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## College students English listening anxiety self-schema research based on the cluster analysis

Chunhua Hu

Lushan College of Guangxi University of Science and Technology, Liuzhou, 545000,  
(CHINA)

### ABSTRACT

In English learning, emotional factors are critical. In addition, emotional factors such as the students' learning potential, motivation, anxiety, self-esteem and others have important influence on English learning. For the English listening anxiety, academic world have studied on it in the last century eighty's. According to the study, it showed that the students' anxious psychological phenomenon performs significantly in the process of English listening and speaking and with the anxiety, students will produce barriers in English listening. In this paper, based on the clustering analysis, it takes further study on anxious self-schema of college students' English listening and type it. So as to study the differences of different anxious self-schema in school types and gender of college students and evaluate correctly the situation of English listening anxiety of college students.

### KEYWORDS

Listening anxiety; Cluster analysis; Self-schema.



## INTRODUCTION

As far as English language learning is concerned, the main way of receiving language information is listening. Listening is the basic channel of information acceptance, and the foundation of speaking and writing. During present university English test, the Ministry of education also gradually improves the proportion of listening test to strengthen college students' listening ability assessment. However, as far as many non-English major students are concerned, they will show a certain degree of anxiety, tension and cannot normally use keywords and background knowledge to understand the heard materials in the English listening test so that the hearing level is affected. In university English listening, the situation of listening anxiety exists. Researching on college students' listening anxiety needs to correctly grasp the characteristics of each group of listening learning and carry out the study of difference according to different groups.

## THEORETICAL BASIS

### Anxiety

The famous psychologist Freud points out that self which is a kind of driving force is one of the components of individual personality's structure and gradually differentiates out from ID. with Freud's research on the body deepening, he introduced the anxiety factors to the study of the structure of human body (self-ID super ego) . He thought that self that was in the central position was often confused by ID impulse, threatened by reality and restricted by super ego. Therefore, the self is the source of anxiety, in another word, anxiety is produced and felt by self. The level of self-regulation have directly influence on the level of anxiety.

### Self-Schema

On the basis of focusing on the information processing for self-understanding, Markus puts forward the concept of "self schema". Markus thinks characterization of self knowledge is self schema. It's about cognitive generalization and cognitive structure of the self. It mainly includes the cognitive representation which based on specific situation and time and from others. Self evaluation influence of self information input, the individual process the self information and the self information output. It is the main resources to come into being the individual mood. In turn, individual mood and behaviors belong to a kind of emotional structure of learners. At he same time, self schema is the structure of a multi dimension and multi-level. There are three main components of cognition, emotion, action, mainly including self characteristics of belief, self evaluation, implementation etc... As for the self concept foreign language. It is also multi dimension and multi-level and includes two levels. In it, the overall foreign language self concepts belong to upper level, while the four different skills-listening, speaking, reading, writing, of foreign language belong to lower.

## RESEARCH PROCESS

### Study Object

Considering from the sampling convenience and the limitations of researchers themselves, freshmen and sophomores from two universities which were in researchers' units were selected and randomly selected a part of the non-English college students to Investigate. Among them, there were 315 pretrial participants' questionnaires. However, according to the clear tendency of answering questionnaires, not integrity and authenticity of asking, 40 questionnaires were put forward with 275 valid questionnaires. There were 125 boys and 150 girls. According to the data obtained by the variance of multiple factors' analysis of SPSS19.0 software on the study, the opposite sample was further tested.

### Research tool

This study takes two questionnaires as the research tool, namely "personal information table". In it, "personal information table" include many basic information. For example, students' school type, gender, major, grade, age, their parents' education and learning time and so on. While the "College Students' English Listening anxiety self schema Questionnaire" is compiled, on the basis of the interview with college students and combined with "English Listening Anxiety Scale", "self esteem scale". The contents of the questionnaire includes four dimensions, namely, students' listening anxiety, listening learning low self-efficacy sense feeling, listening skills negative and low initiative, listening learning low self-esteem. Each dimension has 5 items, a total of 20 questions. At the same time, according to the Likert's 5 points scale scoring system for each item score, 5 points: fully comply with;4 points: accords;3 points: say not clear;2 points: is not conformity with;1point: fail to meet.

### Statistical analysis of the data

According to the SPSS19.0 statistical software, it showed there were higher negative level when each item's score is higher. Meanwhile, combined with the confirmatory factor and exploratory factor analysis, we can know the construct validity of the selected questionnaires of this study is better. In addition, we can guarantee the content validity of this questionnaire by interviewing students, theoretical conception and literature analysis. Moreover, the coefficient internal consistency of the scale's internal and scale's internal within each dimension are both in 0.225~0.834 so the reliability is higher.

