Use of L1 in L2 reading comprehension among tertiary ESL learners

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Abstract

This study is an attempt to provide insights into the extent of first language (L1) use while reading second language (L2) texts in a collaborative situation among tertiary ESL learners. Through the identification of reading strategies utilized by the subjects, the study is also aimed at discovering possible reasons for the use of L1 while comprehending L2 texts. Four students, whose L1 was Bahasa Melayu, were placed in a group and asked to think aloud while reading English texts. Analyses based on the think-aloud protocols were made to identify the reading strategies utilized by the students. Through these reading strategies, it was found that the L1 was used by all the students in the study and that more than 30% of the total instances of strategy use involved the L1. The study also revealed various reasons for the students' use of the L1 while reading L2 texts particularly in the context of group reading. One reason was that the L1 facilitated resolutions of word-related and idea-related difficulties. Furthermore, using the L1 might have helped the students reduce affective barriers and gain more confidence in tackling the L2 texts.
Keywords: First language, collaboration, reading strategies, think-aloud, text comprehension

Introduction

The use of first language (L1) by second language (L2) readers to help them comprehend texts has been noted (e.g., Block, 1986; Kern, 1994; Jiménez, García, and Pearson, 1996; Upton, 1997). While there are studies to understand further the role of L1 use in comprehending L2 texts (Cohen 1995; García, 2000) these studies have thus far focused on the individual reader. Efforts (e.g., Beck, McKeown, Worthy, Sandora and Kucan, 1996; Klingner, Vaughn and Schumm, 1998) aimed at engaging students in understanding what they read in collaborative discussions placed great emphasis on the central role of social interaction in the process of learning. However, not much is known with regards to the extent of L1 use and the possible

reasons for its use in small reading groups in the L2 classroom. This study seeks answers to the question of L1 use in comprehending L2 texts in a collaborative environment.

Literature Review

The issue of L1 use in the ESL class is, to a certain extent, no longer a contentious one (Auerbach, 1993; Polio, 1994). Auerbach (1993: 1) argued that the "use of students' linguistic resources can be beneficial at all levels of ESL." Similarly, Cook (1992) reminded teachers that whether they want it to be there or not, the L1 is ever present in the minds of their L2 learners. Furthermore, translation is a frequently cited cognitive strategy in L2 reading (Anderson, 1991; Block 1986; O'Malley and Chamot, 1990). L2 readers have been found to rely on translation in the process of comprehending L2 texts and that the degree of such reliance is related to the level of proficiency (Kern, 1994; Upton, 1997).

In a study investigating the language of thought used in comprehending L2 texts among fifty-one students of French, Kern (1994: 455) found that mental translation during L2 reading played "an important and multidimensional role in the L2 reading comprehension processes" of the students. However, Kern also pointed out that translation can be unproductive when it is done in a word-by-word fashion without integration of meaning. In general, Kern (1994: 442) suggested that teachers and L2 learners should not view translation as "an undesirable habit to be discouraged at all costs but, rather, an important developmental aspect of L2 comprehension processes."

The Reading Process

Research into the nature of the reading process is abundant and various reading models have been proposed (see Ruddell, Ruddell, and Singer, 1994) based on a variety of theoretical perspectives. Barnett (1989) pointed out that a reading model provides an imagined representation of the reading process. Models of the reading process can generally be placed across a continuum of two opposing approaches in understanding the reading process, namely, bottom-up approaches and top-down approaches. However, as Hudson (1998: 46) noted, "most current researchers adhere to what has been termed as interactive approaches." These three approaches are based on the reading activity that necessarily involves two elements: the text and the reader. A third element, namely the writer, is also important (e.g., Widdowson, 1984) but is often not emphasised in the approaches mentioned. Nevertheless, the major distinction between the approaches is the emphasis given to text-based variables such as vocabulary, syntax, and grammatical structure and reader-based variables such as the reader's background knowledge, cognitive development, strategy use, interest, and purpose (Lally, 1998).

Interactive approaches

Grabe (1991) claimed that the term interactive approaches refers to two different conceptions. Firstly, it can refer to the interaction that occurs between the reader and the text whereby the reader constructs meaning based partly on the knowledge drawn from the text and partly from the existing background knowledge that the reader has. Secondly, the term refers to the interactivity occurring simultaneously between the many component skills that results in reading

comprehension. Therefore, he asserted that from an interactive approach, the reading process is seen as involving "both an array of low-level rapid, automatic identification skills and an array of higher-level comprehension/interpretation skills" (Grabe, 1991: 383).

A model that would be a good example of such an approach is the interactive-compensatory model presented by Stanovich (1980). Hudson (1998: 50) explained that Stanovich's model incorporates an assumption that "a deficit in one of the component subskills of reading may cause a compensatory reliance on another skill that is present." For instance, poor word recognition (i.e., lack of ability in a lower level) can be compensated by extra reliance on contextual factors (higher level skills). On the other hand, a lack in background knowledge may be compensated by a reliance of bottom-up processing of a word or phrase in order to construct meaning.

In summary, interactive approaches in reading theories reflect the view that the reading process is an interactive process between the reader and the text and that it is bi-directional in nature involving both bottom-up processing and top-down processing. Such a view of the reading process is widely accepted by researchers in that both the bottom-up process and top-down process interact (Block, 1992) and that the reader actively interacts with the text using both processes.

Such a view of the reading process is also taken in this present study. As such, the reader is seen as a cognitively active learner and it is seen that an effective reader reads strategically (Dole, Duffy, Roehler, and Pearson, 1991). While an interactive approach to the reading process is adopted, the reading activity is viewed as resembling a problem solving activity where strategies are utilised in managing the reader's interaction with the text. In addition, these strategies reflect the bottom-up and top-down processing involved in the reading process.

