The Role of Background Knowledge and Proficiency in Vocational EFL Learners' Listening Comprehension

Tzu-Ying Huang

Department of Applied Foreign Languages

National Yunlin University of Science and Technology, Taiwan, R.O.C.

Shu-Chu Chen[*]

Department of Applied Foreign Languages

National Yunlin University of Science and Technology, Taiwan, R.O.C.

Shu-Hui Eileen Chen

Department of Children English Education

National Taipei University of Education, Taiwan, R.O.C.

Shyh-Chyi Wey

Department of Applied Foreign Languages, National Yunlin University of Science and

Technology, Yunlin, Taiwan, R.O.C.

Corresponding author:

Shu-Chu Chen , chensc@yuntech.edu.tw, National Yunlin University of Science and Technology,

Taiwan, 123 University Road, Section 3, Douliou, Yunlin 64002, Taiwan, R.O.C.

Tel:+886-5-534-2601 Fax:+886-5-532-1719

The Role of Background Knowledge and Proficiency in Vocational EFL Learners' Listening Comprehension

Abstract

The purpose of this study is to examine the role of background knowledge and proficiency in Taiwanese EFL vocational high school students' listening comprehension. 110 EFL vocational high school students aged from 17-18 were assigned to four groups, based on their majors (business vs. technology) and their scores of TOEIC proficiency test (lower vs. higher). The participants were asked to take a standardized English proficiency test, and a TOEIC listening comprehension test. The results indicated that EFL learners with commercial background comprehended business texts better than those with technology background. Specifically, lower English proficient learners benefited more from background knowledge during L2 listening comprehension than their higher English proficient counterparts. The findings help enhance a better understanding of the role of background knowledge as it interacts with L2 proficiency in L2 listening comprehension by EFL learners, with specific vocational disciplinary background, in EFL contexts.

Key words: background knowledge, proficiency, listening comprehension

Introduction

Listening is a process through which meaning is derived from the stream of speech sound, encompassing the complicated process of perception, comprehension, recognition, evaluation and reaction (DeVito, 2004). Although listening plays an important role in communication, it is perceived as the most difficult language skill for L2 learners, and constitutes a source triggering learners' great anxiety (Graham, Cumsille, & Elek-Fisk, 2003; Yan & Horwitz, 2008).

Listening comprehension is achieved through complex, interactive and dynamic mental processes. Theories like top-down and bottom-up processing have been proposed to explain how listeners achieve comprehension. In top-down processing, information is derived from background knowledge whereas in bottom-up processing, meaning is derived from incoming input, which the learner guesses what a word might be by matching initial sounds to his/her known lexicon. As more sounds occur, listeners can eliminate more and more possibilities until they arrive at the most

accurate match to the input sounds (Anderson & Lynch, 1988; Field, 2004; Rost, 2002). The two processes function in a compensatory manner (Chamot & Kupper, 1989; Stanovich, 1980). Learners actively contribute knowledge from linguistic and nonlinguistic (i.e., experiences, background knowledge) sources to reorganize speakers' intended meaning. The interactive nature between listeners' past experiences and background knowledge led to successful text comprehension (Brown & Yule, 1983; Chang & Read, 2006; Chiang & Dunkel, 1992; Lingzhu, 2003; Long, 1989; Rost, 2002). Therefore, background knowledge facilitates learning whereas lack of background knowledge impedes comprehension (Anderson & Lynch, 1988; Gebhard, 2000; McKeown, Beck, Sinatra, & Loxterman, 1992; Vandergrift , 2002).

The activation of learners' background knowledge is closely related to learners' language proficiency on EFL learners' listening comprehension (Chiang & Dunkel, 1992; Field, 2004; Keshavars & Babai, 2001; Vandergrift, 2006). For instance, Keshavars and Babai (2001) reported that proficient language learners were more capable of revising their schema when their schema did not match the data by effectively using bottom-up information. By implication, less proficient language learners were less capable to utilize bottom-up information, and hence, relied more on contextual and co-contextual support for interpretation in listening. However, due to insufficient linguistic ability, they may over-rely or over-generalize their topic knowledge, thus leading to a mismatch between what they hear and what they know (Tusi & Fullilove, 1998; Young, 1997).

Though listening is considered as a difficult skill to acquire, it, surprisingly, didn't receive more attention in language learning until recently (Markham & Latham, 1987; Sun, 2002; Teng, 200; Wang, 2006). Despite foreign language listening have attracted more attention in recent years (Sadighi & Zare, 2002), only limited studies address the role of learners' background knowledge as it interacts with learners' proficiency in L2 listening comprehension. Furthermore, evidence from the literature suggests that the underlying cognitive processing in different culture or disciplines, by implication, may be tapped differentially due to socio-cultural, environmental and processing factors, which, in turn, may affect the learning style language learners prefer to use in discovering the meaning in language use (Dunn & Griggs, 1995). Vocational high school students represent a population who may possess specific learning style in language use. In view of cultural and disciplinary specificity, the findings from English-speaking L1 children or from humanity disciplines may not be generalized to EFL vocational students, with specific commerce and technology background. To fill the void of literature, the purpose of the present study is, hence, to investigate the role of background knowledge and proficiency in English listening comprehension

by Taiwanese EFL vocational high school students in English as a Foreign Language learning environment.

