The Construction of Recitation Mode for College Engineering Students

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Abstract. Current research shows that some college science and engineering students made poor achievements in English study. Language recitation input is widely accepted by language educators and attracts more and more attention from English learners. Recitation mode should be advocated again in English teaching. This is an experimental study on the construction of recitation mode in English learning for engineering majors. Through the follow-up research among these students, it is found that language recitation input is an important step in the English learning for engineering majors. Whether the selection of recitation content is reasonable and the recitation strategy is scientific directly affect the recitation effect. Based on the analysis of the experimental data and the construction of the recitation mode, this research also puts forward some effective strategies to improve the recitation efficiency.

Keywords: Engineering students · English recitation · Data analysis · The construction of recitation mode

1 Introduction

In recent years, college English education has received unprecedented attention in China. With the rapid introduction of various teaching approaches, the traditional effective language teaching about recitation is put into controversy. At present, China is carrying out quality-oriented education, in which knowledge acquisition based solely on memorization is despised and resisted to a certain extent. Some are opposed to the teaching methods of cramming and rote memorization, but advocate the cultivation of critical thinking ability and innovative consciousness. In this regard, reciting is time-consuming and inefficient in most people's eyes, which intensifies their attitude of opposing reciting. Opponents believe that language input through recitation is rote memorization, which is a process of mechanical repetition on the basis of no understanding. Professor Hu Chundong, a famous English teaching expert, said: "Language proficiency is gradually established by imitation. The premise of imitation is to read and recite, otherwise imitation will become nonsense. Recitation is a traditional way of learning for Chinese students, and I still think it is very effective." Recitation input has proved to be the most effective and easiest strategy for foreign language learning. It can not only help students

master a great amount of basic cultural knowledge in English, but also help to cultivate language sense and lay a solid foundation for language learning, improve English comprehension ability, writing ability and oral expression ability, which can also play a positive role for the study of other subjects. Reciting, a very effective way to learn a language, has been neglected and ridiculed as "rote memorization", "contrary to quality education" and "bookworm". This is really a great mistake in English learning. Meanwhile, some facts show that recitation not only has proven effective in practice, but also has shown profound theoretical basis and is of significance for psycholinguistic research and language learning. Reciting does not only mean rote memorization, but also does not contradict with the cultivation of critical thinking ability and innovative consciousness. Reciting and memorizing are interdependent, and the essence of reciting English is to enhance the input of language. In foreign language learning, language mastery is not a simple mechanical memorization, but the generalization of various concrete concepts.

2   The Current Situation and Problems in Engineering Students' English Recitation

In the process of learning English, many students are unwilling to and lazy to recite English, engineering students in particular. With no good language acquisition environment, so there are not enough university students to use the traditional recitation method, which is widely accepted in some countries. It is well known, in their eyes, that speaking English well is a sign of excellent acquisition of learning English. In fact, if not reserving a lot of English knowledge in their mind, in the next advanced stage of English learning, the students will not know where to continue their study and gain insight into the essence of language. They think reciting is the mechanical rote memorization and very boring, so they have no interest in it. Reciting input is a chore, and college students are unwilling to take the boring job of recitation now. In some way, reciting input is a process of constant repetition. If we do not spend time to consolidate the effect of recitation after the process of continuous learning, so the language points recited before will soon be forgotten as the time goes by. At the same time, they are unwilling to make efforts to focus on study and are not eager to attempt to improve the language proficiency. They argue that although they memorized some articles with great efforts, they should have not scored good grades immediately, with the results contrary to their expectations. Their English scores are not much improved in the short term, and they forget all the articles memorized after a period of time. Currently, the priority is much given to the autonomous learning and the university advocates students to learn independently, so this leads to the fact that students do not want to learn under the teacher's compulsion. Without the teachers' appropriate supervision and inspection, the students tend to be lazy to recite the language [3] (Chen Xuan: 2004). For these reasons, the less you recite, the less you acquire about the language, and the more you are unwilling to recite, the more difficult it is to learn English. Although the task of English recitation is taken into account according to the teaching requirement in the textbooks, students virtually do not take seriously the methods of recitation in their minds, complaining that they will immediately forget what they recite, so it is hard for them to take the effective strategy for learning English. Different from other majors, engineering students are considered as a special group of students

who are characterized by the attribute with a weak foundation of learning, especially in English study. This paper is an experimental study on the construction of recitation mode in the English learning process for engineering students, so as to reveal the role of recitation in the English learning process of college engineering students, hoping to provide some insight into modern college English teaching practically and theoretically.

