CSCanada
Studies in Literature and Language
Vol. 21, No. 3, 2020, pp. 32-37
DOI:10.3968/11951

ISSN 1923-1555[Print]
ISSN 1923-1563[Online]
www.cscanada.net
www.cscanada.org

Analysis of Learning Strategy on the Improvement of the Listening Comprehension Ability of Non-English Majors in Engineering Colleges from the Perspective of CSE: A Case Study of NCEPU

LONG Ting[a],*; WU Shiqi[b]

[a]School of Foreign Language, NCEPU(North China Electric Power University), Jiangxi province, China.
[b]School of Economic and Management, NCEPU(North China Electric Power University), Beijing, China.
*Corresponding author.

Supported by 受华北电力大学大学生创新创业训练计划项目支持.

Received 21 August 2020; accepted 15 October 2020
Published online 26 December 2020

Abstract

In today's world of increasingly frequent global cooperation and communication, English has become an indispensable communication tool. In the process of communication, listening comprehension skills are especially important to have an oral output. For a long time, the public English courses in engineering colleges and universities don't have enough listening course settings for non-English majors, which cannot meet the needs of non-English learners since they also have to obtain cutting-edge scientific information, such as from relevant scientific lectures. In 2018, *China's Standards of English Language Ability* (CSE) was officially released, which provides a comprehensive, clear and detailed description of the characteristics of each listening comprehension level(Guo Xiaoting, 2018). In December 2019, the scale was officially docked with TOEFL scores, highlighting the scale's role as an ability assessment standard for English learners (Qiu Chenhui, 2019). In this paper, a questionnaire survey was conducted on the English listening comprehension ability of non-English majors of North China Electric Power University, using CSE as the assessment standard. It tries to draw out existing questions and proposes relevant strategies for practical research, and then test these strategies' effectiveness through Eviews software.

Key words: China's Standards of English Language Ability; Listening comprehension ability; Non-English majors in engineering colleges

Long, T., & Wu, S. Q. (2020). Analysis of Learning Strategy on the Improvement of the Listening Comprehension Ability of Non-English Majors in Engineering Colleges from the Perspective of CSE: A Case Study of NCEPU. *Studies in Literature and Language, 21*(3), 32-37. Available from: http://www.cscanada.net/index.php/sll/article/view/11951
DOI: http://dx.doi.org/10.3968/11951

INTRODUCTION

With the acceleration of globalization, the importance of learning English is gradually increasing. *College English Course Teaching Requirements* issued by Shanghai Foreign Language Education Press clearly pointed out: "The teaching goal of college English is to cultivate students' comprehensive application ability, especially the ability of listening and speaking" (Ministry of Education, 2004). It highlights the importance of English listening comprehension in contemporary society. In 2018, CSE officially released, which provided a diversified and hierarchical evaluation of listening comprehension (Guo, 2018). In 2019, the scale has been linked with TOEFL test scores, which marks the integration of China's English language proficiency standards with international test, and reflects the scale as a measure of ability and plays an active role in promoting multiple evaluations (Qiu, 2019). This means that the scale has its meaning as an evaluation standard.

For a long time, public English courses for non-English majors in engineering colleges have few hours and are not focused, making it difficult to meet the listening learning needs of non-English majors. Coupled with the time-consuming nature of English listening courses, non-English majors in engineering colleges will inevitably have problems in the process of listening comprehension. The purpose of this research is to use the Listening Proficiency Subscale in CSE as a measurement standard to conduct a questionnaire survey on 134 non-English majors from

new energy, computer, nuclear engineering, electrical, business and other non-English majors of North China Electric Power University to analyze the existing problems of students' listening comprehension and apply some strategies to promote students' listening comprehension skill through corresponding practical researches.

1. STATUS QUO AND PROBLEMS OF NON-ENGLISH MAJORS IN LISTENING COMPREHENSION ABILITY

1.1 Current Situation of Non-English Majors In Listening Comprehension Ability

1.1.1 Conduct a Questionnaire Survey to Obtain the Current Situation of Non-English Majors in Listening Comprehension Ability

There are 134 students from new energy, computer, nuclear engineering, electrical, business and other non-English majors participated in the questionnaire survey. There are 8 forms related to listening comprehension in CSE, including the Listening Proficiency Subscale which is used to judge or diagnose the level of English listening comprehension ability of language learners and users. The Listening Proficiency Subscale consists of descriptors of varying difficulty, which can reliably distinguish students with different listening comprehension levels and has good validity (Zhou, 2020). The listening comprehension level of the research subjects in this study roughly corresponds to the descriptors (Liu and Wu, 2019) in the scale 4-7, so the questionnaire consists of two parts. The part 1 is the student's name, professional grade and other personal information. The part 2 includes the descriptions of grades 4-7 in the Listening Proficiency Subscale, as well as explanations of related descriptions (Zhou, 2020). For example, normally, the rate of about 100-140 words per minute; faster speech rate of about 140-180 words per minute.

