

# Applying Gamified VR in Teaching English Speaking as a Foreign Language in Junior High School

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**Abstract.** English becomes the universal language, which is a requirement for students to learn. According to several studies and research, the window of critical period for learner to learn is closing. Speaking as one of the parts of English skills is lack of practicing due to dozens of factors. To help students to learn speaking, effective learning theories are developed and discussed by different scholars over period of time. Many early theories are challenged by the later perspectives. To meet students' needs, this study introduces VR technology and games to be used in teaching. As for VR, it is capable to produce an immersive environment for students to study. Besides, games motivate students to participate and actively engage in the courses. Based on the above views, the application of VR games are suggested in oral English teaching.

**Keywords:** Education, VR, English speaking, gamification.

## 1. Introduction

With the increase of international communication, more and more learners begin to learn English, as it become the universal language. English learners come from all ages and all countries. Scientists in the US published their findings in Nature in 1996. They found that Broca's area began to develop in early childhood (1 to 3 years old) and became mature at about 12 years old. With the increase in age, the sensitivity of this area decreased year by year. Therefore, the critical period for language learning is considered to be between the ages of 4 and 12. However, Marilyn Vihman, professor of linguistics at the University of York in the UK, argues that the idea that a foreign language must be learned in early childhood to reach native-level is questionable [1]. Contrary to classic notions of the role of Broca's area in speech, while motor cortex is activated during spoken responses, Broca's area is surprisingly silent [2]. Therefore, when students, 12-15 years old, learn oral English, they mainly rely on the memory area of the brain to learn. To form long-term memory of words and phrases in oral English. Obviously, we need to first strengthen short-term memory so that it can be transferred to long-term memory.

Speaking is one of the basic language skills that have to be mastered by English foreign learners due to its significant and its use for communication [3]. Whereas, most courses were focusing on listening, reading and writing, and there were few courses focusing on oral English in Junior High School in China. The main culprit is oral English is not included in the test of Chinese education system. In addition, in China, Oral English teaching is mainly through hiring foreign teachers to participate in teaching, but this only exists in a part of international schools or private schools which have sufficient funds. In addition, there are also some oral English teaching application to provide a platform for students to learn oral English.

With the Quality-oriented education in China, oral English teaching has gradually become an important part of Junior High School English education. Scaffolding instruction is one of the more mature methods of teaching that developed from the constructivism teaching mode [4]. Now, most of the junior high school based on these two theories to proceed oral English teaching in China.

Furthermore, based on Yu, et al's research, oral English teaching for junior high schools' students still have some problem. For example, lack of voice training room, Teachers' oral proficiency are not of high level and students may have some psychological barriers in learning oral English [5].

Oral English teaching is intended to be a holistic adaptive procession learning that merges experience, perception, cognition, and behavior [6]. Therefore, it is suitable for the theory advanced by Kolb which named Experiential Learning Theory (ELT). Based on this theory, learners could perceive new knowledge by experiencing the concrete and Perceivable events, that is, they could rely on their own perception and immerse themselves in virtual reality. At present, a lot of scholars around the world have studied the application of games in oral English teaching. For example, digital game-based oral English learning. Compared with traditional teaching model, digital-game based learning can make learning more interactive, authentic, exciting, stimulating, and well-structured [7]. Wang and Han have studied the existing game-based oral English teaching applications on the Appstore. They found that digital game-based mobile language learning applications have a positive impact on the development of complexity, accuracy and fluency in oral English learning for Chinese students [7].

With the development of technology, integrating VR into teaching becomes feasible, and it has become a new trend of game-based teaching. Rely on the above theory and practice, use schema-theory, mentioned in cognitivism, to design specific scenes in a VR Learning Design is feasible. Based on Gao and Fan's research, having the schemata in mind by memorizing oral vocabulary and phrases or idioms connections between each other, they can pick up relevant knowledge quickly and express their opinions logically [8]. On account of the current teaching situation and the potential advantages of VR teaching, we intend to study how to integrate VR games into oral English teaching.

## **2. English speaking skills learning**

### **2.1. Effective learning**

In Chinese English curriculum standards for compulsory education (2011), the teaching goal includes five aspects: language skills, developing emotion and attitude, language points learning, raising cultural awareness and learning strategies. In Chinese compulsory education stage, junior high students' language competence has been classified into nine levels. And on the fifth levels, students are able to do the following things: be able to express personal opinions or ideas and discuss with others; be able to communicate with others and complete the task together; be able to give out an English play; be able to correct their own mistakes; be able to continue a conversation; be able to insult and ask for help; be able to speak with the appropriate tone and pronunciation [9].