3   Theoretical Framework

Nowadays, new English teaching schools come into being and many teaching modes are popular in the continuously changing reform, but recitation, an effective method of language learning, since the ancient time, is often neglected in English teaching. Recitation is a learning approach based on psycholinguistics and second language acquisition. Ellis, professor of psychology at the University of Wales, pointed out in his psycholinguistic works that language learning is a process of gradual accumulation of paradigms [1] (Bialystok: 1978).German psychologist Ebbinghaus explained the law of memory like this: "the forgetting in memory is inevitable, and the law of forgetting is first going fast then slow. [9] (Zhang Weiyou: 2002) " We may be able to memorize an article by heart for a short time in memory, but without intensive and special procession, then we will forget what we have read and recited. The foundation of fluent language use is based on the storage of large number of language points in memory. Grammatical learning aims to master thousands of structures and abstract frequency-oriented language laws and then store them in our memory. Through the imitation and recitation of language points, students gradually understand and master the internal structure of language and then store the correct constructions in the long-term memory, so as to generate phrases that can be employed to express their thoughts and feelings. Ellis also argues that the frequency of language input is a decisive factor in language acquisition [8] (Yuan Xiaolin: 2017). Recitation is a multi-dimensional language input with the organs of eye, brain, mouth and ear. After a timely and effective review, consolidation of these short-term memories will be transformed into a long-term memory. Moreover, reciting can invigorate the "dead" language materials, setup language sense, and enhance the acquisition of language ability. Whether we will recite an entire text or memorize the individual expressions, we need to focus on the detailed analysis of material and to memorize them by efforts. This fully guarantees the learners' utility of certain linguistic forms in the input.

Krashen, the second language acquisition theorist holds (1987:21–25) that language acquisition is accomplished through language input, and its teaching should focus on the skills by which the users boost their language input [7]. He proposed five hypotheses of his famous second language acquisition theory, namely, acquisition and learning hypothesis, natural order hypothesis, monitoring hypothesis, input hypothesis and affective filter hypothesis. The input hypothesis is the core of Krashen's language acquisition theory. Reciting and reading can strengthen language input, deepen students' understanding of grammar knowledge, improve the influence of vocabulary, sentence patterns and word memory, strengthen language accumulation, and normalize the output of language [4] (Deng Liming 2001:4). This norm will be directly reflected in translation and writing. According to Krashen, language acquisition is achieved through "comprehension input".

At the same time, we should also pay attention to the "input principle". If the input content is extremely easy for learners, it will be difficult to arouse learners' interest in learning. Therefore, language input content is slightly higher than the learner's current language level, which can be appropriate to produce acquisition. This is Krashen's famous "I + 1" formula. I represents the learner's current level, and 1 represents the degree of language material slightly above the learner's current level. For the input of "I + 1", the learner can improve his ability to use language by understanding the language material by which he can be in contact with persons and therefore ensure sufficient language input. As we all know, there is a gap between understanding English and using English. Understanding and reading English in class does not mean that you can use English proficiently, which requires some practice. Only with practice can the real and effective communication be guaranteed. Practice makes perfect. Reciting should be one of the most important and effective ways to engage in the real communication settings and consolidate the skills of verbal contact. "In the absence of a language environment, it is impossible to acquire a foreign language skillfully. It has to be learned with hard work. "I have always been a proponent of reciting, not only for children but also for adults." [2] (Chen Lin: 1999:1) Through recitation, students acquire abstract language ability, and enhance the sense of using English, so language system gradually gets deep-rooted in their mind so as to master the usage of authentic English. Some phrases and structures in English have the fixed collocation, and so only if these language points are memorized to a certain extent, the structure paradigms will be internalized into the knowledge in the learners' minds.

