

Method to Improve English Writing Skills: Virtual Reality

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Abstract. With the increase in the number of English speakers, English education has taken an important place in every country and all grade levels. English writing is a critical part of English teaching. By summarizing the traditional writing teaching method, we believe that the drawback is that it is difficult to balance the relationship between acquiring basic knowledge and improving motivation, so new teaching methods need to be explored. With the development of technology, more technological tools will be available in the future teaching, and virtual reality technology is one of them. This paper argues that the factors causing English writing problems include both vocabulary and learning motivation, and also uses the literature review method to conclude that virtual reality technology can be used in teaching English writing through constructivism, Experiential Learning Theory, Situated Cognition to solve basic vocabulary problems and improve learners' motivation. Through virtual reality education, a new student-centered approach to teaching writing that facilitates students' creative thinking and observation skills can be established.

Keywords: Teaching Method, English Writing, Virtual Reality.

1. Introduction

In the past four centuries, the number of English speakers has risen from 5 million to more than 1.4 billion, English become the most widely used language in the world [1]. Due to the widespread of English, English plays an important role in international communication. Therefore, the study of English occupies an important place in the school curriculum all over the world. In China, students at all levels are required to take English classes. China Standards of English is an assessment standard for English learners in China, with detailed grading and descriptions of the four components of listening, speaking, reading and writing [2]. Writing is the most difficult part of English learning for students, and the least effective part for teachers, the main reason for this is a lack of vocabulary and creative thinking. Therefore, teachers and scholars try to use a variety of teaching approaches to encourage students' creative thinking [3]. There are three main approaches to teaching writing currently in use: product approach, process approach, task-based approach.

(1) Product approach. In teaching practice, the teacher usually gives a model essay, explains the vocabulary, grammar, and structure of this model essay, and then the students imitate it and submit their own products to the teacher for correction. Product approach focuses on the product of the writing, and in the process of arriving at the product, the teacher motivates, the students respond, imitate and repeat [4]. In 1990, Brookes and Grundy identified the term "product" as referring to the "fruits of labor", the work produced during the writing process [5]. Richards defined the product approach: If the goal of writing teaching is to equip students with the ability to write correctly, the approach is referred to as the product approach [6]. In order to equip students with such an ability, Nunan argued that teachers should focus on the fluency of statements and grammatical correctness in writing products [7]. The advantage of this approach is that it is suitable for large classes and exam-oriented education; however, the disadvantage is also obvious, as this teaching approach is teacher-centered and students are merely passive imitators, they rarely pay attention to the ideological content and cannot raise their interest in learning writing.

(2) Process approach. In contrast to the product approach, the process approach focuses on the emotional experience in the process of teaching English writing and developing students' communicative and expressive skills. The teaching process focuses on students' conceptualization and writing. Students dominate the writing learning process [8]. Wallace Douglas first proposed the process approach in the 1970s, arguing that the purpose of writing is for students to learn the process

of writing. Afterwards, Raimes demonstrated that it is possible to use process approach in teaching writing through practice, and that the focus of the classroom should be on the expression of language and the innovation of thinking rather than the product of writing [9]. Flower and Hayes proposed the theory of process approach. "The steps of conceptualization, translation, and checking are necessary in the writing process" [10]. Gardner and Johnson summarized the eight steps of writing in the process approach: pre-writing, rough draft, rereading, sharing, revising, editing, final draft, and publishing [11]. The advantages of this approach are that it is student-centered, students can develop their own writing strategies, increases motivation; however, its disadvantage is that too much focus on the process can lead to students neglecting the basics of English, and the teacher is unable to focus on each student, which is detrimental to English learning.

