

Study on Effects of English Listening and Reading Performance on Undergraduates' English Achievement

-- A Case Study of Zhejiang Yuexiu University

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Abstract

With the development of economic globalization, it is obvious that English has gained an increasing attention. However, studies regarding the potential factors affecting undergraduates' English achievement are still limited. Therefore, this research aims to figure out: first, the relationship among English listening performance, English reading performance and English achievement; second, the effects of English listening performance and English reading performance on English achievement and their causal relationship. A total of 10042 Chinese undergraduates (from forty-five majors) participated in this study. The results found that undergraduates' English listening performance, English reading performance and English achievement are significantly positively correlated with each other. Moreover, undergraduates' English listening performance and English reading performance can significantly predict their overall English achievement. These findings contribute to the understanding of effects of English listening and reading performance on undergraduates' English achievement. Limitations and suggestions for future research are also discussed.

Keywords

English Listening Performance; English Reading Performance; English Achievement.

1. Introduction

1.1. Background of the Research

It is well documented that, in terms of the time spent on communication, listening is responsible for 40 to 50 percent, while speaking, reading, and writing makes up 25 to 30 percent, 11 to 16 percent and about 9 percent respectively [1], which indicates that listening is the most frequently used language skill [2]. However, many EFL students have difficulty in understanding the spoken language. Currently, teachers and students realize the importance of listening comprehension for academic success [3, 4]. Furthermore, reading is also regarded as an indispensable part for students in both class and extracurricular context [5, 6], whereas plenty of students have not yet acquired satisfactory reading performance [7].

1.2. Significance and Purpose of the Research

The majority of studies focus on the analysis of current situations on English reading or listening performance, while only a few of them pay attention to their relationship and causal relationship. By searching key words: "English reading performance", "English listening performance" and "English achievement" in CNKI, 14 papers regarding this topic are found, while none of them tested the effects of English listening and reading performance on English achievement. Therefore, the current research aims to the effects of English listening and

reading performance on English achievement by collecting and analyzing CET4 and CET6 test results of college students in Zhejiang Yuexiu University. In terms of theoretical values, this study will provide plenty of data to determine the relationship among English reading performance, English listening performance and English achievement and their causal relationship. With regard to practical implications, this study will make teachers and students realize the importance of English reading performance and English listening performance on their overall language achievement and thus they are more likely to invest more time and efforts in learning English listening and reading.

2. Literature Review

2.1. Listening Comprehension

2.1.1. Definition and Concept of Listening Comprehension

Listening comprehension is defined as the activity of trying to get useful information from what we heard [8]. Listening comprehension is also perceived as a process in which the listener obtains the meaning by using contextual information and knowledge already known [9]. Additionally, Rost [10] defines listening comprehension as a process of receiving, constructing as well as representing meaning, and negotiating as well as responding meaning with others.

2.1.2. Pattern of Listening Comprehension

Listening is made up of various complex processes and there are three common cognitive processes: *the bottom-up processing* (data-driven), *the top-down processing* (conceptually-driven) and *the interactive processing*.

Bottom-up processing means combining meaning from the smallest unit with the largest one of the spoken language. From the perspective of bottom-up processing, listening is a process of decoding the sounds, from the smallest meaningful units (phonemes) to complete texts. The phonemic units are decoded and connected to construct words and then words are connected to construct phrases. After that, phrases are connected to construct utterances and utterances are connected to construct complete, meaningful text. In other words, meaning is formed at as in the last step.

Top-down processing refers to utilizing background information in processing the meaning of a text. The top-down processing puts more emphases on the background knowledge of the learners when they are processing the information [11].

Interactive processing is proposed to tackle the disadvantages of the above two types. It is widely believed that both top-down and bottom-up processing should be combined together since simultaneous processing of background information, contextual information and linguistic information will make listening comprehension become easy. When the the material is familiar to listeners, they can use the background knowledge to make predictions. Nevertheless, if the information is unfamiliar, they have no choice but to rely on their linguistic abilities.

