The Effect of Background Knowledge on EFL Learners’ Reading Comprehension

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Schema is known to play an important role in reading comprehension. The schema embodying the learners’ background knowledge of cultural familiar materials facilitates the understanding of the text (Pritchard, 1990). Also, Steffensen, Joag-Dev, and Anderson (1979) and Nelson (1987) proposed that the schemata embodying background knowledge influenced how well the text would be comprehended. However, Hudson (1982) and Carrell (1984) found there was no significant background effect in advanced level learners. From those studies, it seems that background effect is different at different language proficiency levels. Thus, the present study examines the interaction between background knowledge and language proficiency in reading comprehension. The participants were freshmen of National Chiayi University. They were divided into three language proficiency levels based on the General English Proficiency Test. Four reading comprehension tests were constructed to assess their reading comprehension: cultural familiar/unfamiliar text and topic familiar/unfamiliar text. The results of this study showed that participants had better performance on the culture/topic familiar text than the culture/topic unfamiliar text. Thus, the findings suggest that the teacher can use teaching activities, such as pre-reading activities or vocabulary teaching to increase the background knowledge when teaching readings to EFL (English as a foreign language) learners.

Keywords: background knowledge, reading comprehension, language proficiency levels

Introduction of the Study

Reading is a very complex process which educators, psychologists, and linguists are interested in for decades. Because of the complex reading process, a number of theorists are devoted to defining or developing reading models of reading process. The proposal of reading models, from the ones that are linear in nature, such as bottom-up processing (Goodman, 1967; Carrell & Eisterhold, 1983; Hayes, 1991) and top-down processing (Goodman, 1967; Coady, 1979; Eskey, 1986) to interactive processing (Rumelhart, 1980; Gove, 1983), demonstrates the efforts that the theorists have delved into what happens when readers are reading (Chang, 2004). Reading is considered as a meaning-constructing process (Hayes, 1991). From this complex process, readers can interact with various sources, such as the content and the background of a text or the pragmatic context and then construct the meanings from the information in the reading.

Currently, in Taiwan, reading holds an important place in students’ English education, because most of them do not really communicate with native speakers of English. Examining the textbooks in Taiwan, we may find
most English texts that Taiwanese students read are narratives or expository passages. In addition, for most students, the purpose for reading those passages is to help them to learn new words and syntactic rules so that they can get better grades for some exams. Thus, many students cannot interact with the context and they cannot learn the whole picture of the reading passage (Huang, 2003). From the above problems, choosing better reading materials becomes an important mission in reading instruction.

Every reading material requires its own background knowledge. Different background knowledge would influence students’ reading comprehension. Generally speaking, background knowledge is formalized in a theoretical model known as schema theory (Carrell & Eisterhold, 1983; Carrell, 1984). Following schema theory, numbers of studies demonstrated the importance of background knowledge in reading comprehension (Carrell, 1984; Pritchard, 1990; Nelson, 1987; Bensoussan, 1998). Gatbonton and Tucker (1971) suggested that providing relevant cultural information was important. With suitable and relevant background knowledge, students would learn better. In addition, Droop and Verhoeven (1998) proposed a facilitating effect of cultural familiarity for both reading comprehension and reading efficiency. Hence, we cannot deny the importance of background knowledge in reading instruction.

Although most researchers agree on the importance of background knowledge in reading comprehension, there are still lots of problems. First, for the role of background knowledge at different proficiency levels, a controversial situation existed in studies. Chan (2003) suggested that the relative importance of background knowledge and language proficiency in L2 (second language) reading comprehension should be considered. Rahman and Bisanz (1986) believed that poor readers’ schema did not develop as well as was not efficiently used as good readers’. They believed that the role of background knowledge was more crucial in good readers than in poor readers. However, in Hudson’s (1982) and Carrell’s (1984) studies, they both suggested that there was no significant background effect on learners’ reading comprehension in advanced readers. Also, Chan (2003) proposed that background knowledge was more beneficial to low proficiency learners. As a result, the role of background at readers with different proficiency levels seems to become an unsolved problem. Second, Chan (2003) and Alptekin (2006) recommended that the subjects should have wider range of language proficiency levels. That is because in their studies, they all used learners of advanced English proficiency level as the participants. Thus, based on above different suggestions and problems, this study chose participants with wider range of language proficiency levels to find out background effect on those participants with different language proficiency levels.