Reading Comprehension Strategies

Paris, Wasik, and Turner (1991) pointed out that consensus among researchers for a concise definition of reading strategies is difficult. This is due to various persisting problems such as: a) differentiating reading strategies from other processes like thinking, study or motivational strategies; b) determining the scope of strategies – are they global or specific?; and c) deciding if strategies involve intentionality and consciousness. Thus, researchers have referred to reading strategies in various ways and have mostly described what the strategies are.

However, it is necessary to have a general understanding, at least, of what reading comprehension strategies are in relation to the current study. According to Barnett (1989: 66), reading strategies refer to the "mental operations involved when readers purposefully approach a text to make sense of what they read." In a way, reading strategies reveal the readers' resources for comprehension and indicate how readers conceive a task, what textual cues they attend to, how they make sense of what they read, and what they do when they do not understand (Block 1986). They range from bottom-up vocabulary strategies such as simply rereading difficult segments and guessing the meaning of an unknown word from context or looking up the word in the dictionary, to more comprehensive strategies such as summarising and relating what is being

read to the reader's background knowledge (Janzen, 1996). Put simply, reading strategies are "plans for solving problems encountered in constructing meaning" (Duffy, 1993: 232).

Studies on reading strategies reflect a shift in attention from a focus on the product of reading, e.g., a score on a reading comprehension test, to process-oriented research which emphasise determining the strategies that readers actually use while they are reading. Reading strategies are of interest for what they reveal about the way readers manage their interaction with the written text and how these strategies are related to text comprehension (e.g., Carrell, 1989).

Reading Strategies of L2 Readers

Block (1986) carried out a study with the purpose of identifying and describing comprehension strategies of ESL students designated as non-proficient readers. Arguing for a process-oriented research, Block (1986) used think-aloud protocols as her research method as she believed that the protocols would act as a kind of window into those usually hidden mental processes involved while reading. Block reasoned that since think-aloud was developed by Newell and Simon (1972) to study cognitive problem-solving and that "reading may also be considered a kind of problem-solving activity (Thorndike, 1917), and so think-alouds can be adapted for reading research" (Block, 1986: 464). Analysing the think-aloud protocols of her subjects, she placed their comprehension strategies in two categories, a) general strategies (e.g., anticipate content, recognise text structure, question information in the text) and, b) local strategies (e.g., paraphrase, reread, solve vocabulary problem).

Block's (1986) study showed that the number of strategies involved can be staggering. Sarig (1985, cited in Cohen, 1990) found that a group of ten high school Hebrew speaking students used approximately one hundred and thirty different strategies while reading Hebrew as a native language and English as a foreign language. Various taxonomies of strategies have also been suggested in other studies (e.g., Anderson, 1991; Jiménez, García, and Pearson, 1996; Kern 1989; Knight, Padron, and Waxman, 1985).

Although the use of L1 (especially the strategy of translation) has been noted in various taxonomies of reading strategies among L2 readers, these studies were all focussed on the individual reader. Little is known about the use of L1 as L2 readers read in a group. How much L1 do the L2 readers use (if at all) when reading in a group? What strategies are utilised? In what language(s) are those strategies carried out? What are the reasons for using the L1 while reading in a group?

Based on the discussion above and the various queries made, the present study seeks to answer the following research questions:

> 1. To what extent is the L1 used while reading L2 in a group?
> 2. What are the reading strategies expressed most in the L1 while reading L2 in a group?

Procedures

Subjects

The subjects of this study were four undergraduates of Universiti Pendidikan Sultan Idris (UPSI) who were in their second semester (first year) of their Bachelor in Education (B.Ed.) course. These four students were actually the focal group drawn from a class of students who were the subjects of a larger study which is not reported here. Due to various circumstances and selection criteria in the larger study, the subjects were all Malay females. Table 1 provides information pertaining to the background of each student and also their language proficiency as indicated through their results obtained in the various English language examinations.

Table 1: Results in English Language Examination

Subject	Sex	Age	SPM English (Malaysian National Examination, Best score - 1)	English 1119 (O level, Best score-1)	MUET (Malaysian University English Test, Best score- 6)
Az	Female	22	7	9	2
Ra	Female	23	7	-	2
Ai	Female	26	8	-	2
Di	Female	22	4	4	3

Data Collection and Analysis

The main aim of the present study is to examine the use of L1 as students read in a group. More specifically, the study aims to a) investigate the extent of L1 use among L2 readers as they read L2 texts in a group and b) identify the reading strategies that are expressed most in the L1 during group reading. Such aims require the use of data collecting instruments that will allow the researcher to probe into the process of reading. In this study, think-aloud protocols were used as the means for looking into the process of reading by the L2 readers in their group in order to get a better picture of their use of L1 (and L2) while reading.

Matsumoto (1993: 34) explained that think-aloud is a data collection method whereby informants are asked to say "what they are thinking and doing (i.e., everything that comes to mind) while performing a task." Applied particularly to the area of reading, think-aloud can be seen as the reader's verbalisation of his or her mental processes while engaged in reading.

In the past three decades, the think-aloud procedure has increased in popularity among researchers as a data collection instrument in areas of research that espouse a cognitive perspective such as problem solving and second language learning (Ericsson and Simon, 1987; Ericsson and Simon, 1993; Faerch and Kasper, 1987).

However, it should also be noted that the procedure, as with any other procedures, is not without criticisms leveled against it. Most notably, the criticisms (e.g., Nisbett and Wilson, 1977) are that the procedure provides only an incomplete account of the thought processes being reported and also that the procedure itself changes informants' thought processes. These criticisms have, nonetheless, been answered adequately through the works of various researchers such as Erricsson and Simon (1993) and Pressley and Afflerbach (1995).

The incompleteness of the thoughts processes is inevitable, and most researchers do not depend solely of think-aloud protocols but triangulate the think-aloud data with other forms of verbal data obtained through other means such as retrospective interviews with the informants. Furthermore, most researchers do not aim to obtain a detailed and complete account (if that was possible) of the comprehension processes in a research that is usually very focused.