4   Research Process

4.1   Core Issues to Be Discussed

This experiment attempts to require engineering students to answer the following five questions: (1) Is reciting useful for improving English? (2) Do you prefer to recite words and phrases, sentences or passages? (3) Are you required to recite and recitation checked regularly? (4) What material do you choose to recite? (5)What is your grade in the final English exam? (Table 1)

4.2   Survey Objects

All the respondents came from the first and second grades of engineering students in our school, and a total of 120 students participated in the experimental research. As can be

Table 1. THE DISTRIBUTION OF PARTICIPANTS

Civil Engineering Major		Communication Engineering Major		Electronic Information Engineering Major	
40		40		40	
Grade Two	Grade One	Grade Two	Grade One	Grade Two	Grade One
23	17	19	21	26	14

seen from the figures in the chart above, the distribution of students participating in this survey is reasonable, which meets the research needs and is relatively representative, which is helpful to understand the correlation between recitation and English learning of engineering majors.

4.3 Survey Tools and Methodology

The survey tool is a questionnaire composed of five small questions. The questionnaire survey was conducted by the author in class. A total of 120 questionnaires were collected, all of which were valid.

4.4 Results of the Experiment

The main purpose of our study is to understand the correlation between recitation input and English scores of engineering majors in the process of English learning. We only make a general summary and analysis of the obtained research data, without specific distinction between grades. Through the collation of collected data, we get the following results:

(1). *Is reciting useful for improving English?*

Among the students surveyed, the percentages of the opinion that reciting is useful for English learning are 97.5%, 100% and 95% respectively among those majors. Therefore, engineering students hold a positive attitude towards the function of recitation. The specific results are listed as shown in Table 2.

(2). *Do you prefer to recite words and phrases, sentences or passages?*

Among the students surveyed, the students of the three majors have distinct preferences for reciting content. Civil engineering students were more likely to recite words and phrases (65%) than other majors, followed by sentences (25%) and passages (10%), indicating that they prefer the input of simple lexical language points to sentences and

Table 2. WHETHER THE RECITATION IS USEFUL OR NOT

	Extremely useful	Useful	Uncertain	Useless	Total
Civil Engineering Major	20	19	1	0	40
Percentage	50%	47.5%	2.5%	0%	100%
Communication Engineering Major	22	18	0	0	40
Percentage	55%	45%	0%	0%	100%
Electronic Information Engineering Major	22	16	2	0	40
Percentage	55%	40%	5%	0%	100%

Table 3. PREFERENCE TO RECITE WORDS AND PHREASES, SENTENCES, OR PASSAGES

	Words and phrases	Sentences	Passages	Total
Civil Engineering Major	26	10	4	40
percentage	65%	25%	10%	100%
Communication Engineering Major	13	11	16	40
percentage	32.5%	27.5%	40%	100%
Electronic Information Engineering Major	19	14	7	40
percentage	47.5%	35%	17.5%	100%

passages. Students majoring in communication engineering like to recite passages (40%), followed by words and phrases (32.5%) and sentences (27.5%). The proportion of words and sentences is almost the same, but they still prefer to the recitation of passages. Students majoring in electronic information engineering were similar to those majoring in civil engineering in that they were willing to recite words and phrases (47.5%), sentences (35%) and passages (17.5%). It can be seen that, in general, students majoring in communication engineering like to recite sentences and passages more than words and phrases, while students majoring in other two majors like to recite vocabularies. The specific results are as shown in Table 3.

(3).   *Whether recitation is required and recitation is checked regularly.*

According to the data in the Table 4, teachers in charge of different majors have different requirements for students to recite. Communication engineering majors had the highest proportion of being required to recite and check regularly, at 65 percent, followed by civil engineering majors (25%) and electronic and information engineering majors (35%). Among the data about teachers' requirement to recite but not regular check, 67.5% (civil engineering majors), 52.5% (electronic and information engineering majors) and 35% (communication engineering majors) respectively in the three majors are required to recite. In general, teachers, in charge of the three majors, require students to learn English by recitation, and teachers of communication engineering majors check students' recitation more regularly. Specific data analysis is as follows.