In order to digitize the results of the questionnaire survey, the questionnaire uses the Likert 5-level scale to calculate the score (where the value 0 means completely impossible, the value 1 means barely able to do, the value 2 means able to do, the value 3 means better to do, the value 4 means completely do). And when the self-rating value of a certain level reaches half of the total score of that level, the research object has reached this level (Min, He, & Luo, 2018). This research releases questionnaires and collects data through an online platform. At the same time, it provides students with offline training on descriptive words and tries to use descriptive words familiar to students for guidance during this period, helping learners to shift from overall scoring to sub-items score (Zhou, 2020). And 118 valid questionnaires are collected. More than half of the students' self-assessed listening comprehension ability level has not reached the level 4, and about 49% of the students reached the level 4. It can be seen that the listening comprehension level of most students is concentrated in the level 4 or below.

1.1.2 The Status Quo of Non-English Majors in Listening Comprehension Ability

The survey results reflect that among the three descriptions of the four-level listening comprehension ability level, nearly half of the research subjects chose "barely able to do ", and this choice has only one points. For example, in the case of normal speaking speed, clear pronunciation, and familiar topics, the research subjects can barely understand the main point of the speech or grasp the main points and arguments of both sides of the debate. At the same time, the study found that the vocabulary foundation of non-English majors in engineering colleges is generally weak, which leads to insensitivity to the connectives and keywords in the listening materials. What's more, students' listening strategies are used less frequently in listening activities. And students have insufficient accumulation of the knowledge of English culture.

Since the textual factors in the context are inherently related to English listening comprehension (Zhang, 2004), and the logical relationship between speech and debate texts is relatively close, this research aims to improve the English listening comprehension of non-English majors with the help of connectives, context and keywords.

1.2 Problems of Non-English Majors in Listening Ability

1.2.1 Conduct a Relevant Test to Obtain the Questions of Non-English Majors in Listening Comprehension Ability

In order to better grasp the abilities of the research objects in these three aspects, and record the original level of the research objects for later comparison, this study selects listening questions from the College English Test Band 4 whose speed are close to the normal English speed. Listening materials that contain specific English cultural background and more connectives form a test paper with 19 questions. The test questions are divided into three parts according to three different strategies, and each part contains two listening materials.

1.2.2 The Questions of Non-English Majors in Listening Comprehension Ability

The test data shows that about 57.5% of the students fail to answer half of the questions correctly in the use of connectives; only about 25% of the students have a correct rate of 57.14% in the use of contextual understanding, and 26.25% have a correct rate of 71.42%; About 25% of students have a correct rate of 25% in using keywords, only 26.25% of students have a correct rate of 50%. Based on the above, most students don't use the above three strategies enough. And it can be found that the research subjects perform better in the use of connectives, but perform poorer in the use of context and keywords. Therefore, this study concludes that non-English college students in engineering colleges have weak knowledge

of English culture, and it is difficult to rely on contextual factors in the listening materials to help understand the text. At the same time, students have a poor vocabulary foundation which makes it difficult for students to rely on keywords to predict and judge the theme of listening materials. And the poor vocabulary foundation also affects students' perception and immediate response to connectives when listening.

2. STRATEGIES ADOPTED TO IMPROVE NON-ENGLISH MAJORS' LISTENING ABILITY

Based on the above findings, the research intends to propose corresponding strategies from three aspects: connectives, context and keywords to improve the listening comprehension of non-English majors in engineering colleges.

2.1 Understanding With Help of Connectives

Connectives can effectively promote students' grasp of the overall structure of an article. English is a formal language, which emphasizes hypothesis. Any text has a certain text structure, that is, the overall structure of the text, which is the composition of contextual variables related to the actual situation that constitutes the text (Zeng, 2013). Sentences in a text, regardless of spoken style or written style, are generally connected by connecting words such as conjunctions and relative words. Students' listening comprehension ability not only includes the understanding of sentences and their implications, but also includes the grasp of the overall structure of the text. According to related research, connectives can effectively and clearly express the relationship between the connected components.