Besides, advocates of the think-aloud noted that the procedure does not actually change the nature of the thought processes of the readers or informants but merely slowed down the process. In reading research, works by Afflerbach and Johnston (1984), Cohen (1996), Cohen and Hosenfeld (1981), Kucan and Beck (1997) and, Pressley and Afflerbach (1995) have continued to uphold the suitability of think-aloud and have contributed to the present considerable popularity of protocol analysis (Afflerbach, 2000). Hence, although the think-aloud procedure may have its limitations, the extensive use of the procedure in collecting "verbal protocols" is due to its ability to provide researchers with insights into hidden processes of reading comprehension (Block, 1986; Crain-Thoreson, Lipmann and McClendon-Magnuson, 1997).

The subjects in the present study were given training in thinking aloud prior to data collection. The training involved the use of three training modules developed based on suggestions and procedures given by researchers (e.g., Ericsson and Simon, 1993) who have studied the use of think-aloud as a research tool, and also researchers (e.g., Aebersold and Field, 1997; Davey, 1983) who have advocated the use of think-aloud as a pedagogical tool. The training sessions were deemed important so as to equip the students with the necessary skills needed so that they were able, willing and comfortable to think aloud while reading.

After the training, the subjects were asked to verbalise their thoughts while reading in a group. Following Jiménez et al. (1996) and Upton (1997), these students were allowed to use "whatever language they felt most comfortable using" (Jiménez et al., 1996: 98) during their think-aloud and the resulting discussion that ensued in their attempt to comprehend the text.

The group reading and think-aloud were audio-taped and video-taped. Video-recording was necessary so as to ascertain who said what during the transcription. The audio-recorded think-aloud and verbal discourses by the students were transcribed and the protocols were then analysed in order to identify the reading strategies of the students. The processes of identifying and coding the strategies are described.

In preparing to code the strategies uncovered during analysis of the protocols, reading strategies were tentatively identified based on Anderson (1991), Block (1986), Jiménez et.al (1996), and Steinberg, Bohning and Chowning (1991). This initial list of strategies was then refined based on data from a preliminary study that was carried out earlier. The second list was further refined

once the audio-recorded data in the actual study was collected and transcribed. Although the intention here was to delineate as many as possible the strategies exhibited by the students in this study, it was not to "exhaust the domain of possible strategies" (Block, 1986: 470).

The process of refining the second list in order to acquire the list of strategies for the purpose of data analysis is hereby further described. The transcripts were read through carefully and parts of the protocol containing the possible use of strategies were determined. This was necessary as the data (verbal protocol) was a complex mixture of think-aloud comments by individuals, group discussion, comments related to group administrative matters, backtracking, and discussions with the instructor who joined the group from time to time. During this phase the parts that indicated any overt purposeful effort (i.e., strategies) or activity used by the reader or group members to make sense of the text (Jiménez et al., 1996) were identified and marked.

Essentially the parts of the protocols that were marked as containing reading strategies were the think-aloud comments by individuals and the group discussion pertaining to the comprehension of the text read. After marking the parts, the second list of strategies was then used in identifying any particular strategies demonstrated in the marked sections. For the strategies to be identified during analysis, some form of verbalisation of the strategies was necessary although students did not have to explicitly identify or define them (Jiménez et al., 1996).

There were occasions where two different strategies seemed to overlap during the assignment of a particular strategy. For example, a question asked in the L1 [*Makhluk asing sakit-lah ni*? (So these aliens are sick?)] could perhaps be classified as either the strategy of translation or questioning. Based on the context and also the description and example given in the list of strategies as a guide, it was classified as questioning because the primary function of the utterance in that particular context was to question and not to translate the idea.

At this stage also, strategies that were identified in the data but were not found in the list of strategies were then added to the list. As an example, the use of the dictionary was found to be utilised by the students and hence added to the list of strategies identified. On the other hand, strategies that were listed but were not identified in the data were omitted from the list. For instance, the strategy of visualising was not identified in the protocol of the actual study and was therefore deleted from the final list. In short, strategies were added to or deleted from the second list and the description of each strategy rewritten to reflect the strategies identified in the data of the actual study until a stabilised list of strategies was obtained.

The stabilised list of strategies (Appendix A) was then used to assign appropriate labels to the identified strategies in the protocol for analysis purposes. As a way of establishing the reliability of the coding, two independent raters were given the stabilised list of strategies together with the definition and example of each strategy. The raters were asked to code the strategies in the protocol using the list. Furthermore, they were also asked to identify strategies that they thought were used by the students but were not listed so that a final list may be acquired.

The raters' codings were then compared with the researchers' own coding as well as between the raters themselves in order to determine inter-rater reliability. The codings in the first two group reading (representing 33.39% of the total number of strategies coded) were used for the purpose

above. The percentage of agreement between the researchers and one rater was 84.50% and with the other rater was 86.63%. The agreement between the two independent raters themselves was 83.56%. Discrepancies in the assigning of codes were resolved through discussion with the raters and that consensus was the governing principle (Jiménez et al., 1996). Furthermore, the raters reported that they did not find any strategies used by the students that have not been accounted for in the list given them.

Strategies identified through the protocols were analysed in order to examine the reading behaviour of the subjects as they attempted to collectively comprehend the reading text. The analyses have provided clearer understanding on the types and frequencies of strategies used. This in turn revealed how the students went about comprehending the text when asked to think aloud during reading in a collaborative environment. The findings of the analyses are given in the next section.

Results

Analyses of the data revealed that, besides the L2, the L1 was also used in many of the reading strategies utilised by the students. The following extracts provide some examples showing how the L1 and L2 were used when the various strategies were being employed. Example 1 shows the employment of the questioning (idea-related) strategy while Example 2 is a paraphrase by one of the students. In both these examples, the L2 (English) was used throughout the whole sentence.