2.2. Reading Comprehension

2.2.1. Definition and Concept of Reading Comprehension

Previous studies have proposed numerous concepts and theories about reading comprehension. Reading comprehension is defined as a process combining psychological and physical activities with the purpose of understanding written texts and obtaining information [12]. Reading comprehension is to obtain intended messages from the target text [13]. Allen [14] hold the viewpoint that reading has changed from what was considered a receptive process to what is an interactive process.

2.2.2. Pattern of Reading Comprehension

Generally, There are three patterns for the reading process: *the bottom-up processing*, *the top-down processing*, and *the interactive processing* [12].

Bottom-up processing refers to the process of obtaining meaning from the words of the text. The reader reads all of the words before he could completely understand the text. The disadvantage of it is that only when the readers can correctly decode the linguistic units and figure out the relations between the words, he could succeed in understanding the reading materials.

Top-down processing means reading the text as a whole and to relate it to the existing knowledge. During this process, they can reckon the message the writer wants to express and adapt their mind based on what they read in the text.

Interactive processing is developed from the blend of the bottom-up and top-down models. Nunan [15] contended that efficient and effective reading needs both top-down and bottom-up processing. Given the fact that the interactive processing have positive impacts for L2 learners about achieving efficient and effective reading, English teachers should try to employ such method while designing teaching activities so as to enhance EFL students English reading performance.

2.3. Relationship among English Listening Performance, English Reading Performance and English Achievement

Recent studies have illustrated the the correlations between listening, reading, writing, speaking performance and overall English achievement. For example, Bozorgian [16] examined the relationship between listening performance and other language abilities according to the scores International English Language Testing System (IELTS) of Iranians (N=1800). The results indicated that learners' English listening performance is closely related with speaking ($r = .654, p \leq .000$), reading ($r = .735, p \leq .000$), writing ($r = .643, p \leq .000$), and the overall IELTS performance ($r = .887, n = 1800, p \leq .000$).

3. Methodology

3.1. Hypotheses of the Research

According to the aforementioned rationale, the following hypotheses were tested in this research.

H1: Undergraduates' English listening performance, English reading performance and English achievement are significantly positively related with each other.

H2: Undergraduates' English listening performance and English reading performance have significant predictive effects on their English achievement.

3.2. Subjects of the Research

A total of 10042 college students (4987 of them finishing the College English Test Band 4 (CET4) and 5055 completing the College English Test Band 6 (CET6)) participated in the present study, who were from 45 majors in Zhejiang Yuexiu University in Shaoxing, a city situated in southeast China. Among the sample, the majority of students were second-year students and third-year students.

3.3. Instrument of the Research

In this research, questionnaires (quantitative method) was used to test the research hypotheses. The questionnaire was composed of the following parts. The first part is about the demographic information of subjects including name, ID number, student number, grade, class and major. And the second part is concerned with the test results of reading comprehension, listening comprehension and total score in CET4/CET6.

3.4. Data Collection and Analysis

The questionnaires were sent to 10042 college students who participated in CET4 or CET6 test from 45 majors in Zhejiang Yuexiu University. After that, the questionnaires were collected and then analyzed by software SPSS 26.0. Mean and standard deviation were used to figure out the descriptive information of the participants, and Pearson correlation analyses were utilized to scrutinize the relationship among undergraduates' English listening performance, English reading performance and English achievement. Finally, the multiple linear analyses were employed to determine the effects of English listening and reading performance on English achievement.

4. Results and Analyses

4.1. Descriptive Statistics Analysis

4.1.1. Descriptive Statistics Analysis of CET4

This section shows a summary of the findings of correlation between English listening and reading performance and English achievement in CET4.