Connectives can effectively promote students' proficiency in the discourse structure schema, which in turn can help students reduce part of the memory load of listening, thereby improving students' listening comprehension ability to master the main idea of the text.

2.2 Understanding With the Help of Context

The lack of context directly restricts the understanding of the text. Context is a variety of subjective factors that people rely on to understand and use language in communication with others. It includes linguistic factors as well as non-verbal factors (Zhang, 2004). When learners ignore the context in the listening chapter, they can only hear the details of a few words, and it is difficult to understand the general idea of the passage, which causes the breadth and depth of listening to be greatly limited. Therefore, in order to effectively use context to improve listening ability, pre-listening preparations. For example, understanding the background knowledge related to the listening materials, predicting the subject of the listening materials and paying attention to the emotional meaning contained in the tone of voice are of great help.

2.3 Guessing From the Keywords

Keywords can help predict the theme of listening materials and prepare the psychological basis for the following listening activities. The use of this strategy has certain limitations and requires the presentation of certain textual materials, such as the options for examination questions given in the CET-4, and the general content or framework of the lecture given in an open class. In the presented text materials, some words have specific meanings and are closely related to the content or themes of the listening materials. Therefore, the keywords in the text material is of great importance to help predict the subject of the listening material, then help students to get familiar with the context in advance and improve listening comprehension.

3. RESEARCH PRACTICE AND RESEARCH RESULT

3.1 Methods Taken to Show the Result of the Strategies

In this study, the correct numbers of questions that test the ability of the research object before and after the practical study which focuses on the use of connectives, context and keywords were substituted into the definite form of the sample regression equation of the unary linear regression model to analyze. Then the influence of the three strategies on the improvement of non-English majors' listening ability is obtained, and finally the strategies for improving the English listening ability of non-English majors in engineering colleges are given.

3.2 Research Experience

3.2.1 English Activities

Based on the above strategies, this research conducted a practical study on 134 first-year non-English majors from North China Electric Power University for a period of one month with a frequency of twice a week. Listening materials from the CET-4 with more context and logic, more connectives, and a clearer structure of the text are selected as examples to discuss the importance of connectives and context in listening comprehension. For example: when explaining connectives, first introduce connectives and give students an example to let them understand connectives; secondly, after asking students to conduct listening activities, guide students to find out the connectives contained in the listening materials and analyze their functions in the article and even the structure of this article. Then students will be assigned other listening exercises to finish. During the exercises, students will perform the discrimination exercises of connectives in the listening activities and find or even summarize all

connectives in the text for accumulation, and then analyze their impact on the structure of the text, which helps to grasp the overall context of the article and promote the listening ability.

3.2.2 Knowledge Accumulation

In addition to holding offline listening activities to introduce these three strategies, the research also sets up an online platform to cooperate with offline activities to share relevant listening exercises to consolidate the learning and application of the three strategies, and at the same time conduct English cultural knowledge sharing which is used to promote the accumulation of English cultural knowledge of the research objects to better play the role of context and keywords factors in listening activities. For example, as an English major, the author selects news or articles with obvious contextual factors from current international hotspots or Western masterpieces and rewrites them, combined with the application of contextual factors in listening materials, to encourage students to read and gradually accumulate relevant knowledge of English culture. In addition, since the questions in the following test come from the CET-4, the author selects some of the key vocabulary of CET-4 for students to learn and recite to increase vocabulary and then promote the use of keywords in listening activities.

After the practical research is over, re-test is organized. The test's content and form are consistent with the initial test, the purpose of which is to re-test the research object to collect data and make a comparison with the initial test data, so as to analyze the results to get the useful strategies for non-English majors in engineering colleges to improve their listening comprehension ability.

3.3 Results

This model uses the definite form of the sample regression equation of the unary linear regression model

$$\widehat{Y_i} = \widehat{\beta_{0i}} + \widehat{\beta_i} X_i \quad i = 1, 2, 3$$

The variables are assumed as follows:

X1=The correct number of questions related to the use of keywords in the first test; Y1=The correct number of questions related to the use of keywords in the second test;

X2=The correct number of questions related to the use of connective in the first test; Y2=The correct number of questions related to the use of connective in the second test;

X3=The correct number of questions related to the use of context in the first test; Y3=The correct number of questions related to the use of context in the second test.