Example 1

> **Az** - *They can do anything when the researcher not have in the room, right?*

Example 2

> **Di** - *So it's when, when we are at home, if someone disturb us to study so we need to find a alternative place.*

On the other hand, the L1 of the students (which is Bahasa Malaysia) was used throughout some sentences as shown in Examples 3 and 4. In questioning a particular idea in the text, one of the students (Ra) utilised her L1 to express the strategy by asking in the L1. In Example 4, another student (Di) used her L1 in relating the content of the text read to her prior knowledge. Thus, it can be seen that the students were not using the L2 only as they read and tried to comprehend the text but they were also using their L1 while doing so.

Example 3

> **Ra** - *Makhluk asing ini menyumbang macam mana?* (How did these aliens contribute?)

Example 4

> **Di** - *tak ada orang yang buat macam itu kan kalau I ingat* (Nobody does this kind of thing, right, if I remember)

Besides that, both the L1 and L2 were sometimes used at the same time in expressing a strategy. While relating what she once saw on television regarding aliens to the text being read (see Example 5) Ra started off with the L2 and then switched to the L1 in mid-sentence. In another instance (see Example 6), she attempted to paraphrase what she had just read by using only the L1 but inserted a lexical item from the L1 (*habiskan* means 'to finish') towards the end of her sentence.

Example 5

> **Ra** - *Baik, on television, I saw, alien ini macam manusia juga tapi dia orang reka cerita.* (Right, on television, I saw, this alien is also like a human but they are invented stories)

Example 6

> **Ra** - *ahh, Because, ahh, because the research says if, if, ahh, if the children, ahh, habiskan // the sweet*

Switching from one language to another language or the use of two languages in a sentence is a common phenomenon among bilinguals. This is because bilinguals (and multilinguals) have more than one language in their verbal repertoire. According to Platt and Weber (1980: 137) verbal repertoire means "all the languages (or sub-varieties of languages) that an individual is able to speak or understand."

Such a phenomenon where speakers switch from a language to another is the subject of studies and discussions in the domain of sociolinguistics (e.g., Fasold, 1984; Gumperz, 1982) and particularly the field of bilingualism (e.g., Auer, 1990; Grosjean, 1982; Platt and Weber, 1980; Romaine, 1995). Additionally, the phenomenon is also taken into consideration in the field of applied linguistics and second language acquisition (e.g., Cook, 1996; Ellis, 1985; Marasigan, 1983) because learners of second (or another) language would inevitably have learned a first language. Hence, the role of the L1 or the use of it is pertinent in issues such as transfer of or interference from the L1 or even as a learning strategy in the process of second language learning.

In sociolinguistics, the terms generally used to characterise the use of two (or more) languages in a discourse are "code-switching" and "code-mixing". Richards, Platt and Platt (1992: 58 -59) described code-switching as "a change by a speaker (or writer) from one language or language variety to another one" while code-mixing is "a mixing of two codes or languages, without a

change of topic." In a way, it can be noted that Example 5 above illustrates code-switching whilst Example 6 illustrates code-mixing.

For the purpose of this study, no distinction is made between code-switching and code-mixing as the emphasis here is on the use of L1 in the strategies employed. Nonetheless, the term mixed language (M) shall be used in this study to refer to the phenomenon where generally two languages (Bahasa Malaysia and English) are used in the same sentence or in the execution of a reading strategy. Hence, analyses and discussions that follow regarding the use of L1 will include the M too because the L1 is an inherent part of the term mixed language.

Briefly, three categories of language use in the employment of the strategies were determined and these are the first language (L1), the second language (L2), and mixed language (M). These three categories were used during analyses to examine the extent in which the L1 was used by the students. For each instance of strategy use, the language used was noted and then assigned to one of the three categories mentioned earlier. Upon completion of the assignment, frequencies and percentages were calculated. For the purpose of analysis, the number recorded in the category of M will be added with the number in the category of L1 and be considered as the overall record of L1 use. The frequencies recorded according to the three categories are given in Table 2.

Extent of L1 Use

The frequencies in which a strategy was expressed in the three categories discussed above are given in Table 2. The table provides information regarding the extent in which a strategy was expressed in the categories of *L1, L2,* or *M* by each student and also provides the total for the data set.

Table 2 is divided into two sections – Section A consists of the text-based strategies and Section B the reader-based strategies. In each section the frequencies of each strategy used by each student under the categories *L1, L2,* and *M* are given. In addition, the number of strategies (sub-total A in Section A and sub-total B in Section B) and the percentages under each category are also shown. Finally, the total number of strategies (and the corresponding percentage) in each category is calculated by adding the figures in sub-total A and sub-total B. Thus, say for the student named Az, the number of text-based strategies under the L1 category and M category is 10 (4.8%) and 22 (10.5%) respectively as shown in sub-total A. Additionally, sub-total B shows that the number of reader-based strategies (for Az) under the L1 category is 17 (8.1%) and M category is 19 (9.0%). Adding both these categories (L1 and M) from both Sections A and B will give a total of 32.4%. This percentage indicates that of the 210 instances of strategy use attributed to Az, 32.4% (or 68) of those instances involves the use of the first language (L1). It is clear from the table that all four students in the focal group had used the L1 in the strategies they utilised. Ra recorded the highest use of L1 with 35.5% of the strategies she employed involved the use of L1 (i.e., the categories of *L1* and M) while Az recorded 32.4%, Di 31.4%, and Ai 25.9%. The percentage of L1 use for the total (618 strategies) stood at 32.2% (199 strategies).