According to research goal of this study, there are four major research questions involved in this study: (1) Is there any significant difference between learners’ comprehension of culture familiar and culture unfamiliar texts at different language proficiency levels?; (2) In culture familiar and unfamiliar texts, is there any difference on reading comprehension among questions with different levels of representation?; (3) Is there any significant difference between learners’ comprehension of topic familiar and topic unfamiliar texts at different language proficiency levels?; and (4) In topic familiar and unfamiliar texts, is there any difference on reading comprehension among questions with different levels of representation?.

**Method**

This study chose a quantitative method to investigate the interaction between culture and topic familiarity and language proficiency level in EFL (English as a foreign language) learners’ reading comprehension. Based
on the research goal, this study examined if culture and topic familiarity influenced learners’ reading comprehension at different language proficiency levels.

Four reading tests were designed to examine the effect of background knowledge on reading comprehension. The researcher chose four reading texts of different backgrounds as materials (culture familiar, culture unfamiliar, topic familiar, and topic unfamiliar). In the following, the research design is presented in Figure 1.

![Figure 1. The research design.](image)

**Participants**

There were six classes of freshmen in National Chiayi University involved in this study. Three classes came from College of Humanity and Art, and the other three classes came from College of Science. The division of three language proficiency levels—upper-intermediate (A), intermediate (B), and low-intermediate (C)—was based on their results in the institutional GEPT (General English Proficiency Test), which was used as a placement test at National Chiayi University. The GEPT mainly includes two sections. The first section is a listening comprehension test, including 45 multiple-choice items, and the second one is a reading comprehension test, including 40 multiple-choice items. The total score is 240 points, 120 for listening comprehension test and 120 for reading comprehension test. In addition, the content of this test is also similar to GEPT in Taiwan. The level of this test corresponds to intermediate level in GEPT in Taiwan. The detailed information of this test is provided in Table 1.

<table>
<thead>
<tr>
<th>Test item</th>
<th>Listening comprehension test</th>
<th>Reading comprehension test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>45</td>
<td>40</td>
</tr>
<tr>
<td>Time (Minutes)</td>
<td>30</td>
<td>45</td>
</tr>
<tr>
<td>Content</td>
<td>Picture-cued questions (15 questions)</td>
<td>Vocabulary and structure (15 questions)</td>
</tr>
<tr>
<td></td>
<td>Short answers (15 questions)</td>
<td>Cloze tests (10 questions)</td>
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<td></td>
<td>Short conversation (15 questions)</td>
<td>Reading comprehension (15 questions)</td>
</tr>
</tbody>
</table>

Students whose scores were above 180 were located to Level A (upper-intermediate level). Students whose scores were from 150 to 179 were located to Level B (intermediate level). Finally, students whose scores were under 150 were located to Level C (low-intermediate level). There was no significant difference of students’ scores of this placement test between students of College of Humanity and Art and College of Science at the same
language proficiency level. Thus, totally, there were 278 freshmen participants.

Based on the author’s assumptions about background knowledge, the author supposed that all participants were familiar with Chinese culture. Also, participants of College of Humanity and Art were familiar with readings of social science, and participants of College of Science were familiar with readings of natural science. Hence, participants whose familiarity ratings did not correspond to the author’s assumption were eliminated. Thus, after the elimination, 201 freshmen became the participants and the other 77 freshmen were eliminated.

Moreover, the author also adapted the VLT (Vocabulary Levels Test) (Schmitt, 2000) to examine participants’ vocabulary levels. The division of three vocabulary proficiency levels—under 2,000-word level (Level 1), 2,000-word level (Level 2), and 3,000-word level (Level 3)—was based on their results in VLT. Table 2 shows the division of each vocabulary level.

Table 2

<table>
<thead>
<tr>
<th>The Information of Each Vocabulary Level</th>
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<tbody>
<tr>
<td>College of Humanity and Art</td>
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<tr>
<td>---------------------------------</td>
</tr>
<tr>
<td>Under 2,000-word level (Level 1)</td>
</tr>
<tr>
<td>2,000-word level (Level 2)</td>
</tr>
<tr>
<td>3,000-word level (Level 3)</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

In College of Humanity and Art, 61 participants’ vocabulary level was under 2,000 words. Then, there are 33 participants whose vocabulary levels were 2,000 words. Finally, eight participants’ vocabulary level was 3,000 words. In addition, in College of Science, 58 participants’ vocabulary level were under 2,000 words. Then there were 35 participants whose vocabulary level was 2,000 words. Also, six participants’ vocabulary level was 3,000 words. Then, after the division, the researcher examined the effect of background knowledge and vocabulary level on reading comprehension.