Facing the stress of taking the high school entrance exams, usually teachers would adopt the traditional teaching method which mainly focus on: listening to recording, reading materials and doing online test paper, which are simply activities designed for training tests taking skills.

Concerning effective English-speaking skills teaching, various scholars put forward their opinion during different period of time.

### **2.2. Effective teaching**

The word "Effectively learning" showed up in the first half of the 20th century in the Western country and it was the product of some scholars' heated discussion on whether teaching is art or science. In second language teaching, America made standards for Foreign Language Learning: Preparing in the 21st Century and it had a great influence on English teaching in China.

In 1950s, Chinese teachers mainly focuses on the result of the teaching and seldom thought about the effectiveness of teaching during the class. However, teachers gradually realized the importance of teaching effectiveness in 1970s and till 1990s, the research on effective teaching became very frequent and active.

There are four types of definitions of effective teaching: (1) It is the idea brought from the economy study. Teachers put in fewer time and energy in teaching and get a better teaching result. Teaching

goals can also be achieved. (2) It means that teachers would focus a lot more on students' learning process. After a period of time, students can gain a lot progress in studying. (3) It can stimulate students' consistent development [10].

There are three levels of teaching: The first level, effective teaching is a form. The second level, teaching is the way of thinking. The third level, teaching is an ideal. Effective teaching needs to turn the first level into the third level.

Other scholars have also put forward different learning theories which have significant influence on English teaching. In 1970s, Krashen said that comprehensible input is the only way for acquiring another language. This is the very famous "Input Hypothesis". "i+1" theory has been put forward by him, which means context given to the students can be a little more difficult than language itself. Extra-linguistic information and context are also need for students to improve their language level. However, materials given to students should not be too difficult otherwise it would become obstacles for students and it will lower students' motivation to learn English. Apply this theory into teaching, teachers would immerse students in a total English-speaking environment so that students can understand and learn some more new words to enlarge their vocabulary. Teachers also need to encourage students to try to speak English and students can finish some simple conversations. As students accumulating enough vocabulary and their language skill leveling up, teachers can design more games, discussion, debate or role play in their classes.

But later, Merrill Swain put forward "Output Hypothesis". He said only language input is not enough for learning English. One can only successfully acquire a language by outputting comprehensible language. Because coming across difficulties in the process of outputting will stimulate students to re-think about what can be improved.

Besides the influential "Input theory" and "Output theory", in 1980s, Howard Gardner mentioned eight types of intelligence and with the guidance of the theory of multiple intelligence, teachers can use various approaches to stimulate students' development. These eight types of intelligence are as follows: linguistic intelligence, logical-mathematical intelligence, spatial intelligence, bodily-kinesthetic intelligence, musical intelligence, interpersonal intelligence, naturalist intelligence. The teaching should be student-centered and respect students' difference. These eight types of intelligence tell teachers what they can do to help students.

In 1980s, Boghossian mentioned a new and create theory—constructivism theory, which still has influence on today. Other scholars J. Piaget, O. Kenberg, R. J. Sternber, D. Katz and Vogotsky also agree that learning can truly and effectively happen when they join in teamwork and actively explore. When students are actively taking some tasks with their classmates, they learn how to cooperate and communicate with their classmates and how to solve the real problem. In this way, students actively integrate what they have already known to new knowledge. Students will build a new knowledge of their own.

After viewing different opinions put forward by scholars, when analysing a class, these four aspects can be taken into account: (1) Clear teaching goal. Students can take in what teachers taught in class and produce or create their own things. (2) Teaching content should be related to the real life. Students should learn how to use language instead of just learning the language. (3) Teachers could adopt more flexible teaching method in teaching to improve the teaching efficiency. (4) The comment on the class should lead to stimulating students' development [11].

### 2.3. Needs analysis

In daily observation of students in Junior High School in Guangzhou, most of students are not satisfied with their own English speaking. In English classes, students can only speak a few sentences and guess the meaning of the conversation. If you ask students to fluently carry out a conversation with native speakers or express themselves in English, they can hardly do it. Since they lack the natural English emersed environment and requirements on school's placement test is relatively low, students will not spend so much time on practicing speaking English. What's more, they want to practice English speaking in a more entertaining way. Students may find these activities more

interesting to learn English: watching English movie, listening to English songs, imitating movie lines. However, students find them difficult to learn English: joining English competition, listening to lectures given by professors. In order to meet students' need, the selection of medium to convey more interesting content becomes very important.

