LEARNING MANAGEMENT USING SCHEMA THEORY FOR ENGLISH LISTENING SKILL: A CASE STUDY OF CHINESE VOCATIONAL HIGH SCHOOL STUDENTS IN ZHEJIANG PROVINCE

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This study aimed to improve the English listening skills of vocational high school students and their attitudes towards applying schema theory in English listening classes. Both quantitative and qualitative methods were applied including four online lesson plans, pre-test, post-test, and semi-structured interview with the focus group of four 10th grade Chinese students. The quantitative data was analyzed using a descriptive analysis method with mean and standard deviation while the qualitative data was analyzed using a thematic analysis method.

The results showed that after applying schema theory to English listening lessons, the average score of students before and after the test (x = 13.50) was higher than that of the pre-test (x = 7.50). Students' responses to interviews on interests and motivation, involvement and effectiveness showed that they all expressed a positive attitude towards the application of schema theory in English listening classes. The findings remarkably proved that the application of schema theory should be considered as an alternative and effective way of teaching listening skills in English in Zhejiang province, China.

Keywords: Schema Theory; English listening skill; learning achievement; students’ attitude; 10th grade students

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LEARNING MANAGEMENT USING SCHEMA THEORY

Introduction

As English as a world language continues to expand its boundaries, the importance of teaching English is also gradually increasing. Especially at the end of the twentieth century, with the strengthening of the world economy and trade exchanges, communication in English became more and more frequent, and people's requirements for listening and speaking skills in English are becoming higher and higher.

In 1982, Krashen, a linguistic educator, confirmed the importance of "listening" in the process of language teaching. Listening training is an important part of the English language teaching, which plays an important role in improving the comprehensive language abilities of students. Therefore, people are gradually realizing the importance of listening skills and the urgent need to strengthen listening skills training.

A vocational high school is a type of vocational education institution in China. The difference between vocational high schools and ordinary high schools is that vocational high schools concentrate on developing staff and practitioners with average vocational skills. Those students, whose academic performance is not ideal, will choose to enroll in a vocational high school. They will be more inclined to learn professional skills as early as possible in order to deal with the future competition. Therefore, vocational high schools pay little attention to the English language ability, especially listening proficiency in English.

This research aims to provide EFL education students in China, especially those in vocational high schools, with relevant learning experiences and guidance. The research results of this paper provide students with ideas on how to improve their English listening skills, help them better analyze the English listening materials using schema theory, establish the awareness of accumulating previous knowledge structure, pay attention to knowledge accumulation in daily life and learning, and actively use the English listening skill to improve the English listening ability and the general level of English.

Research Questions
- Would the application of schema theory help compare the English listening skill of vocational high school students in Zhejiang province?
- What attitude would those vocational high school students have towards the application of schema theory in the English listening lessons?

Research Objectives
- To compare the English listening skills of vocational high school students in Zhejiang province before and after the application of schema theory.
- To study the attitude of students of professional secondary schools to the application of schema theory in the English listening classes.

Literature Review

Vocational Education in China
In China, vocational education is defined as education that enables students to acquire the professional knowledge, skills, and ethics required for a certain profession or productive labor. The goal of vocational education in China is to develop skilled workers, laborers, and builders who have a particular level of cultural awareness as well as professional knowledge
and skills. Vocational education, as opposed to general and adult education, concentrates on the development of practical skills and work aptitude.

In the new era of comprehensively deepening reform, China’s Implementation Plan of National Vocational Education Reform puts forward the policy direction of classified reform of vocational education, and makes it clear that “vocational education and general education are two different types of education with their own advantages and they have equally important position.” This important declaration makes it clear that vocational education is a type of education, not a level of education. It is an important symbol for the government to give full play to the ability of vocational education to serve society and personal development.

**English Curriculum in China**

In China, formal English teaching generally starts from the 3rd grade of elementary school. The curriculum standards are uniformly promulgated by the Ministry of Education. Compulsory education has compulsory education English curriculum standards, ordinary high schools have ordinary high school English curriculum standards, and vocational education has vocational education English curriculum standards. The English language is a compulsory subject and takes up a large share of scores at the junior high school entrance exam, high school entrance exam, university entrance exam, graduate entrance exam.

