayaknya gak pernah denger... Bois... bois... bois...eee, boisterous bois, boisterous ramai, ribut, gemuruh, mungkin dia masuknya keramai. (SAK)”

The above protocol shows that the respondent (SAK) tried finding the correct translation in the target language for the word “boisterous”. The possible alternatives that the student found are *ramai*, *rebut*, and *gemuruh*. Then the respondent decided the word “*ramai*” was the correct equivalent.

The data mentioned above demonstrate that translation abilities are essential to reading comprehension. Reading comprehension is the process of extracting and simultaneously making meaning by interaction with the written language in the text, whereas translation is the process of translating the meaning of a text into another language in the manner intended by the text’s author (Pham, 2017; Rushwan, 2017). Pham (2017) and Rushwan (2017) further claimed that translation abilities have a substantial impact on reading comprehension, and conversely, reading comprehension has an effect on the performance of translation outputs. The concept conveyed by these two prior researchers (Pham, 2017 and Rushwan, 2017) highlights that in order to comprehend a text, it is essential to be able to interpret words, phrases, and sentences in accordance with the text’s original meaning. This concept is aligned with the translation function in comprehending text messages, which is the process of re-disclosing messages with the closest meaning and style of language from the source language into the target language (Ismail et al., 2017; Maximilian, 2020).

Having weak syntactic parsing

In this case, the respondents tend to be weak in obtaining clues/keywords, so in the process of verbalization of reading and understanding, many experiences pause, irregular

intonation, and even inappropriateness. Here, the respondents were weak in comprehending and tended to read word for word rather than understanding the syntactic structure at a high level, up to 83,3% (SA = 68,9% + A = 14,4%). This problem can be seen when the respondents tried to spell a difficult word while finding the meaning of a word in the dictionary. The respondent (SUK) spelled the difficult word during the process of finding the meaning of a word in the dictionary, as given in the following data:

“Predict itu... aku lupa bahasa Indonesianya predict... eh sumpah aku lupa bahasa Indonesianya predict... predict, predict, predict... apa sih predict, predict, predict... Meramalkan, ya meramalkan. Pada akhirnya meramalkan bagaimana orang akan bertindak itu seperti meramalkan sebuah cuaca dibulan yang random saat ini, ditempat yang random, dan diwaktu yang random. (SUK)”

The above protocol indicates that the respondent (SUK) repeated the word "predict" several times. The students got difficulty finding the equivalent in the target language. This respondent tried to find the meaning in the target language by repeating it, and finally, the student decided that the correct equivalent into "*meramalkan*."

The second problem is that the respondent repeated the words /phrases/clauses during the process of comprehending the reading text, as shown in the following protocol:

“One can be a musician who plays slowly or quickly with small hand movement or sweeping ones, one can be aggressive it is stuck of market with a quiet temperament or a boisterous, bois..bois.. OK, kayaknya gak pernah denger... Bois... bois... bois...eee, boisterous bois, boisterous ramai, ribut, gemuruh, mungkin dia masuknya ke ramai. A quiet temperament or boisterous one. Dia berarti bisa aggressive di pasar dengan tempramen yang calm, quiet itu tenang, tenang atau tempramen yang tadi boisterous, tempramen yang ramai, ribut, gemuruh kayak lebih rame mungkin...yang tenang atau yang ramai. (SUK)”

From the interview session, the respondent (SUK) said that spending much time repeating the problematic term while reading the text could help them recall the memory. The protocol could indicate that the respondent repeated the word "boisterous" several times. Finally, the respondents got the meaning by reading the whole context. This evidence demonstrates that syntactic knowledge plays a crucial role in analyzing the content of discourse, such that sentence construction in a discourse is not misinterpreted (Abu-Rabia, 2021; Syarif, 2017). Syntax is the study of language units, such as sentences, clauses, phrases, and words (Fromkin, 2003). If the EFL learners have the proper syntactic competence, it is easy to understand discourse. In addition, respondents' lack of vocabulary makes it difficult for them to comprehend the contents of the provided text (Cain & Oakhill, 2014; Gottardo et al., 2018). Multiple repetitions of the same word or phrase indicate a lack of language competence. English department students who programmed intermediate reading courses are suggested to perform vocabulary excellence, so that repetition of words, phrases, or simple sentences will not appear. Adequate vocabulary aids EFL students in comprehending difficult terms in discourse such that there is no repetition of the same word in text interpretation.