Method

Participants

The sample was composed of 110 EFL learners from one vocational high school located in Taiwan. The participants were about 18 or 19 years of age, and they all had seven or eight years of EFL learning in school before. A total of 53 male and 57 female students participated in this study. **B**ased on their TOEIC English proficiency test and majors in vocational high school, participants were assigned to four groups. Group A and group B consist of students majoring in Data Processing with commercial background, while Group C and Group D majored in Information Technology without any commercial background. Group A and Group C were designated as the higher proficient groups, who obtained TOEIC score at comparatively equal intermediate level, with the average TOEIC score of 465. Group B and Group D constitute the lower proficient groups, who obtained TOEIC score at comparatively equal high beginning level, with the average TOEIC score of 375.

Measures

Two measures were employed to address the research question in this study, including a standardized English proficiency test, and a listening comprehension test. The description of the two measures is described as follows.

English Proficiency test—A standardized TOEIC listening and reading test, published by the official TOEIC test books, was used as a proficiency test to measure the participants' English proficiency. Based on the scores of the test, the participants were classified into lower proficient group and higher proficient group. There was significant difference in the scores obtained between the two groups.

*Listening comprehension tes*t—To address the role students' background knowledge in their English listening comprehension, a listening comprehension test, revised from TOEIC tests, was given to the four groups of participants. The listening test consisted of 50 items: 25 items were commercial-related topics while the other 25 were life-related ones. Each correct item was given 2 points, with the total score 100. The test was administered to both business-major groups (i.e., lower and higher proficient group), and technology-major groups (i.e., lower and higher proficient group).

By comparing the performance between commercial-related topics and daily life topics, we determined the role of background knowledge in L2 listening comprehension in vocational EFL students with different proficiency levels.

Procedures

The participants were asked to complete the tests at the beginning of the first term and they were assured of anonymity. The researcher first conducted TOEIC proficiency test for two hours. In four weeks, the participants took the listening comprehension test, which continued for one and a half hours in class.

Analysis

Describe the analyses applied to the data. It is helpful if you arrange this section to be coherent with the hypotheses. The statistical program SPSS 17.0 for Windows was applied for analysis of the variables. Paired sample *t*-tests and independent *t*-tests were conducted to examine the role of background knowledge and proficiency in English listening comprehension in vocational EFL learners with different English proficiency levels. Probabilities up to 0.05 were considered significant.

Results

The aim of this study is to address the role of background knowledge and L2 proficiency in L2 listening comprehension in Taiwanese EFL vocational school students. To answer the research question, within- and between-group comparisons were conducted via the use of paired sample-*t* tests, and independent *t*-tests to analyze the performance of the more proficient group (including business and technology majors respectively) across the two listening topics situations, followed by the analysis of the performance by the less proficient group.

As indicated in Table 1 as below, the analysis within the more proficient group indicated that students with commercial business background performed significantly better in commercial-related topics than in life-related ones ($t=3.068$, $p<0.05$) whereas technology students with no commercial business background didn't perform with significant difference between these two sections ($t=1.98$, $p=0.51$). This implies that background knowledge of commercial business facilitates L2 listening comprehension to a great extent for students with higher proficiency.

TABLE 1

WITHIN-GROUP COMPARISON OF LISTENING COMPREHENSION IN MORE PROFICIENT GROUPS

Major	*M*	*M*	*df*	*t*	*p*
	business-related topic	daily life topic			
Business(*n*=80)	26.05	22.55	86	-3.068	.003***
Technology (n=58)	21.54	24.15	76	1.98	.51

*** *p* < .001.

As shown in Table 2 as below, for EFL learners with more proficiency, the between-group comparisons showed that business-major students outperformed the technology-major students in business-related listening topics (*t*=0.403, *p*<0.000), whereas no significant difference was observed for the two groups' performance in life-related listening topics (*t*=1.211, *p*> 0.05), in which no specific background knowledge was required.

TABLE 2

BETWEEN-GROUP COMPARISON OF LISTENING COMPREHENSION IN MORE PROFICIENT GROUPS

	M	*M*	*df*	*t*	*p*
	Business (*n*=80)	Technology (*n*=58)			
Business-related topic	26.05	21.54	81	-4.03	.000***
Daily life topic	22.55	24.15	81	1.21	.23

*** *p* < .001.

In the analysis for the less proficient EFL learners with different majors, business-major students performed better in commercial-related topics than in life-related ones (*t*=4.429, *p* < 0.000) , while technology-major students scored significantly higher in life-related field than in

commercial-related field (t=4.776, p<0.000). The following Table 3 presented the result of the analysis.