The teaching of English is usually divided into eight main aspects: listening, speaking, reading, writing, phonetics, vocabulary, grammar, and text. Later, the English teaching has gradually got rid of traditional teaching methods, and multimedia-assisted teaching has become an effective teaching method. With the development and update of teaching and learning concepts, the classroom has gradually changed from a teacher-centered to a student-centered. In the process of teaching English, students fully develop their cognitive abilities through participation, experience, interaction, communication, and cooperation.

**English Listening Skill**

The improvement in listening comprehension is limited by many factors. Compared to other language skills, listening skills are at a higher level of practical language ability. This requires students to react quickly, understand correctly, and keep a constant memory of what they hear in a very short time. It reflects the comprehensive knowledge of the language by students and their psychological adaptability.

Thus, listening skills can never really be improved by simply practicing non-skilled listening and ignoring the accumulated improvement and practice of practical language skills (Chen, 2005). Moreover, non-native English learners may be mistaken due to differences in accent or pronunciation (Hotekim & Taylor, 2020).

The CSE, China Standards of English, will be divided into nine levels. Levels 1 and 2 generally correspond to elementary school, level 3 corresponds to lower secondary school, level 4 corresponds to upper secondary school, levels 5 and 6 correspond to universities, level 7 corresponds to pre-advanced level of English, and level 8-9 to advanced foreign languages.

Each level has its own set of criteria for listening, speaking, reading and writing, as well as an approach to translation and knowledge. Under this standard, high school students must understand common language materials in general social situations, understand the topic and main content, understand basic facts and attitudes, and understand the intentions
and attitudes of others. This study will analyze the comprehension skills and analytical abilities of students.

**Schema Theory**

A schema is a representation and storage of knowledge structured around a topic in a simple way. People must learn and assimilate a large amount of information during their lives. These sets of information are not stored haphazardly in people's heads, but rather tied together around a common topic, forming a single unit of knowledge. This is a block diagram. For example, when we see a picture of an animal, we can immediately remember its name, character, lifestyle, and many other details about the animal. This shows that the physical qualities of an animal are related to its name, temperament, lifestyle, and other relevant facts stored in the human brain.

Thus, a schema is a cognitive model of knowledge. The schema theory studies how knowledge is represented. And a theory about how this representation of knowledge facilitates the application of knowledge in its unique way. A schema can be further divided into three categories: a language schema, a content schema, and a rhetorical schema. This paper focuses on the application of the language schema in the vocational high school for listening comprehension of the English language.

Among the three schemata, the language schema is the basis of the other two schemata. Without mastering the corresponding language schema, the listener has neither the ability to recognize words, phrases, and sentences in the material, nor the ability to use the clues and information provided by the material to invoke the appropriate content schema and rhetorical schema, let alone comprehend the material. Rhetoric is also of particular importance. All these determine the students' understanding of the material.

On the one hand, it plays a predictive role: it can help a listener predict the context, eliminate ambiguity, and provide reference and guidance for the accurate interpretation of the textual content. In the process of listening, the information entering the auditory system not only uses the necessary language schemata such as pronunciation, vocabulary and grammar, but also mobilizes the content schema and genre schema in the brain to think, assume, analyze, synthesize, judge and reason, verify and modify the hypothesis, and complete the reorganization and construction of meaning to achieve the purpose of understanding (Huang, 2014).

**Attitudes Towards English as a Foreign Language**

Gardner & Lambert (1972) divide English language learning motivation into integrative motivation and instrumental motivation, and analyze its impact on academic performance. In their study, obsessive learning motivation is considered effective and capable of achieving good results in learning a second foreign language. In short, it is a necessary condition for successful language learning. Learning motivation is not the only factor affecting learners. Many other factors are also key, and motivation and achievement affect each other. Good learning experience and achievements can stimulate a better learning attitude.