## THE RESULTS AND DISCUSSION OF STUDY

### College students' English listening anxiety self schema

Through the integral description of college students' English listening anxiety self schema status, it can be learned that the highest value of anxiety self schema is 4.89, the minimum value is 1.34 and the average value is 3.062. At the same time, from the four dimensions of the questionnaire on students' scores of listening anxiety status, we can know the negative low initiative average value of college students' listening skills is 3.305, the low self-esteem average value of listening learning is 2.973 and the average value of listening anxiety is 3.168. Specific data such as shown in TABLE 1

**TABLE 1: College English listening anxiety self-schemata overall condition**

Questionnaire items	Number of people	The maximum value	The minimum value	The average value	Standard deviation
The overall situation	275	4.89	1.34	3.06	0.71
Active listening skills negative low	275	4.89	1.64	3.30	0.85
Listening anxiety	275	4.65	1.34	3.18	0.73
Listening low self-esteem hearing	275	4.62	1.39	2.95	0.85
Low self-efficacy	275	4.56	1.51	2.80	0.68

We can see from TABLE 1, the average value of college students' listening anxiety self schema is higher than the critical point and in the questionnaire items, the most active is negative low initiative listening skills, thus, we can know college students are weaker in listening skills. And they have inadequate mastery of homophone different words and the ability of guessing unfamiliar words when listening. At the same time, the whole university is in a state of listening anxiety. In the process of listening, the students' psychological emotional impact has influence on the listening effect. In subjective aspect, it influenced students' listening anxiety when they are lack of confidence about self listening ability, have insufficient listening skills and language knowledge. In objective aspect, students didn't hear some words and stopped thinking so that they miss the below content hearing and the listening active object liquidity.

### Four kinds of English listening anxiety self schema.

This study based on clustering analysis while selecting the appreciate number of categories are the key of clustering analysis. When we selected the number of categories, we should ensure that the difference within class minimum and the difference between class maximum. During the process of research. We should be first to replace standard scores with scale of the items of the test scores, and then clustering the research object and ensure the accuracy of clustering results. According to cluster analysis and four dimensions of questionnaire in accordance with the categories of data basis consistent principle, listening anxiety self schema table classification.

The first category for the high anxiety (negative) which is characterized by college students' listening skills negative and low initiative, listening anxiety had low scores, while with low self-esteem, low self-efficacy had high scores. Student are not confident of their listening ability. The group accounted for 26% of the total number of.

Second kinds of high anxiety (active) students' English listening scores low, because of low self-esteem and low self-efficacy. While scores high because of listening skills negative, low initiative and listening anxiety. For students, there's a strong self-esteem and self belief in learning and learning initiative. But showing signs of nervousness anxiety in listening practice. The total number of 23% groups.

Third kinds of medium listening anxiety type, characteristics of performance for the students in the listening skills of negative very low initiative, low listening anxiety, low self-esteem, low self-efficacy. The four aspects are the medium level the score, listening level of medium. The listening learning neither active nor avoid, accounting for 36% of the total number.

The fourth category is the lower listening anxiety (active) students in the listening skills of negative low initiative, low listening anxiety, low self-esteem, low self-efficacy sense, four aspects are at a low score. With the heightening of the English learning ability and interest in learning, listening, learning initiative, the total number 15%.

Overall, in terms of gender the difference of boys and girls in college English listening anxiety self schema is significant ( $P=0.48$ ) girls' self schema are more active than boys'. And in high anxiety (active) types, the difference is particularly significant ( $P=0.27$ ). Girls' self schema of listening anxiety are less than boys'. While in the other three types, difference between men and women is not obvious. Specific data such as shown in TABLE 2. Not only in grade, one or two grade students differ significantly ( $P=0.18$ ) but also in the high anxiety (passive), high anxiety (active) and medium anxiety

differ significantly. The second grade students' self schema of listening anxiety is lower than that of the first grade, the ratio of specific data such as shown in TABLE 3.

From TABLE 2, 3 shows that, compared to boys, girls' English listening self schema is more active, While the boys lose information easily in listening. So formation of high anxiety(active) self schema. At the same time, because of the influence of listening training, living environment, the freshmen listening level is relatively low, and to the second grade they will gradually realize the importance of English listening and take the initiative to master listening skills, decrease anxiety.

**TABLE 2 : Difference of college students English listening anxiety self schema gender, grade.**

Type	Average		Standard Deviation		Value T	Value P
	BOY	GIRL	BOY	GIRL		
The overall situation	3.06	2.86	0.77	0.72	1.21	0.05
High Anxiety (Negative)	3.04	2.92	0.83	0.86	1.14	0.08
High Anxiety (Active)	3.41	2.89	0.98	0.66	0.23	0.28
Intermediate listening anxiety	3.12	2.94	0.81	0.57	1.29	0.04
Low listening anxiety (Active)	2.67	2.71	0.80	0.74		

**TABLE 3 : College Students' English listening anxiety self schema gender differences**

Type	Average		Standard Deviation		The value of T	The value of p
	Freshman	Sophomore	Freshman	Sophomore		
The overall situation	3.07	2.84	0.77	0.72	1.21	0.18
High Anxiety(Negative)	3.27	2.81	0.97	0.71	2.27	0.24
High Anxiety(Active)	3.16	2.99	0.78	0.72	1.89	0.48
Intermediate listening anxiety	3.04	2.75	0.88	0.70	2.06	0.18
Low listening anxiety(Active)	2.78	2.82	0.85	0.87	1.13	0.22