Table 1. Descriptive Statistics for English Listening and Reading Performance and English Achievement in CET4 and Cronbach's Alpha of the Scale

Variables	Mean	Std. Deviation	N	Cronbach's Alpha
English Achievement	431.30	62.928	4987	0.830
English Listening Performance	153.89	30.062	4987	
English Reading Performance	142.84	27.311	4987	

As shown in table 1, in CET 4, the Mean for English listening performance, English reading performance and English achievement are 153.89, 142.84, and 431.30 respectively. And the Standard Deviation for English listening performance, English reading performance and English achievement are 30.062, 27.311, and 62.928 respectively. In addition, the Cronbach's Alpha of this questionnaire is 0.830, which suggests a good reliability.

4.1.2. Descriptive Statistics Analysis of CET6

This section presents a summary of the findings of correlation between English listening and reading performance and English achievement in CET6.

Table 2. Descriptive Statistics for English Listening and Reading Performance and English Achievement in CET6 and Cronbach's Alpha of the Scale

Variables	Mean	Std. Deviation	N	Cronbach's Alpha
English Achievement	386.85	64.473	5055	0.833
English Listening Performance	134.00	31.436	5055	
English Reading Performance	139.40	31.842	5055	

As shown in table 2, in CET 6, the Mean for English listening performance, English reading performance and English achievement are 134.00, 139.40, and 386.85 respectively. And the Standard Deviation for English listening performance, English reading performance and English achievement are 31.436, 31.842, and 64.473 respectively. In addition, the Cronbach's Alpha is 0.833, which indicates the questionnaire has a good reliability.

4.2. Pearson Correlation Analysis

4.2.1. Pearson Correlation Analysis Between English Listening and Reading Performance in CET4

Table 3. Correlation between English Listening and Reading Performance and English Achievement in CET4

Variables		English Achievement	English Listening Performance	English Reading Performance
English Achievement	Pearson Correlation	1	.851**	.839**
	Sig. (2-tailed)		.000	.000
	N	4987	4987	4987
English Listening Performance	Pearson Correlation	.851**	1	.510**
	Sig. (2-tailed)	.000		.000
	N	4987	4987	4987
English Reading Performance	Pearson Correlation	.839**	.510**	1
	Sig. (2-tailed)	.000	.000	
	N	4987	4987	4987

** Correlation is significant at the 0.01 level (2-tailed).

The statistical results that presented in Table 3 indicate that English listening performance, English reading performance and English achievement are significantly positively correlated with each other. For example, the higher the students' English listening performance in CET4, the higher the students' English achievement in this test.

4.2.2. Pearson Correlation Analysis Between English Listening and Reading Performance in CET6

Table 4. Correlation between English Listening and Reading Performance and English Achievement in CET6

Variables		English Achievement	English Listening Performance	English Reading Performance
English Achievement	Pearson Correlation	1	.821**	.835**
	Sig. (2-tailed)		.000	.000
	N	5055	5055	5055
English Listening Performance	Pearson Correlation	.821**	1	.467**
	Sig. (2-tailed)	.000		.000
	N	5055	5055	5055
English Reading Performance	Pearson Correlation	.835**	.467**	1
	Sig. (2-tailed)	.000	.000	
	N	5055	5055	5055

** Correlation is significant at the 0.01 level (2-tailed).

As shown in table 4, English listening performance, English reading performance and English achievement are significantly positively correlated with each other. For example, the higher the students' English reading performance in CET6, the higher the students' English achievement in this test.

4.3. Multiple Linear Regression Analysis

4.3.1. Multiple Linear Regression Analysis in CET4

Table 5. Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	English Reading Performance, English Listening Performance ^b	.	Enter

a. Dependent Variable: English Achievement

b. All requested variables entered.