It should be noted, however, that the strategy of rereading inevitably involves the use of only the L2 because L2 texts were being read. Furthermore, the rereading strategy was the most frequently used strategy (95 instances) and thus contributed considerably to the overall percentage of L2 use. For that matter, although Ai recorded the lowest percentage of L1 use among the four students, the low percentage is due to the fact that the strategy of rereading (where only L2 is used) accounted for almost one third of her total instances of strategy use and not because she used the most L2 compared to the others.

If the strategy of rereading is excluded from the calculations and analyses of L1 use because it is inherently L2, then the overall percentage of L1 use would have been much higher, that is 38.1%. Nonetheless, this is not done because, like rereading in which the L2 had to be used, there are also strategies that inevitably involve the use of the L1, namely, translating . Thus, the data analysis pertaining to the use of L1 is based on the whole data set whereby all the strategies identified were used in the calculations.

Table 2: Frequency of L1 Use

Students	Az				Ra				Ai				Di				Total			
A) Text-based Strategies	L1	L2	M	T	L1	L2	M	T	L1	L2	M	T	L1	L2	M	T	L1	L2	M	T
Rereading	-	25	-	25	-	25	-	25	-	33	-	33	-	12	-	12	-	95	-	95
Summarising	-	4	2	6	-	1	3	4	-	-	-	-	-	2	-	2	-	7	5	12
Paraphrasing	4	25	8	37	-	16	2	18	2	10	-	12	4	26	6	36	10	77	16	103
Using context	-	15	1	16	-	12	4	16	-	4	2	6	1	8	-	9	1	39	7	47
Using text structure	-	2	1	3	-	2	1	3	-	-	-	-	-	2	1	3	-	6	3	9
Questioning (word-related)	-	9	-	9	-	12	3	15	-	6	1	7	-	4	-	4	-	31	4	35
Questioning (idea-related)	5	9	6	20	3	5	6	14	3	5	1	9	-	-	1	1	11	19	14	44
Recognising Word	1	5	3	9	-	6	2	8	-	-	-	-	2	2	2	6	3	13	7	23
Using Dictionary	-	-	1	1	2	6	1	9	1	3	-	4	-	1	-	1	3	10	2	15
Sub-total A	10	94	22	126	5	85	22	112	6	61	4	71	7	57	10	74	28	297	58	383
Percentage	4.8	44.8	10.5	60.0	2.6	43.8	11.3	57.7	6.5	65.6	4.3	76.4	5.8	47.1	8.3	61.2	4.5	48.1	9.4	62.0

Note: Total not exactly 100.00 due to rounding

Students	Az				Ra				Ai				Di				Total			
B) Reader-based Strategies	L1	L2	M	T	L1	L2	M	T	L1	L2	M	T	L1	L2	M	T	L1	L2	M	T
Translating	9	-	8	17	8	-	18	26	6	-	3	9	7	-	4	11	30	-	33	63
Guessing	2	13	3	18	4	11	4	19	3	1	2	3	-	4	1	5	9	29	10	48
Inferencing	3	10	4	17	1	5	3	9	-	1	-	1	3	7	3	13	7	23	10	40
Rejecting or Confirming guess	1	3	1	5	1	5	-	6	-	-	-	-	2	6	-	8	4	14	1	19
Expressing need for a dictionary	-	1	-	1	-	2	-	2	-	1	-	1	-	1	-	1	-	5	-	5
Using prior knowledge	1	4	2	7	-	5	2	7	-	-	-	-	1	2	-	3	2	11	4	17
Reacting to text	-	3	-	3	-	1	-	1	-	-	-	-	-	-	-	-	-	4	-	4
Reading on	1	6	1	8	-	8	-	8	-	2	-	2	-	3	-	3	1	19	1	21
Evaluating Comprehension	-	8	-	8	1	3	-	4	-	3	-	3	-	3	-	3	1	17	-	18
Sub-total B	17	48	19	84	15	40	27	82	9	8	5	22	13	26	8	47	54	122	59	235
Percentage	8.1	22.8	9.0	39.9	7.7	20.6	13.9	42.2	9.7	8.6	5.4	23.7	10.7	21.5	6.6	38.8	8.7	19.7	9.6	38.0
TOTAL	27	142	41	210	20	125	49	194	15	69	9	93	20	83	18	121	82	419	117	618
Percentage	12.9	67.6	19.5	100	10.3	64.4	25.2	99.9	16.2	74.2	9.7	100	16.5	68.6	14.9	100	13.2	67.8	19.0	100

There were a total of 199 instances of strategy use where the use of L1 were noted. The frequency of L1 use for each strategy is shown in Table 2 together with the corresponding percentages based on the total of 199 instances. Using these frequencies and percentages, the strategies were ranked accordingly from the highest percentage to the lowest. The result of the ranking is presented in Table 3 below.

Table 3: Ranking of L1 Strategy Use

Rank	Strategy	L1	M	Total	(%)
1	RS 10 Translating	30	33	63	(31.66)
2	RS 3 Paraphrasing	10	16	26	(13.07)
3	RS 8 Questioning (idea-related)	11	14	25	(12.56)
4	RS11 Guessing	9	10	19	(9.55)
5	RS 4 Inferencing	7	10	17	(8.54)
6	RS 9 Recognition of word	3	7	10	(5.03)
7	RS 5 Using context	1	7	8	(4.02)
8	RS 15 Using prior knowledge	2	4	6	(3.02)
9	RS 2 Summarising	0	5	5	(2.51)
9	RS 12 Reject/Accept guess	4	1	5	(2.51)
9	RS 14 Using dictionary	3	2	5	(2.51)
12	RS 7 Questioning (word-related)	0	4	4	(2.01)
13	RS 6 Using structure	0	3	3	(1.51)
14	RS 17 Reading on	1	1	2	(1.01)
15	RS 18 Evaluating comprehension	1	0	1	(0.50)
16	RS1 Rereading	0	0	0	-
16	RS 13 Expressing need for dictionary	0	0	0	-
16	RS 16 Reacting to text	0	0	0	-
	TOTAL	82	117	199	(100.01)*

Note: *Total not exactly 100.00 due to rounding

Strategies expressed in the L1

Table 3 shows that of the eighteen strategies identified in the study, fifteen strategies recorded the use of the L1 albeit with differing frequencies. Only the strategies of rereading, expressing need for dictionary and reacting to text were utilised solely in the L2.