Similarly, according to a study by Skehan (2008), a successful experience in learning a second foreign language can also support and create new motivation for learning. A good cycle is formed: Motivation - achievement - higher motivation - better achievement. Motivation is the main influencing factor of learning, which directly affects the long-term
learning process. In the reverse research, it is found that those who can effectively reduce harmful motivation and self-motivation are undoubtedly successful.

With regard to the relationship between attitudes towards learning and academic achievement, scholar Gagne (2001) said: “The satisfaction that students get from academic achievement or progress in learning itself can influence their attitude towards this linguistic ethnic group and even change this attitude, which, in turn, will contribute to the study of the English language.

The above literature shows that previous research has either looked at the impact of students' attitudes towards learning English on their academic performance, or has looked at the effect of achievement in learning English on their attitudes towards learning English. They are relatively independent and have no correlation. Moreover, the theoretical and empirical research took some time, and most of the findings have been verified. At the same time, there are still some shortcomings in the research content of learning attitude, which needs more research.

For this research, the independent variable was schema theory and the dependent variables were vocational school students' improvement in listening skills and attitudes toward using schema theory. An illustration of the conceptual framework of the study is given in Fig.1.

![Conceptual Framework of the Study](image)

**Figure1 - Conceptual Framework of the Study**

*(made by co-authors)*

### Research Methodology

**Research Instruments**

In this thesis, a case study was used as a research approach, which comprised gathering quantitative and qualitative data and combining the two types of data.

The hybrid approach's core premise is to gain a more comprehensive understanding of the research problem (Creswell, 2014).

This paper adopted a case study to better analyze the collected data in details. Quantitative data included pre-test and post-test, and qualitative data included semi-structured interview. Fig. 2 shows the research design of this study.

**Lesson Plans**

The researcher developed four lesson plans, each 40 minutes long, for a total of 320 minutes (1 Lesson Plan = 2 sessions). Over the course of four weeks, the researcher
conducted eight sessions (2 sessions per week). The study's topics were chosen depending on the sample students' English proficiency.

These lesson plans were aimed at teaching 10th-grade students of Chinese vocational high school the following short stories 1) “A Child’s Angel” 2) “So Much to Learn”; 3) “The Time Account” and 4) “Hints for Those That Would Be Rich” from the China's famous English learning website. The major goal of the courses was to see if the use of the schema theory could help the participants understand the content while listening.

**English Listening Achievement Test**

The researcher used achievement tests as the main tool in this research. The test was divided into pre-test and post-test sections with the same number of questions and difficulty level to assess students' English listening skills, including comprehension and analytic skills. Each test consisted of 20 questions, with one point granted for each correct answer. The scope of this test covered four learning materials from the lesson plans, such as vocabulary, phrases, sentence patterns, and so on.

**Validity**

This thesis introduced the concept of IOC in order to better assess the effectiveness of research tools. The Rovinelli & Hambleton (1977) item-to-goal fit index is a tool used in test preparation to assess content validity at the stage of item development. This measure can only be used to evaluate univariate items or items that measure certain combinations of skills.

The research instruments (assessment of achievement through pre- and post-testing, and semi-structured interview questions) in this study were assessed by three assessors, all of whom were experienced English teachers in Thailand and China. The validity test result for all instruments was +1, which is higher than 0.67, indicating that all instruments were acceptable for future data collection.
**Reliability**

Reliability refers to the consistency and stability of research tools, as well as their predictability and correctness. The KR-20 score ranges from 0 to 1, with the closer the number is to 1, the more trustworthy the test. In general, a value greater than 0.7 is regarded acceptable (Kuder & Richardson, 1937).

The Kuder-Richardson 20 (KR-20) formula was employed in this study to assess the reliability of performance exams. Other 30 10th-grade students were invited to take the test in order to ensure the reliability of the tests, and their results were collected and later calculated for the reliability of the tests. The test score for the reliability of the execution tests was 0.89, indicating a high degree of acceptance.