(4).   *What material do you choose to recite?*

It can be seen from the following data that students of different majors choose to recite different materials, but nearly half of them prefer to recite the textual materials (TM) as the main source and the extracurricular materials (EM) as the supplement. Students of

Table 4. WHETHER RECITATION IS REQUIRED AND RECITATION IS CHECKED REGULARLY

	Required to recite but without regular check	Required to recite with regular check	No requirement of recitation as well as no regular check	Total
Civil Engineering Major	27	10	3	40
percentage	67.5%	25%	7.5%	100%
Communication Engineering Major	14	26	0	40
percentage	35%	65%	0%	100%
Electronic Information Engineering Major	21	14	5	40
percentage	52.5%	35%	12.5%	100%

Table 5. THE SOURCE OF RECITATION MATERIAL

	TM mainly	EM supplement	TM mainly, EM supplement	EM mainly, TM supplement	Total
Civil Engineering Major	16	3	15	6	40
percentage	40%	7.5%	37.5%	15%	100%
Communication Engineering Major	14	4	19	4	40
percentage	35%	10%	47.5%	7.5%	100%
Electronic Information Engineering Major	17	3	19	1	40
percentage	42.5%	7.5%	47.5%	2.5%	100%

electronic information engineering and communication engineering take the same proportion, 47.5%. Students of the other three majors mainly recite extracurricular materials, less than 10%. According to the specific data, students are not only satisfied with learning and reciting the contents of the textbooks, but also eager to learn extra-curricular knowledge, so as to broaden their knowledge and improve their English learning level (Table 5).

Table 6. THE GRADE IN THE FINAL ENGLISH EXAM

	≤59	60–69	70–79	≥80	Total
Civil Engineering Major	1	18	16	5	40
percentage	2.5%	45%	40%	12.5%	100%
Communication Engineering Major	2	6	14	18	40
percentage	5%	15%	35%	45%	100%
Electronic Information Engineering Major	0	14	22	4	40
percentage	0%	35%	55%	10%	100%

(5). *What is your grade in the final English exam?*

The proportion of students with good grades (≥80) was 45% (communication engineering), 12.5% (civil engineering) and 10% (electronic and information engineering). Thus, the number of excellent students majoring in communication engineering is much higher than the other two majors, accounting for 45%. The specific results are as shown in Table 6.

5   The Construction of Recitation Mode

After conducting the English recitation experiment for a long time, we has indeed received good results in it, which can be reflected in students' good performances in English learning. First, the students' listening and speaking ability has been greatly improved, which is reflected in the fact that a vast majority of students can understand what the teacher speak in English, fluently answer the teacher's questions accurately, and present a lot of questions to the teacher in English. Quite a few students can retell or sketch a story in English without any instruction, and they can also make an oral presentation in the class.

5.1   Selection of Reciting Materials

According to the "I + 1" formula proposed by Krashen, the selection of recitation materials should be suitable for students, which should take the students' current understanding level into consideration. For college students, the efforts of daily reciting should be slightly lower than those of the requirement in CET-4 and CET-6 reading materials. In addition, the selected materials should be appropriate in terms of the contents which are representative of authentic and original English texts, and the theme in the recitation assignment should be interesting, practical and contemporary. Through reciting these materials, students can not only understand the historical, cultural and social knowledge which helps broaden their horizon in language study, but also master the basic knowledge in language, consolidate grammatical learning, and draw inferences from language use [10] (Liu Zhipeng: 2018). Good selection of listening materials can help students to better imitate the pronunciation and intonation, deepen the impression of reciting, and

improve their speaking and listening ability [6] (Li Yi: 2020). The selection of language materials should conform to students' actual level. It should not be too difficult to avoid the fading away of their enthusiasm to learn. If the selected materials are too easy and students feel unwilling to make efforts, so there will be no sense of achievement.