It is also clear from Table 3 that translating was the strategy in which the L1 was used most. Translating makes up 31.66% of the total number (199) of strategy use where the L1 was involved. Other strategies where the L1 was used comparatively more than others are paraphrasing (13.07%), questioning – idea related (12.56%), guessing (9.55%), inferencing (8.54%), and recognition of word (5.03%).

When looking at the percentages of strategies expressed in the L1, as indicated by both Table 2 and Table 3, it is clear that the L1 was used extensively despite the class being an English language class where the students were encouraged to use the target language as much as possible. The use of L1 characterises the students' status as learners of a second language and also further support the argument that second language learners access their L1 while processing the L2 (Cook, 1992; Upton, 1997). In addition, use of L1 in the present study shows that "reading in a second language is not a monolingual event" (Upton, 1997: 3).

Similar to the students in Upton's (1997) study, the students in this study also relied heavily on the L1 when confronted with unknown vocabulary or the idea conveyed in the text. Looking at Figure 1, the use of L1 was prominent in many of the strategies utilised by the students as they struggled (successfully) with unknown words and to understand the whole sentence. More specifically, besides translating, strategies such as paraphrasing, guessing and questioning were seen expressed in the L1.

Figure 1: Extract of text

RS17 Rdgon	174	**Ra** - <u>The alien /'eɪlaɪn /, *ehh, the aliens apparently,*</u>
	175	<u>*ehh,* afflic*t* /eɪ'flɪkt/</u>
(Correction)	176	**Az** – *afflicted /ə'flɪkt/*
	177	**Ra** - <u>afflicted with some mysterious illness and need these spare</u>
	178	<u>cattle parts to cure them.</u>
RS1 Rerdg(c)	179	**Ai - To cure them**
RS18 E-Comp	180	**Az** - *It is very difficult some of this thing*
RS3 Parap(P-)	181	**Ra** - *Alien is a part of mysterious ...*
RS10 Trans(w)	182	**Ai** - *Illness macam sakit kan?*
RS8 Q-idea	183	**Ra** - *Sakit misteri. Makhluk asing sakit-lah ni?*
	184	**Az** - *Hmm (yes, nod of agreement)*
RS1 Rerdg(b)	185	**Ra - And they need the spare cattle part to cure them**
RS10 Trans(I)	186	**Ai** - *Sepatutnya penyakit ni memerlukan badan?*
RS11 Guess(w)	187	**Ra** - *Mysterious, mysterious itu? Penyakit misteri?*
RS1 Rerdg(c)	188	**Ai** – *Ahh (yes), and then ...* **cattle parts to cure them**
RS14 U-Dict	189	*Afflict ini* (to be suffering or experiencing serious problem)
	190	[reading from dictionary]
RS9 Recog-W	191	**Ra** - *Suffer? To be suffering*
RS9 Recog-W	192	Az - *Afflicted* –experiencing serious problem – *yang ini problem*
	193	*ini,* Suffering
RS1 Rerdg(b)	194	**Ai - The aliens are apparently afflicted with some mysterious**
	195	**illness,** *itu macam*
RS3 Parap(P-)	196	**Az** - *So, alien is a big problem and ...macam mana cakap. Ini*
	197	*macam ...Alien ni masalah lain lepas itu*
	198	*... ada pula macam sakit misteri pula itu lagi*
	199	**Ai** - *Sama dengan*
RS4 Infer	200	**Ra** - *Erh, penyakit misteri ini dikaitkan dengan ...*
	201	**Az** - *Alien tu*
RS5 Contx	202	**Ai** – *Ahh (yes). Ini alien* **need these spare cattle parts**
RS1 Rerdg(c)	203	**Az - Cattle parts to cure them**
	204	**Ra** - *To cure*
RS10 Trans(w)	205	**Ai** - *Ahh, memerlukan ...*
RS5 Contx	206	**Ra - To cure them**
RS10 Trans(w)	207	*Maybe medicine, medicine to cure them, ubat-lah.*
RS10 Trans(w)	208	**Az** – *Ahh (yes), medicine ubat*
RS1 Rerdg(c)	209	**Ra - To cure them,**
RS9 Recog-W	210	**Az** - *cure ni medicine, means medicine*
RS1 Rerdg(c)	211	**Ra - Need treatment and...**
RS3 Parap(P+)	212	**Az** - *Ohh betul-lah, erh, dia perlukan..., maksudnya macam*
	213	*penyelesaian untuk penyakit dengan part of cattle*
	214	**Ra** - *Part of cattle ahh*
(Conclusion)	215	Az - Ahh, baca, baca. Kak Aida ke?

Focussing on just the aspect of L1 use based on Figure 1, a few comments can be made on how the students used their L1 to help them. The students frequently resorted to their L1 in their attempts to figure out the words that apparently hampered their understanding. Upton's (1997)

point about the key function of a reader's L1 in helping to comprehend L2 text is most relevant here in that the L1 helps the reader to "either confirm an L2 vocabulary word or to help the reader reason through or guess the meaning of the L2 word" (Upton, 1997: 18). One common way of confirming or guessing the unknown word was to substitute the unfamiliar words with possible equivalents from their L1, for example, "*illness macam sakit kan*? (illness is like sick right?)"; "*medicine, ubat* (medicine, medicine)".

As they tackled the unfamiliar words in the sentence and "tentatively assign meaning across languages" (Jiménez et al., 1996: 103), the students were also trying to fit those words into the sentence, or larger picture so to speak, to see if they have better understood the sentence. Furthermore, they also resorted to translating whole segment of the sentence to confirm what they think was the idea conveyed. This can be seen in the Example 7 (part of Figure 1) below.