**Procedures**

The procedures of this study were presented in Figure 2.

![Figure 2. The procedures of this study.](image)

All the participants were tested in their regular freshmen English class. All the participants had to read four different texts (culture familiar, culture unfamiliar, topic familiar, and topic unfamiliar) and answer 20 questions based on the four readings. In addition, after the reading comprehension tests, participants had to do the familiarity rating of the four reading texts. For example, in culture familiarity, they had to rate the familiarity of
the texts. The researcher used familiarity scales for participants to rate their familiarity about culture and topic. The familiarity is rated from “1” to “4”. “1” represents very unfamiliar and “4” represents very familiar.

Finally, they had to do the VLT. Participants had to answer questions in the five vocabulary levels (2,000-word level, 3,000-word level, 5,000-word level, academic vocabulary, and 10,000-word level). They had to match the vocabulary and the definitions of the word meaning based on their understanding. The total procedure lasted 90 minutes. All the texts were in English and also the assessment.

Finally, during the reading tests, the researcher avoided the discussion between participants.

**Results and Discussion**

**Culture Familiarity and Language Proficiency Levels**

A paired-sample *t*-test was used to investigate the effect of culture familiarity on participants with different language proficiency levels.

The results indicated the effect of culture familiarity on reading comprehension with participants of different language proficiency levels. Culture familiarity did not affect the reading comprehension (*t* = -1.08, *p* > 0.05) at Level A. Then at Level B, participants performed better on the culture familiar reading (*t* = 3.75, *p* = 0.00). Also participants performed significantly better on the culture familiar reading (*t* = 3.09, *p* = 0.00) at Level C. From the results, they indicated that culture familiarity was important for participants with intermediate (Level B) and low-intermediate (Level C) language proficiency levels.

In addition, for the discussion of culture familiarity and vocabulary levels, a paired-sample *t*-test was used to investigate the effect of culture familiarity on participants with different vocabulary levels. At Level 1, participants performed significantly better on the culture familiar reading (*t* = 3.92, *p* < 0.05). However, at Level 2, no significant difference was found (*t* = 0.40, *p* > 0.05). Also no significant difference was found at Level 3 (*t* = 0.28, *p* > 0.05). Those results indicated culture familiarity did not matter for participants at Level 2 and Level 3, but it was important for participants at Level 1. Comparing the results of participants with language proficiency level and vocabulary level, vocabulary level provided more specific information of culture familiarity in reading comprehension. Culture familiarity was important for participants whose vocabulary knowledge was under 2,000 words.

From the above results, the author found that culture familiarity was more important for participants at lower language proficiency levels than participants at higher language proficiency levels. In this study, participants at higher language proficiency levels had enough linguistic knowledge so that their linguistic knowledge can overcome the lack of background knowledge. Thus, culture familiarity was not detectable in participants at higher language proficiency levels.

On the other hand, because of the lack of linguistic knowledge, participants at lower language proficiency levels still needed background knowledge to help them comprehend the reading texts. As a result, the effect of culture familiarity is detectable in participants at lower language proficiency levels.

**Topic Familiarity and Language Proficiency Levels**

A two-way ANOVA (Analysis of Variance) was used to examine the effect of topic familiarity and language proficiency levels on reading comprehension. The results of a two-way ANOVA showed that language proficiency levels and topic familiarity influenced reading comprehension. Participants got higher grades in their
topic familiar readings than topic unfamiliar readings. Also, language proficiency levels influenced participants’ reading comprehension. Participants of Level A (upper-intermediate level) got better grades than participants of Level B (intermediate) and Level C (low-intermediate levels) \((F = 18.83, p = 0.00)\) in *Birds*. In addition, participants of Level A (upper-intermediate level) also got better grades than participants of Level B (intermediate) and Level C (low-intermediate levels) \((F = 29.59, p = 0.00)\) in *Taboos*. Also, the researcher detected the cross effect between language proficiency levels and topic familiarity. The researcher found that in *Birds*, there was cross effect between language proficiency levels and topic familiarity \((F = 14.43, p = 0.00)\). On the contrary, in *Taboos*, there was no cross effect between language proficiency levels and topic familiarity \((F = 1.45, p = 0.32)\). The results indicated that language proficiency levels and topic familiarity affected reading comprehension, but when they interacted, they did not influence reading comprehension.