**Target Group of the Study**

Purposeful sampling was used to select four Chinese 10th grade secondary vocational school students in Zhejiang province, two males and two females, for the study. These students were between the ages of 15 and 16, of different genders and with different levels of English proficiency, as well as with different levels of English proficiency. As EFL students, they have mastered the basic skills of listening, speaking, reading and writing after more than three years of studying English as part of the compulsory Chinese language curriculum.

**Data Collection Procedures**

To begin the investigation at a vocational high school in Zhejiang province, the researcher obtained permission from the school's principal. The researcher also addressed a letter to the parents of the participants in the study to explain the situation and gain their consent.

The researcher kept the sample group's personal information, marital status, test papers, and recordings of semi-structured interviews confidential. In other words, throughout the study, all information was kept confidential.

**Data Analysis**

The use of sample group statistics to analyze test scores resulted in a good result, as indicated in Tab. 4 below. The pretest mean score was 7.50 with a standard deviation of 4.596 and the post-test mean score was 13.50 with the standard deviation was 8.839, resulting in a mean difference of 6 points. The significant value (P) obtained was 0.000, which was lower than 0.05 (P*0.05); the T-test value was 3.416, indicating a statistically significant increase in the posttest scores compared to the pretest scores. The statistical comparison of pretest and posttest means is shown as below.

<table>
<thead>
<tr>
<th>Pair</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>pretest</td>
<td>7.50</td>
<td>4</td>
<td>1.732</td>
<td>3.416</td>
<td>.000</td>
</tr>
<tr>
<td>posttest</td>
<td>13.50</td>
<td>4</td>
<td>2.081</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Tab. 5 shows the pre-test and post-test results for the sample group. The overall score for the pre-test and post-test was 20 points. Student G-S01 received the highest score of 10 out of 20 on the pre-test, while student G-S04 received the lowest score of 6 out of 20.

It was discovered by reviewing the post-test scores that all pupils’ scores improved. Student G-S01 received the greatest score (16 out of 20), while student G-S04 received the lowest score (11 out of 20 points). Student G-S03, on the other hand, improved the most, gaining 7 points on the posttest.

Table 5 - Pretest & Posttest Scores of the Sample Group

<table>
<thead>
<tr>
<th>Student ID</th>
<th>Pretest Scores (Full Score=20)</th>
<th>Posttest Scores (Full Score=20)</th>
<th>Increase in test Scores</th>
<th>% Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>G-S01</td>
<td>10</td>
<td>16</td>
<td>6</td>
<td>60%</td>
</tr>
<tr>
<td>G-S02</td>
<td>7</td>
<td>13</td>
<td>6</td>
<td>85.7%</td>
</tr>
<tr>
<td>G-S03</td>
<td>7</td>
<td>14</td>
<td>7</td>
<td>100%</td>
</tr>
<tr>
<td>G-S04</td>
<td>6</td>
<td>11</td>
<td>5</td>
<td>83.3%</td>
</tr>
</tbody>
</table>

When the pre-test and post-test scores of the students were compared, it was evident that the posttest scores were greater than the pretest scores. In brief, after the introduction of schema theory into the English listening course, all students showed an improvement in their results.

Semi-structured Interview Analysis

The purpose of the semi-structured interview was to learn about students’ attitudes towards the use of schema theory in English listening skills. The intention consisted of eight questions divided into three categories:

Part A: Interest and Motivation.
Part B: Engagement.
Part C: The Effectiveness of Schema Theory in Teaching English Listening Skills to Students.

The responses from the semi-structured interviews were recorded with the approval of the sample group to ensure the data's reliability and validity. The recorded content was transcribed into text for the study's analysis.

Discussion and conclusion

As previously noted, the study generated two main conclusions.

The first finding revealed that vocational high school students’ English listening skill was higher after applying the schema theory.

The second finding was that vocational high school students would have positive attitude towards the application of schema theory in the English listening lessons.

The following section will summarize the findings and explain how they addressed the study's research questions.
**Listening Achievement**

All four students increased their post-test results when compared to their pre-test scores, according to the findings. Improvement scores varied from 5 to 7, with 5 representing the lowest and 7 representing the most. Furthermore, the pre-test and post-test mean scores were 7.50 and 13.50, respectively, with a 6 point difference, indicating that the pre-test and post-test scores differed significantly.