TABLE 3

WITHIN-GROUP COMPARISON OF LISTENING COMPREHENSION

IN LESS PROFIEICNT GROUPS

Major	*M*	*M*	*df*	*t*	*p*
	(business-related topic)	*(daily life topic)*			
Business(n=80)	26.39	21.89	70	-4.29	.000***
Technology(n=58)	18.21	23.68	36	4.77	.000***

***p < .001.

Table 4 presents the results for between group comparison for less proficient group. It showed that business-major students outperformed the technology-major students in business-related listening topics (t=6.842, p<0.000). However, no statistically significant group difference were found in life-related listening topics (t=1.545, p=0.128) between the two majors.

TABLE 4

BETWEEN-GROUP COMPARISON OF LISTENING COMPREHENSION

IN LESS PROFICIENT GROUPS

	M	*M*	*df*	*t*	*p*
	Business (n=80)	Technology (n=58)			
Business-related topic	26.39	18.21	53	-6.84	.000***
Daily life topic	21.89	23.68	53	1.55	.13

*** p < .001.

Discussion

Based on the result, the findings of the present study were consistent with those reported in some previous L1 studies (Hu & Nation, 2000; Long, 1990; Schmidt-Rinehart, 1994; Weissenreider, 1987), suggesting that background knowledge facilitates the listening comprehension. As shown in this study, the participants with business background knowledge tended to score higher in the business related listening topics than those without commercial-background knowledge in L2. It suggests that background knowledge also facilitates L2 listening comprehension of the vocational senior high school students. If the learners have prior knowledge, prior understanding of the subject (i.e., content schema in this case), their prior knowledge will trigger different schema to help them predict the text content so as to make reasonable guesses about the meaning of the listening texts.

For both higher and less proficient groups, business-major students had better performance in commercial related topics than technology-major students. On the other hand, students with business-major did not perform with significant difference in comparison with their counterparts in life related listening topics in which background knowledge is not required. Contextual information serves as a compensatory strategy to reduce listeners' dependence on the bottom up level of acoustic signals. Generally speaking, the effective applications of top-down processing usually decrease the degree of reliance on acoustic signals and facilitate L2 listening (Hu & Nation, 2000; Long, 1990; Schmidt-Rinehart, 1994; Weissenreider, 1987). Nevertheless, the effect of background knowledge varies to some extent between lower and higher proficient groups. The between-group and within-group comparison of the listening comprehension score in business-related materials indicated that background knowledge contributed more for less proficient EFL students with commercial business background. It suggests that the less proficient EFL students benefited more from the activation of prior knowledge on listening comprehension than the more proficient counterparts. According to Adams (1982, p.155-159), providing background information and previewing may benefit second-language readers with low language proficiency more than readers with high language proficiency. The finding of the present study suggests that listening to text which involves background knowledge benefits EFL listeners with high beginning proficiency more than intermediate listeners. The finding was consistent with that of a study by Tusi and Fullilove (1998). However, there is a word of caution. Even though background content knowledge helps facilitate L2 listening comprehension, due to insufficient linguistic ability, EFL learners were

unable to score high in their listening comprehension test. In other words, the effect of background knowledge is minimal when L2 proficienty is taken into account (Chang & Read, 2006).

There are pedagogical implications that can be drawn from the findings of this study. The result showed that prior knowledge of business had a significant effect on both groups of higher and less proficient learners' English listening comprehension. It is strongly recommended that EFL teachers utilize pre-listening activities to help activate or provide related prior knowledge in pre-listening activities. Particularly to lower proficiency unskillful EFL learners, listeners tend to be more word-bound and meaning tends to break down at the word level. In an attempt to understand information, the less proficient language students will depend on specific (and less efficient) word-by-word processing exclusively in a bottom-up processing mode. To compensate for the lack of vocabulary knowledge, lower proficient EFL learners relied on background knowledge in a top-down processing to help understand listening text. Hence, to arouse students' motivation and reduce anxiety, EFL teachers are recommended to select listening materials which contain appropriate background information for students at beginning level in listening instruction.

Despite valuable findings, the present study has from some shortcomings, like all studies. In the present study, the small number of 110 participants might restrict the scope of generalization of the findings. It is hoped that a greater number of students can be included in future studies to help enhance generalization. Also, other factors of learners' affective variables could be considered in future studies to address the issues in more depth.

References

Adams, S. J. (1982) Scripts and the recognition of unfamiliar vocabulary: enhancing second language reading skills. *Modern Language Journal*, 66(2), 155-159.