Moreover, the relation between topic familiarity and vocabulary levels were also discussed. A two-way ANOVA was used to detect the effect of topic familiarity and vocabulary levels on reading comprehension. The results of a two-way ANOVA showed that topic familiarity influenced the reading comprehension \((in *Birds*, F = 7.30, p < 0.05; in *Taboos*, F = 7.82, p < 0.05)\). However, although vocabulary levels and topic familiarity had individual effects on reading comprehension, they did not have cross effect on reading comprehension \((in *Birds*, F = 1.29, p > 0.05; in *Taboos*, F = 0.60, p > 0.05)\).

In addition, a Post Hoc Scheffe test results showing the pair group differences and the significance levels were given in Table 3. From the results, the author found that no significant difference was found at Level 2 and Level 3 in *Birds* and *Taboos* \((p > 0.05)\). In fact, participants from College of Humanity and Art and College of Science at Levels 2 and 3 did not differ significantly on either topic familiar or topic unfamiliar readings. However, as for the participants from College of Humanity and Art and College of Science at Level 1, they got better scores in their topic familiar readings, which meant that for the two readings, participants from College of Humanity and Art got better scores in the reading text of *Taboos*. On the contrary, participants from College of Science got better scores in the reading text of *Birds*. The above results indicated that topic familiarity was important for participants at low vocabulary levels.

Table 3
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<table>
<thead>
<tr>
<th>Participant groups and vocabulary levels</th>
<th>Birds</th>
<th>Taboos</th>
</tr>
</thead>
<tbody>
<tr>
<td>HA-level 1 and S-level 1</td>
<td>0.02*</td>
<td>0.03*</td>
</tr>
<tr>
<td>HA-level 2 and S-level 2</td>
<td>0.98</td>
<td>0.07</td>
</tr>
<tr>
<td>HA-level 3 and S-level 3</td>
<td>0.84</td>
<td>0.97</td>
</tr>
</tbody>
</table>

*Notes. HA: College of Humanity and Art; S: College of Science; Level 1: under 2,000-word level; Level 2: 2,000-word level; Level 3: 3,000-word level; and *p < 0.05.*

This finding partly supported Gagne, Bell, Weidenmann, and Yarbeough’s (1980) and Swaffar’s (1988) studies. They all proposed that compared with unfamiliar texts, familiar texts were learned faster and remembered better. But, in their studies, they did not take language proficiency levels into consideration. In this study, the results were a little different from the previous studies. The author found that topic familiarity was more important in participants at lower language proficiency levels.
Conclusions

From this study, we should understand that teachers of EFL reading need to be aware of the importance of background knowledge in EFL reading. Schema theory suggests that the purpose of building and learning to activate appropriate background knowledge of texts is to produce better reading comprehension. In addition, in an English reading classroom, the teachers should become the facilitators of acquisition of suitable background knowledge. Thus, in order to emphasize the role of background knowledge in reading comprehension, the followings are some educational implications in an EFL reading classroom for teachers to improve students’ reading comprehension.

Pre-Reading Activities

When teachers teach some unfamiliar readings, teachers have to provide some background information about the reading texts for low level. In addition, teachers can design some teaching activities to help students more familiar with the texts. From the teaching activities, students will know more about the text, and they will learn it more efficiently.

Vocabulary Teaching

From the study, vocabulary plays an important role in reading comprehension. Thus, as a reading teacher, before teaching reading, the teacher can provide some teaching of the key words in the reading text. If the teacher can simply help learners understand the key words before the reading task, it will be easy for learners to understand the text.

Comprehension Instruction

In an EFL classroom, the teachers seldom teach learners how to read or comprehend a text. As a result, comprehension instruction becomes an important part to help learners to read. In a reading task, predicting questions and some problem-solving questions are useful for teaching comprehension skills. Thus, the teacher can help learners to ask the predicting questions to check if they really understand the text. From those questions, learners can apply their knowledge to solve those questions and finally they can comprehend the content.

As EFL teachers, the task is to help learners build appropriate background knowledge and teach them that reading is a process of making good use of prior knowledge to build new knowledge. Only if teachers try to take background knowledge into consideration during the teaching processes, will learners’ reading comprehension be improved.

References