When it comes to learning English, many students' first reaction is to "memorize words". They think that if they store a huge sum of words in their minds, they will learn English well. Therefore, many teachers' assignment of recitation is limited to merely reciting words and phrases, so students, for most of the time, are engaged in merely reciting simple words. First of all, facts show that word memorization is isolated from the text, and the content can only be remembered in a short time. If not used in time, the recitation materials will be forgotten immediately; at the same time, the memorization of words must be effective when combined with the certain context, because only in the context can the meaning of words, as well as words' usage, can be well elaborated and then be memorized. In general, it is better to recite meaningful material than meaningless material; memorizing systematic and logical material is more effective than recalling non-systematic and less logical material. Therefore, the recitation task assigned by teachers to students should be based on the principle of the combining of the language points with the entire discourse. Only by memorizing words in the discourse can students realize the vital usage of words and thus enhance the improvement of students' learning ability. In general, English text is full of many standard language sentences and classic articles, so you can choose some original words and sentences, especially the graceful and useful articles or paragraphs to recite. When encountering some story or dialogue in the texts, you can perform the stage opera according to the plot in the story.

5.2 Effective Strategies to Improve Students' English Recitation Efficiency

In the process of reciting, in order to arouse students' enthusiasm, we should often adopt group contest, teacher-student cooperation test, mutual examination, word-guessing test, paragraph writing, article retelling, story telling competition, short-play performance of text, imitation writing, listening and reading combination and so on, which can be effective ways of boosting the students' practice. The specific approach is to provide matching-images according to the content of the text, so that students can recall the content of the text according to the tests. This method is not only conducive to the understanding of the text, but also conducive to cultivate the students' abilities of imagination and creativity.

(1).   *Guide students to grasp the principles of reciting.*

The research shows that the lack of scientific and reasonable strategies is the main cause of low enthusiasm and low efficiency for recitation. On the contrary, if you are in control of good methods and skills, you will enjoy it and achieve good recitation effects.

We should pay attention to the forgetting curve of Ebbinghaus, in which he explained the general law of forgetting, that is: first fast then slow, first more then less. According to the characteristics of forgetting, the material memorized are frequently forgotten if not be recalled and reviewed regularly. Before forgotten, they must be used through numerous repetition with the aim of students' skillful usage of them. Therefore, it is necessary to consolidate these recitation effects immediately after learning and then arrange the time

of rehabilitation reasonably in order to achieve better results. We should help students to understand the text sentence by sentence, advocate their repeated reading, and enhance the awareness of linking the content to the corresponding context.

The premise of recitation is high degree of familiarity with the content. The standard of effective recitation should be obvious understanding of the text and devotion to the connotation with repeated reading. A large number of studies have shown that reciting, on the basis of understanding, is much better than mechanical reciting without understanding in respective of overall comprehensiveness, accuracy and consolidation [5] (Li Ting: 2018). When reading a book, we should concentrate our mind on it with multiple senses involved. We should follow the principle that we implement the recitation strategy step by step. The initial recitation task should be as short and delicate as possible, and the volume should not be too much. In order to make students fully understand the reciting materials and achieve better reciting effects, teachers should explain the language points in the materials, so that students will have a deeper understanding of the original text. In doing so, they will recite and use the reciting materials flexibly.

(2). *Highlight the role of teachers' inspection.*

In order to urge students to complete the task of reciting on time, strengthen their memorizing ability, stimulate their learning interest, and form the habit of reciting, teachers should timely check their reciting, and correct their mistakes in the process of reciting, especially the pronunciation and strategy instruction. Approaches of reciting check can be diversified, such as dictation and cooperative reciting. Inspection is an important guarantee to ensure the recitation effect. In view of the current situation in which college students have the high cooperative and independent learning ability, mutual inspection among the students can effectively stimulate the enthusiasm of reciting and reduce the burden of teachers. Teachers should encourage students to grasp the recitation skills. For the formation of good reading habits, it is good to require students to repeat, and it is also beneficial for teachers to supervise and urge the students to finish the task [11] (Liu Zhipeng: 2021). Only when students master correct recitation strategies and develop good recitation habits, can they be obsessed with reading, enjoy recitation and improve the sense of achievement in language study. In short, in the teaching process, teachers should guide students to strengthen the "understanding input" of learning materials, and persevere in holding on to the habit, and gradually cultivate students' habit of reciting English language, so as to improve students' ability to use English.