Anderson, A., & Lynch, T. (1988) *Listening*. Oxford: Oxford Univer. Press.

Brown, G., & Yule, G. (1983) *Teaching the spoken language: an approach based on the analysis of conversational English*. Cambridge, New York: Cambridge Univer. Press.

Chamot, A. U., & Kupper, L. (1989) Learning strategies in foreign language instruction. *Foreign Language Annals*, 22, 13-24.

Chang, A., & Read, J. (2006) The effects of listening support on the listening performance of EFL learners. *TESOL Quarterly*, 40, 375-397.

Chiang, C. S., & Dunkel, P. (1992) The effect of speech modification, prior knowledge, and listening proficiency on EFL lecture learning. *TESOL Quarterly*, 26, 345-374.

DeVito, J. A. (2004) *The Interpersonal Communication Book*. San Francisco, CA: Allyn & Bacon.

Dunn, R., & Griggs, S. A. (1995). Multiculturalism and learning style: teaching and Counseling adolescents. Westport, CT: Praeger.

Field, J. (2004) An insight into listeners' problems: too much bottom-up or too much top-down?. *System*, 32(3) , 363–377.

Gebhard, J. (2000) Teaching English as a foreign or second language: a teacher self–development and methodology guide. United States of America: The Univer. of Michigan Press.

Graham, J. W, Cumsille, P. E., & Elek-Fisk, E. (2003) Methods for handling missing data. In J. A. Schinka & W. F. Velicer (Eds.), *Research methods in Psychology* (Vol. 2,). New York: John Wiley. Pp. 87-114.

Hu, Hsueh-Chao M., & Nation, P. (2000) Unknown vocabulary density and reading comprehension. *Reading in a Foreign Language*, 13(1), 403-430.

Keshvarz, M., & Babai, E. (2001) Incompatibility of schema with input in listening comprehension. *Indian Journal of Applied Linguistics*, 27(1), 57–83.

Lingzhu, J. (2003) Listening activities for effective top-down processing. *The Internet TESL Journal*. Retrieved 14 May, 2004.

Long, D. R. (1989) Second language listening comprehension: a schema-theoretic perspective. *Modern Language Journal*, 73(1), 32-40.

Long, D. R. (1990) What you don't know can't help you: an exploratory study of background knowledge and second language listening comprehension. Studies in *Second Language Acquisition*, 12, 65-80.

Markham, P. & Latham, M. L. (1987) The influence of religion-specific background knowledge on the listening comprehension of adult second-language students. *Language Learning*, 7,157-170.

McKeown, M. G., Beck, I. L., Sinatra, G. M. & Loxterman, J. A. (1992) The relative contribution of prior knowledge and coherent text to comprehension. *Reading Research Quarterly*, 27(1),78-93.

Rost, M. (2002) Teaching and researching listening. London: Longman.

Sadighi, F. and Zare, S. (2002) Is listening comprehension influenced by the background knowledge of the learners? A case study of Iranian EFL learners. *The linguistics Journal*, 1(3), 110-126.

Schmidt-Rinehart, B. C. (1994) The effects of topic familiarity on second language listening comprehension. *The Modern Language Journal*, 78(2), 179-189.

Stanovich, K. E. (1980) Toward an interactive-compensatory model of individual differences in the development of reading fluency. *Reading Research Quarterly*, 16, 32-71.

Sun, K. C (2002) *Investigation of English listening difficulties of Taiwan student*s. In elected Papers from the Eleventh International Symposium on English Teaching/Fourth Pan Asian Conference, 518-525. Taipei: The Crane Publishing.

Teng, H. C. (2002) *An investigation of EFL listening difficulties for Taiwanese college students*. Proceedings of the Eleventh International Symposium on English Teaching, 526-533. Taipei: The Crane Publishing Co.

Tsui, A. B. M., & Fullilove, J. (1998) Bottom-up or top-down processing as a discriminator of L2 listening performance. *Applied Linguistics*, 19(4), 432-451.

Vandergrift, L. (2002) Listening: theory and practice in modern foreign language competence. Good Practice Guide. Retrieved 14 May, 2004.

Wang, P. L. (2006) The power of picture books. Paper presented at De-Lin 2006 Enhancing Students' English/Japanese Proficiency Conference.

Weissenrieder, M. (1987) Understanding spoken Spanish: a course in listening. *Foreign Language Annuals*, 20, 531-537.

Yan, J. X., & Horwitz, E. K. (2008) Learners' perceptions of how anxiety interacts with personal and instructional factors to influence their achievement in English: a qualitative analysis of EFL learners in China. *Language Learning*, 58(1), 151-183.

Young, Y. M. C. (1997) A serial ordering of listening comprehension strategies used by advanced ESL learners in Hong Kong. *Asian Journal of English Language Teaching*, 7, 35-53.