Less inference

Less inference means that the readers have limitations in interpreting words and do not understand words according to the context in which they are written. A word may have many meanings in different situations, so the reader must choose the most appropriate equivalent for the term given in the source text. Dictionaries can be helpful when the readers are reading because they help them find out the meaning of words they do not know. However, using a dictionary too much can cause problems with reading skills. The following protocol shows that the respondent (DIR) consulted the dictionary while they were reading the text by finding the problematic words or phrases in the appropriate equivalent.

Parents know better, orang tua tau lebih baik and know that their children dan lebih tau anak anak mereka are born lahir with very different dispositions, dispositions itu di kamus watak, sifat orang tua tau lebih baik dan tau bahwa anak anak mereka lahir dengan watak yang sangat pasti very definite dispositions. (DIR)

The respondent (DIR) tried to find out the meaning of the word "dispositions" in the dictionary from the above protocol. There were 81,7% (SA = 66,2% + A = 15,5%) of the respondents who often consulted a dictionary and adjusted the meaning in the dictionary according to the context of the sentence. In the interview session, some respondents also said that they read paragraph by paragraph, underlined the problematic vocabulary, then consulted the dictionary. Finally, they concluded the intention of the text. Besides consulting the dictionary, the reader often uses references such as books, opinions of others, and previous translations. The respondent (RIA) used the references as a fundamental to translate certain words as shown in the following protocol:

"Temperament refers kata temperament ini juga merujuk to the style rather than merujuk kepada style mm lebih mengacu atau merujuk pada gaya gaya than rather than daripada to the content of behavior behavior perilaku konten konten kepada merujuk kepada .. ee sikap atau perilaku. (RIA)"

Moreover, the respondent (RIA) often tried to guess the correct meaning from the surrounding context, as shown in the following protocol. The respondent tried to guess the phrase "reads the sport pages."She did not know the intention of the whole sentence.

reads the sport pages... reads the sport pages? membaca halaman olahraga?...maksudnya?...suka membaca..ah.. (RIA)

During the interview session, the respondent (RIA) stated that the reading strategy that she used is trying to comprehend the paragraph by finding the meaning of each sentence. If she could not get the word's meaning, she tried to predict from the surrounding context. If the new word bothered her or him during the reading process, then she or he consulted the dictionary.

The data mentioned above highlights the essence of the language knowledge of EFL learners in making conclusions that are correct and meaningful. This idea is aligned with the function of inference and context in determining the meaning of words. In fact, the inference is defined as the reader's ability to make a conclusion from the information provided (Cain et al., 2004; Day & Gentner, 2007; Prior et al., 2014). In this article, however, inference refers to the respondents' ability to draw conclusions based on the meaning of

words in the discourse they read. It is impossible to separate meaning from context when analyzing words in the reading material someone reads. Context aids EFL students in interpreting word-for-word to generate an acceptable inference.

Inadequate self-monitoring

In this study, the respondents show their inability to monitor comprehension of the text or are inconsistent in monitoring comprehension of the text up to 84% (SA = 64,4% + A = 19,6%). Doing previewing is a simple yet effective reading strategy that involves skimming the assigned reading before the reader starts reading. It would help the reader connect with what they read by creating a purpose and context for their reading. It also helps the reader activate the background knowledge base, which aids comprehension. The students tend to read sentence by sentence. In this study, the respondents often used intuitions /feelings in choosing the appropriate translation. The following protocol shows that the reader guessed the words, phrases, clauses, or sentences based on their intuitions and feelings.

“Kita bisa katakana kalo itu tu “bagaimana” sebuah sikap bukan “apanya” sikap, mungkin kayak gitu deh artinya. Personality, on the other hand, is the full-blown complex set of reaction that distinguish in distinguish an individual. Distinguish itu kayak... bentar... distinguish... disti...nguish... where is distinguish... emm.. membedakan tau mengenal... berarti personality itu adalah sebuah pusat complex of reaksi yang membedakan seorang demi seorang, oh yaya...personality. (SUK)”

The above protocols show that the student (SUK) could not understand the sentence. She used her feeling to predict the intention of the text. She said the word “kayak gitu deh artinya”. It also found that the student had a problem with grammatical reasoning in choosing the appropriate translation. The reader realized that reviewing her translation is necessary to refine it into a better translation result.