### **3. VR affordance**

#### **3.1. The Introduction of VR**

VR is short for virtual reality and it was firstly put forward by Jaron Lanier, the founder of VPL Research company in 1980s. VR was created for users to put on professional VR devices to view virtual world. VR has these features: immersion, interaction and imagination. Immersion means that the whole process of putting on VR device makes one feel like in the real scene. Interaction means that user will use some body language to naturally interact with the virtual world. Imagination means that user will imagine a world by collecting and accessing information provided by the virtual world.

#### **3.2. Learning materials that are suitable for VR**

Because of the three features that VR has: Immersion, interaction and imagination, more types of teaching materials can be used and the teaching result can be different [12].

(1) VR can turn words or pictures into visualized and dimensional knowledge. In this way students don't have to spend too much time in understanding words and they can have a deeper understanding of the points shown in the picture. (2) For some educational experiments, if time, places, tools are limited, VR can be applied in classes. Teacher can also have an ideal teaching effect in classes. (3) For some future designs, students can even have a better insight, analysis of the designed product [13].

In English speaking classes, VR makes students' active learning possible. VR is possible for students to complete the task given by the teacher. For example, students can work as a team to make travel guide in a virtual world. When working together with their classmates on completing the task, they will have a better understanding of words, emotion, cultural context, speaking skills, teamwork spirit and so on. And through completing tasks with the help of VR, core values of 21st students could be achieved.

#### **3.3. Educational Games**

Games used in education are called "Serious games" and it first showed up in 1980s. Serious games can stimulate students' development on their emotion, attitude and value towards the world. Teachers can insert games in teaching and let it integrate with the teaching content. Through this way, students will have better engagement in classes, which will improve the teaching effect, meanwhile, if students like have class like that they will have better academic performance.

Hoffman in 1996 pointed out that when human indulge in human-computer interaction, human tend to forget themselves and engage in a series of unstoppable, closely related reaction. This situation is an encouragement for humans. This situation will give human a sense of wonder which will encourage them to explore more and deeper. The best experience comes when personal skills match the challenge itself.

When choosing or designing games for education, Csikszentmihalyi's Flow theory can also be taken into consideration. If human want to have the immersion experience, they need to have the following eight elements: (1) Tasks that are possible to complete (2) designed situation (3) clear goals (4) feedback (5) relaxing engagement (6) feel free to control their behavior (7) forgetting themselves (8) forgetting time. When designing games for education, if designer can balance human's skills and challenges they faced, the educational effect can be better. So, when designing games, these elements can be included: (1) setting goals (2) setting rules (3) competition and corporation (4) setting time (5) setting reward (6) setting levels (7) setting situations (8) setting feedback. Integrating games in

teaching, the process of teaching can be simplified as follows: setting goals-tasks-team work-feedback.

#### 4. Conclusion

In conclusion, more and more learners are required to learn English with the increase of international communication. Due to several studies and research, Broca's area (the part of the brain that use to produce language) began to develop in the early childhood, and became less sensitive with the increasing age. In other words, the critical period for students to learn English is around 4 to 12. Though learning English is considered to be a very important task, there are many problems, such as inadequate oral courses, lack of voice training room, and sophisticated teachers, in Quality-oriented education in China. The problems are caused by many factors, including insufficient funds, and difficulties to find foreign teachers.

Nowadays, in China, since all students are prepared for the high school entrance exams, they mainly practice the skills that are tested in the exam. Under this situation, effective English-speaking skills teaching has become a concern. In fact, how to learn English skills effectively is being discussed over centuries. The word appeared in the first half of the 20th century, used to discuss whether teaching is art or science. This phrase is classified as four types of definition with three levels of teaching. Additionally, in 1970s, Krashen proposed the "Input Hypothesis", which is reputed by the "Output Hypothesis" established by Merrill Swain. Later, in 1980s, eight types of intelligence, and the constructivism theory is created and mentioned.

After observation, students in high school are found to have problems to communicate in English fluently, which is caused by having lack of immersive environment and requirement in school. Students are willing to learn English in a more entertaining way.

To learn oral English in a holistic way, it is considerable for learners to experience immersive practicing in virtual reality with games. Students are more likely to develop complexity, accuracy and fluency in oral English. Having immersive, interactive, and imaginative feature, VR is suitable for students to learn English, and has better teaching effect in classes. Students may have deeper understating after seeing the knowledge directly, instead of in an abstract form. In speaking classes, with the help of VR technology, students are able to complete task through active learning. "Serious games", a stimulus that help students to engage and involve in class, are also a good teaching tool. During this process, interacting with the computers, humans have a sense of curiosity to let them explore more and deeper. Choosing or designing suitable games for education are important. In Csikszentmihalyi's Flow theory, there are eight elements should be considered so that human can have immersion experience.

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