6   Conclusion

In the absence of real English learning environment, through the accumulation of language points, the approach of recitation input will be gradually adapted to the current English teaching situation. If then, the engineering students will gradually understand and master complex sentence patterns, get rid of the interference of mother tongue, and finally better communicate with the target language.

6.1 Language Recitation Input Helps to Strengthen the Engineering Students' English Learning Awareness

The acquisition of language knowledge is the foundation of English learning and also the key to improve students' English application ability. English knowledge involves many aspects, including historical knowledge, knowledge of other subjects, as well as the culture and value of English-speaking countries. English language is loaded with culture, values and emotions, and aspects of literal arts. It can not only improve students' grasp of English knowledge, but also affect the formation of students' emotion and values, so that we can obtain a lot from it and also promote students' all-round development. The new teaching environment requires teachers to change their teaching concepts, strengthen the implanting of language knowledge, and conduct in-depth analysis from the aspects of language, cultural background, ethics and morality. In doing so, students can get a lot and establish correct outlook on values in the process of English learning. In the teaching process, teachers should encourage and urge students to recite a great sum of useful words, phrases, wonderful sentences and short passages. In order to recite them effectively, students should imitate some useful idiomatic expressions.

6.2 Reciting is Helpful to Improve the Engineering Students' Writing Ability

The input method of recitation can greatly promote the improvement of Chinese EFL learners' writing ability. This effect is mainly due to the improvement of learners' attention to sentence formation in the process. And reciting sentences enhances their ability to compose articles, brings them a sense of accomplishment and plays a positive role in developing their self-confidence, which will be in turn conducive to their learning practice. The benefits cannot be underestimated.

6.3 Language Reciting Input Helps Improve the Engineering Students' Oral English Ability

Recitation input helps students enhance their sense of language use, stimulate their confidence in language learning, and especially improve their oral fluency. It cannot be ignored that reciting strategy is particularly effective in improving college students' oral English. Recitation involves both the input and output of language. Recitation is undoubtedly an ideal learning strategy to practice oral English in specific Chinese region that is nearly free from the foreign environment. It is especially beneficial for the students to consolidate their oral ability by reciting such materials as paragraphs and short passages, which emphasize the significance of context in the language study. Therefore, when it comes to the language output, we must take the lack of language learning environment into the consideration for Chinese English learners to a certain degree. Students' successful verbal communication is due to successfully memorizing English words, phrases and sentences. Communicating in a very effective way will make it easy to acquire English fluently. So with the establishment of the recitation mode, the students will be more active and interested in English learning, with the ultimate goal of acquiring new language knowledge, and further strengthening their ability to use language.

To sum up, through the construction of recitation mode the college engineering students made considerable achievements in the language study. Therefore, We are required to explore how to use modern educational technology and information technology to promote college English teaching. To make the research more scientific and be of higher reference value, some suggestions for future study should be presented as follows:

Firstly, expand the range of research participants. In the future study, in order to make the research results more scientific, comprehensive and representative, the research participants should be selected from other different scientific and engineering majors, such as network engineering technology, electrical automation technology and optical information science and technology.

Secondly, the elaboration and authority of the questionnaire should be further tested. The design of questionnaire should be scientific and authoritative. After the investigation or selection of the questionnaire, the validity and reliability should be checked to ensure that the conclusions or results are more convincing.

Finally, increase the number of participants. In the future study, some teachers can also be selected as the interviewees. From the perspective of teachers, the current situation of college engineering students' English recitation can be better understood and surveyed.

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