(3) Task-based approach. Vygotsky stated that "cultural information is acquired first as a result of people interacting with each other and then becoming their own knowledge" [12]. In 1989, Nunan proposed the six design models of "goal, input, activity, teacher role, student role, and situation" for the task-based approach [13]. Branden used the theory of task teaching in his teaching practice. Lanzhen Cai proposed the idea of using task-based approach to teach English writing. She divided it into three parts: first, the teacher assigns writing tasks, such as notes and reflections, and provides students with model essays to help them master the basic writing structure, then students start writing, and finally the teacher analyzes and comments on their essays and asks for peer feedback [14]. The advantage of this method is that it can increase students' motivation to write and improve their language skills and basic knowledge of English. The disadvantage is that it is hard to practice.

To sum up, the main writing approaches currently used are difficult to balance the acquisition of basic knowledge of English and the improvement of motivation to write. Moreover, with the development of technology, more technologies will be available in the future teaching and learning. Currently, technology in English learning is the use of word memorization apps on mobile media and online classes.

Virtual reality technology is a new technology that emerged at the end of the 20th century, it is a simulation of a three-dimensional virtual world and senses that allows users to feel as if they are there, and to observe things in virtual space without limitations. The concept of virtual reality was first introduced by Jaron in 1989, and then began to develop rapidly [15]. Virtual reality technology has characteristics such as immersive and spatial, which can improve the user's observation, creativity and motivation to use, therefore it is considered suitable for use in teaching and learning [16,17]. Virtual reality technology is now used in teaching English speaking, listening and vocabulary. The immersive of virtual reality technology allows students to feel a sense of interaction, thus deepening their impressions and achieving educational purposes. Currently, virtual reality technology is rarely used in teaching writing. Therefore, this paper will discuss the possibility of using virtual reality technology to improve English writing.

The main questions introduced in this paper: (1) Whether virtual reality technology can improve students' English writing skills; (2) In what ways it can improve the shortcomings of traditional English writing pedagogy.

2. Problems in English Writing

2.1. Vocabulary

According to Richards and Renandya, vocabulary is the foundation and core of language proficiency, and neither reading, writing nor speaking can be learned without vocabulary [18]. Especially in writing, it is difficult for writers to express their ideas effectively if they do not have sufficient vocabulary accumulation. Wilkins said that without grammar very little information can be conveyed, but without vocabulary, no information can be conveyed at all [19]. Thus the importance of vocabulary in conveying information can be learned.

There are some difficulties in vocabulary learning. Thornbury believes that the factors that make word learning difficult include word spelling and meaning, etc. [20]. First, word spelling problems

refer to putting words in the correct alphabetical order. The reason that affects the accuracy of word spelling include pronunciation. According to research, words with difficult pronunciation are usually more difficult to learn, correct pronunciation can help learners spell words more accurately. However, there are some words whose spelling does not match their pronunciation and there are unpronounced letters that require special memorization, such as “muscle”, “island”. Second, word meaning. There are two main problems in distinguishing the meaning of words: words with similar forms and words with multiple meanings. Words with similar forms, such as "virtual" and "virtue", can be easily confused when memorizing, causing errors in phrase collocation or sentence meaning in writing. Words with multiple meanings, such as "project", when used as a noun, it is synonymous with "event"; when used as a verb, it refers to the action of projecting an image or video onto a curtain. Failure to remember such words usually leads to problems in reading and is not conducive to examining questions or building up a corpus in writing.

2.2. Learning Motivation

Motivation refers to an internal initiation mechanism that motivates individuals to carry out learning activities, maintains the learning activities that have been induced, and causes individuals' learning activities to reach a certain goal [21]. In the 1950s, Gardner proposed that purpose, effort to learn, desire to achieve the purpose of learning, and attitude toward learning constitute motivation. "It is only when the desire to achieve the purpose combined with the right attitude and effortful action are combined that this is considered true motivation [22]."