Example 7

> **Ra - And they need the spare cattle part to cure them**
> **Ai** - *Sepatutnya penyakit ini memerlukan badan?* (Actually, this sickness needs bodies?)

The translation showed that the student had not understood the sentence accurately. Although her miscomprehension was apparent to the other students, they did not directly respond to the inaccurate translation but instead went on to tackle other words that blocked their understanding. This corroborates the finding by Kern (1994) that one of the uses of translation was "to verify the accuracy of one's comprehension of a portion of text" (Kern, 1994: 453). In the context found in Figure 1, verifying the accuracy was made public and the proposed idea was saliently rejected by the others. Besides translating a sentence into the L1 to help check the meaning of the text, the students also paraphrased the sentence in the L1 as a means of checking their comprehension of the sentence.

It was interesting how the students switched back and forth between the semantic level and syntactic level of the text (in Figure 1) that posed many difficulties and challenges before them. As they tentatively assigned L1 meanings to L2 words that seemed to block their comprehension, they also checked their comprehension at the sentence level, frequently using the L1 in doing so. Thus, for these second language learners, the use of L1 facilitated the process of comprehending the text. Referring to translation, but also applicable here in terms of L1 use, Kern described how that translation "may allow the reader to establish a mental scratch pad, or semantic buffer, where phrase-level and discourse-level meanings can be represented and assembled in the L1" (Kern, 1994: 449).

While Kern's description was based on the reading by individuals, the description was also reflective of what occurred when the students in this study read together as a group. As individuals dealing with the text, they utilised their L1 to help facilitate their reading comprehension process. In the same way, the use of L1 might have been used to facilitate and consolidate what was understood or not understood at the group level. Here, the L1 provided a common ground whereby they could verbalise accurately their thoughts, expressed their feelings

and opinions and be understood by the others. Kern (1994) suggested that the L1 or the use of translation appear to facilitate reading by removing affective barriers that exist when students try to understand the L2 texts. These so-called barriers may be the sense of insecurity in their ability to comprehend L2 texts brought about by unfamiliar words and expressions. According to Kern (1994: 450), "by making the input more familiar, putting it in user-friendly terms, the reader has greater confidence in his or her ability to comprehend the text." Therefore, by using the L1 the students in this study not only reduced these affective barriers as individuals but also as members of the group in general especially when they struggled to comprehend difficult words or ideas in the L2 text.

To summarize, it is found that the L1 was used rather frequently by the L2 students in this study. The students switched between the L1 and L2 as they sought to understand the L2 text particularly when they encountered obstacles to their comprehension. Hence, the L1 played an important role in the L2 reading comprehension processes of the students. The students resorted to the use of L1 for various reasons in their attempts to resolve vocabulary and conceptual related difficulties. In resolving word-related difficulties, the L1 was used to confirm an L2 word or to help the reader reason through or guess the word (Upton, 1997). As for resolving idea-related difficulties, the L1 was used to help verify the accuracy of their comprehension or to check their comprehension of the text. Furthermore, using the L1 might have helped the students reduce affective barriers (Kern, 1994) and gain more confidence in tackling the L2 texts. These findings strengthen claims by Jiménez et al. (1995, 1996) and García (1998) that bilingual students' use of L1 in the form cross-linguistic strategies played "a greater role in their reading comprehension than previously had been assumed" (García, 2000: 163).

Discussion and Implications

A number of interesting and relevant findings regarding the choice of language utilised by the students as they read, think aloud and discuss in the group emerge from the study. The data clearly show that reading in a second language is not a monolingual event (Upton, 1997: 1) and that ESL students access their L1 while processing L2 texts (Cook, 1992; Upton, 1997). In the present study, the L1 was used in 32.20% of the students' total number of strategy use. Various generalisations can be made with regards to the students' use of their L1.

The students switched between the L1 and L2 in a fluid manner as they read and verbalised their thoughts. This finding is not surprising in that code-switching is a common phenomenon among people with more than one language in their verbal repertoire (Fasold, 1984; Gumperz, 1982; Romaine, 1995). García (2000: 824) argued that bilingual readers' code-mixing, code-switching, and translation "should not be viewed as compensatory strategies, but as resources that reflected their bilingual identity." According to Cohen (1995, cited in Upton, 1997), people with access to two or more languages shift frequently between them. While some shifts are unintentional in that it is easier to think in one language than another and so the easier language is used, some shifts are intentional in that another language is used to help understand the grammar or vocabulary of the target language. While both unintentional and intentional shifts are noted in the data, the reading strategies reflect the intentional shifts to the L1 by the students in assisting their attempts to understand the text.

Therefore, there was a tendency to resort to the L1 when the students were faced with difficulties that hindered their comprehension. Not only was the L1 used when the strategy of translating was employed but also in other strategies like questioning and guessing. When tackling vocabulary difficulties, the L1 was used by the students to confirm, to reason through or to guess an unfamiliar L2 word. And in tackling idea-related problems, the L1 was used to help verify the accuracy of their comprehension or to check their comprehension. In a way, this finding supports Vygotsky's hypothesis regarding the verbalisation of one's inner speech when faced with problems during a task so as to gain control of the task and to direct problem-solving strategies (McCafferty, 1994; Lee, 2000; Vygotsky, 1986).

The data show that the L1 was used quite frequently by the students when they struggled in their understanding of the text. What this finding implies for teachers or instructors is that they should not forbid the use of L1 by the students in the L2 class when the students are required to think aloud in a group. ESL students, particularly those of lower proficiency, usually lack the vocabulary and ability to express or verbalise their thoughts confidently, clearly and accurately. Thus, although the teachers should, of course, encourage strongly the use of L2 among students of low proficiency, the teachers should also expect that a certain level of dependence on the L1 would be necessary for the students to carry out the procedure effectively and to gain from it.