In order to eliminate the influence aroused by the different difficulty of the questions on the experimental data, the CET-4 questions were found to be of the same difficulty and classification for testing.

$X1, Y1 \in [0,4]$; $X2, Y2 \in [0,8]$; $X3, Y3 \in [0,7]$

(When one's ability reaches a certain level, he or she can do all the questions of this type)

The Eviews regression results are as follows:

Dependent Variable: Y1
Method: Least Squares
Sample: 1 118
Included observations: 118

Variable	Coefficient	Std. error	t-statistic	Prob.
X1	0.575789	0.072321	7.961578	0.0000
C	2.566594	0.187023	8.376465	0.0000
R-squared	0.648322	Mean dependent var		2.912500
Adjusted R-squared	0.641249	S.D. dependent var		0.957234
S.E. of regression	0.715529	Akaike info criterion		2.193094
Sum squared resid	39.93462	Schwarz criterion		2.252645
Log likelihood	-85.72376	Hannan-Quinn criter.		2.216970
F-statistic	63.38673	Durbin-Watson stat		1.716610
Prob(F-statistic)	0.000000			

Dependent Variable: Y2
Method: Least Squares
Sample: 1 118
Included observations: 118

Variable	Coefficient	Std. error	t-statistic	Prob.
X2	0.754987	0.073074	10.33179	0.0000
C	2.286176	0.313666	7.288564	0.0000
R-squared	0.577799	Mean dependent var		5.325000
Adjusted R-squared	0.572386	S.D. dependent var		1.490688
S.E. of regression	0.974794	Akaike info criterion		2.811501
Sum squared resid	74.11745	Schwarz criterion		2.871052
Log likelihood	-110.4601	Hannan-Quinn criter.		2.835377
F-statistic	106.7460	Durbin-Watson stat		2.444214
Prob (F-statistic)	0.000000			

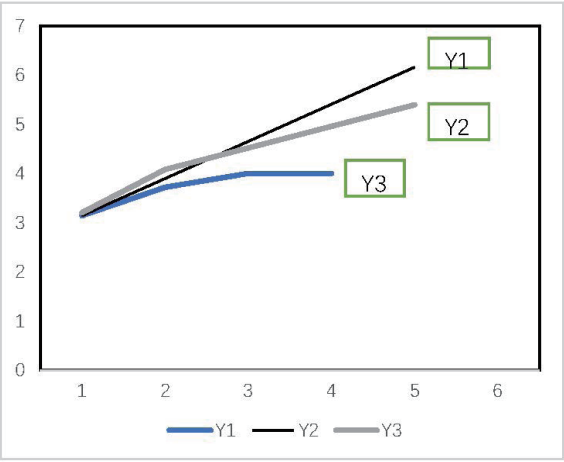
Dependent Variable: Y3
Method: Least Squares
Sample: 1 118
Included observations: 118

Variable	Coefficient	Std. error	t-statistic	Prob.
X3	0.438420	0.086540	5.066082	0.0000
C	3.204016	0.380679	8.416581	0.0000
R-squared	0.547578	Mean dependent var		5.012500
Adjusted R-squared	0.537931	S.D. dependent var		1.354727
S.E. of regression	1.182630	Akaike info criterion		3.198040
Sum squared resid	109.0918	Schwarz criterion		3.257591
Log likelihood	-125.9216	Hannan-Quinn criter.		3.221916
F-statistic	25.66518	Durbin-Watson stat		2.059345
Prob(F-statistic)	0.000003			

After inputting the test data into Eviews for a simple linear regression model, it can be founded that from the

above three regression analysis tables, the P value of F test in each table was less than 0.05, so the three models established were linearly significant. The P values of the three variables of key words, connectives and context in the T-test were also less than 0.05, rejecting the null hypothesis "β=0", which mean that the three strategy variables in the experimental study have a significant impact on the improvement of listening ability. The expressions of the three models are respectively:

$$Y1 = 0.575789X1 + 2.566594$$
$$Y2 = 0.754987X2 + 2.286176$$
$$Y3 = 0.438420X3 + 3.204016$$



Based on the formula, the influence degree of each strategy on the improvement of listening comprehension ability is 0.575789, 0.754987 and 0.438420 respectively. When strategy 1 represents the use of keywords, strategy 2 represents the use of connectives, strategy 3 represents the use of context, it can be proved that the three strategies in the experimental study all help to improve English listening ability, but strategy 2 has the highest influence degree, while strategy 3 has the lowest influence degree.