**APPLICATION OF FUZZY CLUSTERING IN COLLEGE ENGLISH TEACHING OF DIFFERENT LEVELS STUDENTS**

This paper focused on the current college English education, use the ideological cluster analysis take the student classification based on students' English results. So in English teaching, we can choose different teaching, coaching methods and evaluation criteria based on the different stages of the students to fully improve students' English proficiency. In one class, each student's level of knowledge structure is not the same, in order to better teach English, we should take the classify for different levels of students based on the specific professional circumstances of a student for and student achievement, take different teaching methods, different teaching requirements proposed by this sub-level management education to make students' overall performance can be improved. The classification method of the students are so many, the following methods of cluster analysis we introduce the student category. The data tables of to be classified Students' achievement of English is shown as TABLE 4.

**TABLE 4 : Data tables of to be classified Students' achievement of English**

	Listening	Single choice	Cloze	Reading	Writing	Total
Students 1	70	50	135	146	124	525
Students 2	100	115	90	113	107	525
Students 3	90	100	120	112	103	525
Students 4	125	130	90	90	90	525
Students 5	60	80	120	135	130	525
Students 6	120	100	110	118	77	525
Students 7	125	110	85	128	120	568
Students 8	135	87	90	131	103	546
Students 9	145	120	130	105	137	637
Students 10	110	100	120	124	120	574

Note: All kinds of questions score in the table are into the full marks out with 150 points

### Establishment of the Fuzzy similar matrix

Ten students will be referred to the all classification, each performance as a characterization of whole classification. The following select the appropriate correlation coefficient formula to establish fuzzy similarity relation matrix of ten students. By formula can transform the data in TABLE 4 to fuzzy similar matrix as follows TABLE 5.

**TABLE 5 : The fuzzy similar matrix**

<b>1</b>	<b>0.89</b>	<b>0.81</b>	<b>0.98</b>	<b>0.91</b>	<b>0.68</b>	<b>0.51</b>	<b>0.97</b>	<b>0.84</b>	<b>0.98</b>
0.89	1	0.87	0.86	0.73	0.5	0.91	0.89	0.63	0.84
0.81	0.87	1	0.83	0.84	0.59	0.92	0.92	0.72	0.67
0.98	0.86	0.83	1	0.94	0.77	0.74	0.96	0.82	0.94
0.91	0.73	0.84	0.94	1	0.85	0.7	0.94	0.94	0.55
0.68	0.5	0.59	0.77	0.85	1	0.57	0.66	0.8	0.64
0.51	0.91	0.92	0.74	0.7	0.57	1	0.81	0.63	0.62
0.97	0.89	0.92	0.96	0.94	0.66	0.81	1	0.87	0.89
0.84	0.63	0.72	0.82	0.94	0.8	0.63	0.87	1	0.76
0.98	0.84	0.67	0.94	0.55	0.64	0.62	0.89	0.76	1

### Transformed the similarity matrix to equivalence relations matrix

By the square sum law, the similarity matrix can be calculated to final transitive closure matrix:

1.0000	0.9143	0.9794	0.9415	0.9794	0.8454	0.9156	0.9688	0.9356	0.9753
0.9143	1.0000	0.9996	0.9826	0.9143	0.9826	0.9826	0.9826	0.9143	0.9143
0.9794	0.9143	1.0000	0.9161	0.9794	0.8454	0.9156	0.9161	0.9161	0.9161
0.9415	0.9826	0.9161	1.0000	0.9415	0.9826	0.9826	0.9826	0.9356	0.9453
0.9794	0.9143	0.9794	0.9415	1.0000	0.8454	0.9156	0.9415	0.9356	0.9415
0.8454	0.9826	0.8454	0.9826	0.8454	1.0000	0.8454	0.9143	0.8454	0.8451
0.9156	0.9826	0.9156	0.9826	0.9156	0.8454	1.0000	0.9826	0.9143	0.9143
0.9688	0.9826	0.9161	0.9826	0.9415	0.9143	0.9826	1.0000	0.9356	0.9688
0.9356	0.9143	0.9161	0.9356	0.9356	0.8454	0.9143	0.9356	1.0000	0.9888
0.9753	0.9143	0.9161	0.9853	0.9415	0.8454	0.9143	0.9688	0.9888	1.0000

That is the so-called equivalent matrix. By clustering of students, we can take different teaching methods for each level student. For top student, focuses on guiding students to self; average student, focuses on the complete class requirements independently; for poor students, focusing on incentive their active participation. Also in teaching, we should take different evaluation criteria for students at different levels, and verbal praise and encouragement for students to reach the intended target, such as positive and effective measures to promote student learning.

### CONCLUSION

In the university English learning, reduce the students' English listening anxiety effectively, to improve the students' English level has important significance. Therefore, in English listening, teaching, teachers should be based on different listening anxiety self schema types and dimensions combined with the schematic structure of different grades, gender differences to take reasonable measures to improve the listening and gradually reduce the students' listening anxiety status of students, and improve English listening self-confidence and improve the ability of English.

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