Since the significance value (p-values) was 0.000 (p<0.01), it was statistically significant. As a result, students' English-listening skills improved once the schema theory was implemented. Simply put, a statistically significant improvement in their achievement ratings confirmed it. All of the findings listed above provided a reliable answer to the first research question.

Furthermore, the study's findings were comparable to the existing literature which discovered that using schema theory considerably enhanced students' listening skills. They also discovered that using "schema theory," English listening instruction can fully mobilize students' subjective initiative and interest in listening materials, as well as conduct positive and effective learning thinking, as well as transfer listening teaching from "words and sentences" to "discourse." As a result, they came to the conclusion that schema theory improved students' listening skill.

**Semi-structured Interview**

Students' responses to semi-structured interviews indicated that they were enthusiastic about using schema theory in the English listening classes. Most of the participants found the listening session to be interesting and entertaining, and the case study interesting and instructive.

They also mentioned that the variety of activities in each 40-minute course kept them fully interested. Several participants also argued that integrating schema theory into the teachings made them more understandable. Others noted that listening to different speakers can introduce children to the various dialects of English spoken around the world. Some of the points of view shared by the respondents are as follows:

**Question 1:** Did you like learning English? How? The majority of the participants loved learning English. The following two aspects were among the reasons: first, they worked in huge international trade companies, therefore English was most likely used in their everyday and future lives. Second, learning English was a simple and enjoyable process, as opposed to being tedious.

**Question 2:** Did you find the learning process of this English course interesting? The majority of respondents found studying English to be interesting primarily for the following two reasons: first, most students were eager to participate in in-class activities and appreciate the feeling of competitiveness and competition. Second, by incorporating schema into the teaching process, the learning difficulty was reduced and the material was easier to comprehend. The inclusion of films and graphics to the classroom enhanced the learning environment.

**Question 3:** Did you like to participate in class activities? Why? It was found that most interviewees expressed their favor to participate in class activities, mainly for two reasons:

1. Classroom activities helped improve their English skills including listening, speaking, and reading; and
2. It enhanced their interest in learning.
Question 4: To what extent can you accept the listening method of establishing schema before listening? It was discovered that after they were explained what the schema theory was, they were quick to embrace it. Before listening to the task, all respondents hoped the teacher would assist them in building the schema, which would help them gain confidence before listening to the information. Furthermore, it revealed that the development of schemata reduced the difficulty of the listening task.

Question 5: How did you feel about using the schema theory to understand listening task? It was found that all the respondents' feelings included the following two aspects:

1) being conductive – this was supported by a student who said, “I also like this method of learning English systematically. While learning the relevant knowledge encountered in the listening materials, I also mastered some other skills apart from listening, which is very conducive to the accumulation of my daily English knowledge”.

2) being easy – this aspect was in line with the students’ responses as “Although I think listening is still very difficult, this method can make listening a little easier”.

Question 6: How did the schema theory make it easy to understand the listening task?

All of the students agreed that applying schema theory made it easier to understand the auditory content. Students will predict the theme and rapidly absorb the linked terms in the listening materials since they developed schema before listening. As a result, students used the schema to understand the listening content, and this process also helped students better understand and improve listening skills.

Question 7: Have you improved your listening skills after these courses? How?

Most students believed that their ability to listen to the English materials had only improved slightly because they had only improved their ability to establish schema prior to the learning process in class, and they still had to memorize English vocabulary and phrases one by one; in other words, putting the schema into practice took a long time. Furthermore, few students believed that their listening skills had significantly improved.

Question 8: Did you like to continue understanding English listening materials using the schema theory? Why?

The majority of the students said they would continue to use the schema theory to master their listening skills as it made it simple and easy to understand. Only one student refused to use the schema theory to continue understanding the topics because he believed his knowledge base was insufficient to create a schema. The load of memory was also increased as a result of learning the schema theory.

References


Huang, Z. (2014). Application of Schema Theory to English listening teaching in junior high school. Shanghai Normal University, Shanghai, China.


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