This also makes sense in reality. The context can only play a role when one has abundant knowledge reserve and what students have learned in the practice of this project is only the tip of the iceberg, so students need to spend more time to accumulate relevant knowledge of English culture. In the process of practicing strategy 2, the connectives accumulated by students cover most of the connectives in the CET-4 listening test. This is a good way to help learners grasp the general idea of the text by using connectives they are already familiar with. In addition, the subjects relied on the keywords in the questions to predict the topic content that might not match the listening material. If students rely too much on their own wrong prediction results, it may be counterproductive,. This gives reason to the result that the impact of keywords is not high.

The goodness of fit of model 2 and model 3 (connectives and context) is not high. The possible reasons are as follows: 1. The number of samples is small, part of samples are lost in the process of answer gathering, and the clarity of questionnaire design may has an adverse effect on the data; 2. The test questions have the same level of difficulty. And different individuals have different accumulated English knowledge, which will also affect the test accuracy rate; 3. Individual memory differences are also unavoidable. Although the goodness of fit of model 2 and model 3 (connectives and context) is not high, the model is basically effective, and the conclusions can also be used to teach students specifically.

To sum up, understanding with the help of connectives has the highest influence degree, then comes the strategy of guessing with the help of keywords and last comes the strategy of understanding with the help of context.

CONCLUSION

The purpose of this research is to use the Listening Proficiency Subscale in CSE for evaluation, and to obtain the current situation and problems of the listening ability of non-English majors in engineering colleges represented by North China Electric Power University. After comparison, the data leads to useful strategies for non-English majors in engineering colleges to improve their listening comprehension ability. Among these strategies, the help of connectives has a higher impact on the improvement of listening comprehension ability of research subjects, while the help of context and keywords have a lower impact. The possible reasons are as follows: The connectives accumulated by the research subjects in the practical activities cover a large range of the connectives in the listening exercises from the College English Test Band 4 , which can better help the learners to grasp the main idea of the article through the familiar connectives. However, the role played by the context and keywords relies heavily on students' English ability and knowledge, such as the original accumulation of English cultural knowledge and the understanding of the meaning of keywords and their related topics, so it is difficult for context and keywords to play a role in a relatively short period of time.

Based on the above practical research, due to the lack of relevant English cultural courses and the impact of English cultural environment for non-English college students in NCEPU , the improvement of English listening comprehension not only requires the use of listening comprehension strategies, but also English cultural knowledge to work together. What's more, since English is a logical language, logical words and connectives in listening materials are helpful to grasp the main idea of the article and is of great benefit to the improvement of students' listening ability.

REFERENCES

Guo, X. T. (2018). *China's Standards of English Language Ability will be officially implemented on June 1st*. [EB/OL]. http://www.gov.cn/fuwu/2018-04/18/content_5283554.htm, 2018-04-18.

Liu, J. D., & Wu, S. (2019). *Development of The China's Standards of English Language Ability.* Beijing: *Higher Education Press*.

Min, S. C., He, L. Z., & Luo, L. (2018).Validation of Listening Descriptors of China's Standards of English: An Analysis of Self-assessment Data Using Polytomous IRT Models. *Foreign Language in China,* (02), 72-81. doi:10.13564/j.cnki.issn.1672-9382.2018.02.010.

Ministry of Education & State Language Affairs Commission. (2018). *China's Standards of English Language Ability*. Beijing: Higher Educational Press.

Ministry of Education. (2004). *College English course teaching requirements*. Shanghai: Shanghai Foreign Language Education Press.

Qiu, C. H. (2019). *TOEFL scores formally "combined" with China's Standards of English Language Ability.* [EB/OL] https://baijiahao.baidu.com/s?id=1652612735793353917&wfr=spider&for=pc, 2019-12-11.

Wang, W. J. (2011). *How to improve students' English listening comprehension ability. Examination Weekly,* (48), 104-105.

Zeng, J. J. (2013). A study on the effects of connectives on non − English speaker's listening comprehension of the expositions. *Journal of Xi'an Petroleum University* (*Social Science Edition*), (06), 95-102.

Zhang, Q. (2004). Context and English listening teaching. *Journal of Southwest University for Nationalities* (*Humanities and Social Sciences Edition*), (03), 443-446.

Zhou, Y. Q. (2020). Validating the self-assessment grids of China's Standards of English Language Ability [J/OL]. *Modern Foreign Languages*, (1-12) [2020-11-05].https://kns-cnki/detail/44.1165.H.20200930.1532.016.html