Concomitantly, as a way to encourage the students to use the L2 more, teachers can utilise think-aloud in a group as an activity that also provides students the opportunity to practice their speaking and listening skills in the target language in the task of discussing the contents of a text. This is because the students viewed the procedure as giving them the opportunity to improve their L2 speaking skills although they might still switch to their L1 occasionally. Therefore, teachers could utilise this technique as an activity that integrates the various language skills.

Acknowledgements

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Appendix A
Stabilised list of Reading strategies

<u>Note</u>:

- Examples of the reading strategies are given verbatim and not edited in order to retain their original form and may contain grammatical errors.
- Strategies may be verbalised either through the L1 or L2 or both; e.g. Questioning – "*Makhluk asing ini menyumbang macam mana?*" (How do the aliens contribute?); Paraphrasing – "*She, erh, she here mencalonkan dirinya untuk menjadi presiden of Ireland"* (She nominated herself for the presidency of Ireland).
- <u>Notations</u> (used in the examples given and in the transcriptions)

> ÿ <u>Regular and underlined</u> – Text from the passage read aloud the first time.
> ÿ <u>(Regular, underlined and in brackets)</u> – Reading from the dictionary.
> ÿ **Bold**– Text that has been read being read again or used during discussion.
> ÿ *Italic* – Words spoken by students
> ÿ */ italic between slashes/* - phonetic transcription.
> ÿ [Regular and in square brackets] – contextual notes
> ÿ (Regular and in brackets) – comment on most probable meaning

Strategy	Description	Examples

Rereading
 	
RS 1 Rerdg
	Read again a portion of the text that has already been read.
	(a) – entire paragraph verbatim
	(b) – entire sentence verbatim
	(c) – parts of sentence verbatim
		<u>Some children grab the treat the moment he's out the door</u>
		    out the door.
		    Erh, ***some children grab the treat the moment he's out the door.***

Summarising **RS 2 Sumrs**	Summarise what is thought as the information found in a segment (a paragraph or at least three sentences long) of the text after a discussion on that segment.	(After a paragraph is read) I think the paragraph, erh, erh, scientist who erh, do a research and they want to know the future of the children
Paraphrasing **RS 3 Parap**	Use own words and rephrase content, but with the same sense. (P+ = accurate paraphrase) (P- = inaccurate paraphrase) (P\ = Incomplete / Unfinished paraphrase)	1997, Rosemary Scallon is 46 years old so 26 years ago she 18 years old and she is a famous artiste maybe when she apa win the contest
Inferencing *RS 4 Infer*	Supply information that are not explicitly found or stated within the text.	<u>Don't study too late, especially the night before your exam.</u> *So, you must go to sleep very early, don't study last minute and study too late*
Using context **RS 5 Contx**	Search for nearby relevant information to determine the meaning of a word or a portion of the text.	*Erh, it's refer to Milton William Cooper*
Using text structure **RS 6 Struc**	Demonstrate awareness of text structure or grammar and use the awareness in comprehending text or resolving comprehension difficulties.	<u>… questions you feel happiest about first</u> *the root word –happy-lah*

Questioning (word-related) **RS 7 Q-word**	Pose questions regarding the meaning and/or pronunciation of an unfamiliar word (m) = meaning (p) - Pronunciation	… left your revision too late, don't despair… *(a) Despair, what is despair?* *(b) And then she, what pronounce this?* *how to pronounce this?* (Launched*)*
Questioning (idea-related) **RS 8 Q-idea**	Pose questions regarding the idea being conveyed in a portion of text (clause, sentence, sentences).	*if the children grabbed the sweet he will what happened?* *MJ12 – the name, the name apa? Of? …*
Recognising Word **RS 9 Recog-W**	Recognise or discuss a particular word used in the portion of text that is being read and paraphrased.	It turns out that a scientist can see the future by watching… *OK, scientist, scientist expert person who knows about science*
Translating **RS 10 Trans**	Translate a word or a portion of text to the L1 (w) = word (I) = idea	She launched her campaign claiming *Dia melancarkan kempen dia, launched campaign*
Guessing **RS 11 Guess**	Guess the probable meaning / pronunciation of a word or guess the probable meaning of a portion of text. (w) = word (I) = idea	*Moaning what ahh, moaning?* (Question) *Maybe social chat* (Guess*)*
Rejecting / Confirming guess **RS 12 RA-gse**	Reject or accept a guess made earlier.	*Discuss, maybe* (Guess) *No, to compare* (Reject guess*)*

Expressing need for a dictionary **RS 13 E-Dict**	Express need to look up the dictionary in order to resolve comprehension difficulties.	*The law? Constitution? I need to find it in the dictionary.*
Using Dictionary **RS 14 U-Dict**	Use the dictionary to find out the meaning of an unfamiliar word.	*<u>(Constitution – a country's set of laws that control how it is governed and respect the rights and duties of the people who live there)</u>. [reading from dictionary].*
Using prior knowledge **RS 15 Prior**	Bring to bear prior knowledge and experiences in comprehending the text.	<u>Take regular breaks to get enough fresh air and stretch, your legs</u>. Ahh, rest. Get fresh air lah. Or chat. I always chat with my friend when I bored to study
Reacting to text **RS 16 React**	React affectively to information in the text.	<u>Don't study for more than thirty to forty minutes at a time</u> *Ahh, I think it is good strategy right?*
Reading on **RS 17 Rdgon**	Read another portion of text despite a comprehension problem / snag remaining unresolved.	*The conclusion is …OK, continue*
Evaluating Comprehension **RS 18 E-Comp**	Assess understanding of what is being read and demonstrate awareness of comprehension failure or success.	*Finish, too long. Don't understand.*

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