Table 6. Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.972 ^a	.945	.945	14.697

a. Predictors:(Constant), English Reading performance, English Listening Performance

b. Dependent Variable: English Achievement

Table 7. ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	18667394.907	2	9333697.454	43212.499	.000 ^b
	Residual	1076520.672	4984	215.995		
	Total	19743915.579	4986			

a. Dependent Variable: English Achievement

b. Predictors: (Constant), English Reading Performance, English Listening Performance

Table 8. Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations	
		B	Std. Error	Beta			Zero-order	Partial
1	(Constant)	67.038	1.257		53.331	.000		
	English Listening Performance	1.196	.008	.571	148.578	.000	.851	.903
	English Reading Performance	1.262	.009	.548	142.395	.000	.839	.896

a. Dependent Variable: English Achievement

As shown in table 5, multiple linear regression analysis was run to test the predictability of English achievement by English listening performance and English reading performance. As adjusted R square value is 0.945, which shows that independent variables account for 94.5% of dependent variable. In other words, it indicates that, in CET4, about 94.5% of the variation in

English achievement can be explained by taking English listening performance and English reading performance into account. The results of ANOVA analysis is illustrated in table 7. It can be found that the estimated model can explain the impact of English listening performance and English reading performance on English achievement (P <0.05). Furthermore, the result of Coefficients analysis (P <0.05) shows the improvement of English listening performance and English reading performance cause the enhancement of English achievement in CET4.

4.3.2. Multiple Linear Regression Analysis in CET6

Table 9. Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	English Reading Performance, English Listening Performance ^b	.	Enter

a. Dependent Variable: English Achievement

b. All requested variables entered.

Table 10. Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.967 ^a	.936	.936	16.336

a. Predictors:(Constant), English Reading performance, English Listening Performance

b. Dependent Variable: English Achievement

Table 11. ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	19660121.251	2	9830060.625	36836.558	.000 ^b
	Residual	1348157.084	5052	266.856		
	Total	21008278.335	5054			

a. Dependent Variable: English Achievement

b. Predictors: (Constant), English Reading Performance, English Listening Performance

Table 12. Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
	B	Std. Error	Beta			Zero-order	Partial	
1	(Constant)	72.115	1.182		61.005	.000		
	English Listening Performance	1.131	.008	.552	136.868	.000	.821	.887
	English Reading Performance	1.170	.008	.578	143.458	.000	.835	.896

a. Dependent Variable: English Achievement

As shown in table 9, multiple linear regression analysis was run to test the predictability of English achievement by English listening performance and English reading performance. As adjusted R square value is 0.936, which shows that independent variables account for 93.6% of

dependent variable. In other words, it indicates that, in CET6, about 93.6% of the variation in English achievement can be explained by taking English listening performance and English reading performance into account. The results of ANOVA analysis is illustrated in table 11. It can be found that the estimated model can explain the impact of English listening performance and English reading performance on English achievement ($P < 0.05$). Furthermore, the result of Coefficients analysis ($P < 0.05$) shows the improvement of English listening performance and English reading performance cause the enhancement of English achievement in CET6.

5. Conclusion

5.1. Major Findings

Through descriptive statistics, Pearson correlation analyses and multiple linear regression analysis in both CET4 and CET6, this study aims to scrutinize the effects of English listening and reading performance on undergraduates' English achievement and confirm the following hypotheses:

H1: Undergraduates' English listening performance, English reading performance and English achievement are significantly positively related with each other.

H2: Undergraduates' English listening performance and English reading performance have significant predictive effects on their English achievement.

5.2. Limitations and Future Research Prospects

Although some significant achievements have been found in this study, there are still some deficiencies as followed.

Firstly, even though this research studies the effects of English listening and reading performance on undergraduates' English achievement, some other factors such as English speaking performance and English writing performance that could affect undergraduates' English achievement are ignored.

Secondly, all the participants in this study are from a private university, Zhejiang Yuexiu University and thus the generalizability of the findings of this research need to be further investigated.

Therefore, for the research in future, more factors influencing undergraduates' English achievement need to be considered and analyzed, and subjects from a wider range of universities should be chosen.

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