“And then my brother is much harder worker my brother is saudara laki-laki saya is much harder worker lebih pekerja keras than I am daripada saya. How can I match him, how can bagaimana bisa I match, match artinya pertandingan how can I match him ee bagaimana saya bisa oh menandingi dia. (RIA)”

She (RIA) had a grammatical reason for changing the word "match" into a verb in the target language. The translation of the word "match" is “*menandingi*” as a verb, not “*pertandingan*” as a noun in that sentence. The subject often changed or improved the translation of a word/phrase while reading the text. The subject should develop their understanding more deeply in analyzing the grammatical feature (syntactic), so he or she would get the appropriate equivalent to their translation. Further, the students also comprehended the meaning of words/phrases/clauses from the source language in the target language. In order to get a good comprehension, the student often checked the sentence like the following protocol:

“And next why am I always artinya kenapa saya selalu getting into battles with my boss ee mendapat getting mendapatkan into battles mendapatkan atau mendapatkan pertengkaran gitu nggak sih maksudnya battles mendapatkan atau terlibat di dalam pertengkaran artinya why am I always getting into battles kenapa saya selalu terlibat di dalam pertengkaran with my boss dengan bos saya and my children dan dengan anak saya. (RIA)”

Careless translation will affect the reader's interpretation of the whole story. Here, the student (RIA) should pay careful attention to English structure and tense. The students should carefully reread the whole translation and check for the semantics, stylistics, and many more. It may help the students in producing a good comprehension.

From the problem above, the students should be able to monitor and adjust their reading comprehension and use some strategies to assist comprehension of reading content. Self-monitoring is a tool for EFL students to interpret the text's meaning (Balashov et al., 2018; Joseph & Eveleigh, 2011). While the teacher should observe how well students can understand the texts they are reading. At the same time, the students should be able to do self-monitoring. It could be done by detecting any problems encountered and applying strategies to fix the problem. When the students get confused or lose meaning, they must stop reading and try to go back and clarify their understanding. There are some ways to help the students to comprehend the reading text, such as making the connection (link what the student are reading to things they already know), making predictions, visualizing, making inferences, self-questioning, and summarizing (Gilakjani & Sabouri, 2016; Qanwal & Karim, 2014).

Moreover, the reader should be able to connect to the reader's previous life experiences, such as cultural and social connections. Here, making connections means the reader should be able to connect to the content of the text and the structure used in the text. Then, predicting is the comprehension strategy in which the reader tries to determine future ideas and events before they appear in the text. Good readers should be able to anticipate and predict what will appear in the text. While visualizing is used by the readers to create a visual image in their minds. Through visualizing, students learn how to use their imaginations to understand the text being read and, further, can make the text alive and vibrant.

Additionally, the reader can imagine how they feel and what they are like. The reader learns how to build meaning by using what they already know (inferring) and the implicit information the author provides. Readers should use this strategy to recognize that meaning may not always be explicit. Inferring refers to the act of reading between the lines. It means that the reader works with the author's clues to gain comprehension. Here, the reader should instinctively and purposefully ask questions before, during, and after reading. The next strategy that can be used is self-questioning. Self-questioning refers to a comprehension strategy in which the readers try to ask questions in their minds to check that they understand what they read. This strategy could assist them in monitoring their own reading. Besides, summarizing also is a good strategy where the reader to determine what information is important. The reader will learn to differentiate between the most important pieces of information and the supporting details and determine keywords, facts, and main ideas.

CONCLUSION

According to the findings of the research, there were four major issues faced by the undergraduates. The inability to understand word, phrase, and sentence processing. It can be seen when the students got difficulty finding the appropriate meaning in the target language. Some subjects did not fully understand the intention of the source language text, but they still faced problems in conveying it in the target language. Then, having weak

syntactic parsing. The students were lack of comprehending and understanding of the syntactic structure. Some students tried to spell the difficult word while finding the meaning of a word in the dictionary. Next, less inference. The students had limitations in interpreting words and did not understand words according to the context in which they were written. The last is inadequate self-monitoring. In this case, the student showed their inability to monitor comprehension of the text or was inconsistent in monitoring comprehension of the text. Based on the problem, the reading lecturers are suggested to determine the students' reading comprehension needs, check and modify students' reading comprehension, and students are asked to employ some relevant tips in comprehending reading, such as creating good connections (between what students are reading and what they already know), making predictions, visualizing, making inferences, self-questioning, and summarizing.

This research is insightful and has proven that the Think-Aloud Protocol provides an option for analyzing EFL students' reading comprehension problems. However, there are limitations to this study, such as the fact that the research instrument focuses on adapting the theory popularized by Vygotsky (1962) and the data collected primarily from English education students at Universitas Mahasaraswati Denpasar. The further researchers are expected to develop instruments based on the theories of other experts and respondents from non-English students.

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