Motivation is an important factor that influences learners' learning, and when mentioned, motivation generally refers to interest in learning and motivation to learn. In learning, peer cooperation, grade ratings, etc. may have an impact on motivation. At present, the purpose for learning to write is mostly to deal with exams or complete assignments, and the motivation for learning is not strong; the form of teaching writing is mostly to imitate model essays and then hand them over to the teacher for correction, and behaviors that contribute to interest in learning, such as peer evaluation is rarely found. Taken together, it can be found that learners lack motivation to write and are not interested in writing, and the writing scores are not as good as they should be.

3. Virtual Reality in Education

3.1 Constructivism

Constructivism refers to what has gradually become an extension of cognitivist through its integration with behaviorism in learning theory, quality education, and educational psychology. Constructivism theory was first proposed by Piaget, who argued that learners construct knowledge about the external world as they interact with their surroundings, thus enabling the development of their own cognitive structures. Vygotsky believes that culture and society play an important role in the process of cognitive development. The learner forms his or her own cognitive schema in the cultural environment and then uses the formed cognitive schema to achieve the function of learning [23].

Constructivism is an important theoretical basis for the use of virtual reality technology in teaching and learning [24]. The virtual environment simulated by virtual reality technology allows learners to interact with the virtual environment, allowing them to take a more active approach to learning. The immersive of virtual reality allows students to be fully immersed in the virtual environment, thereby their focus and engagement can be enhanced.

Applying constructivism to virtual reality technology not only improves students' concentration, but also has a positive impact on learning process and helps learners develop observation and exploration skills. The immersive and spatial characteristics allow learners to think independently by observing the virtual environment. The social characteristic of virtual reality can also help learners strengthen cooperation skills [25].

3.2 Experiential Learning Theory

Kolb proposed the "Experiential Learning Cycle Model" in the 1980s. Experiential learning is a learner-centered learning approach that emphasizes the learner's situational simulation or real-life experience, through which the learner can gain knowledge and develop competencies [26]. In recent times, a widely recognized theory is Dewey's "Experiential Learning". Dewey believes that education must provide certain materials for students to learn, and that true knowledge must be acquired through practical activities such as application, experimentation, and transformation [27]. Virtual reality is a kind of experiential learning in teaching and learning, which can build a virtual environment in which users can gain knowledge, experience and ability.

3.3 Situated Cognition

Brown, Collins, and Duguid argue against teaching knowledge as mere concepts or principles, advocate teaching in a way that links the knowledge itself to the specific context in which it is used, which is the Situated Cognitive Theory [28]. Situated cognitive theory is characterized by contextuality, interactivity, dynamism, and immediacy. Situational refers to the adaptation and cognition of the learner to the context; interactive refers to the interaction between the learner and the context; dynamic refers to the change of the learner's thinking; and immediate refers to the stimulation of the learner by the external context [29]. Virtual reality technology can provide learners with real-like situations, and through interaction and stimulation, learners can get immersive experiences and gain knowledge.

3.4 The Use of Virtual Reality in Education

Burdea and Coiffet argue that the characteristics of virtual reality include immersion, interactivity, and imagination. (1) Immersion refers to the feeling of being in the true environment. The user interacts with the virtual environment and gets sensory simulations of vision, hearing, and touch. (2) Interactivity refers to the user's perception and manipulation of the virtual environment. For example, in the virtual environment the user can touch the surrounding environment to get a realistic touch. (3) Imagination, which refers to the user's imagination or association in the virtual environment based on the interaction between himself and the environment [30]. From a pedagogical perspective, Hedberg and Alexander believe that virtual reality learning environments are characterized by the fact that learners can interact directly with objects in the virtual environment, and such environments can provide learners with a great learning experience and increase the immersion of learners [31].

The above-mentioned features of virtual reality technology overcome the limitations of traditional teaching environment, which not only helps to enhance learners' motivation but also enables contextual learning. Firstly, in terms of learning motivation, it is generally believed that learning motivation is divided into internal and external motivation, where internal motivation mainly includes learners' interest in learning, and external motivation includes teachers' and parents' evaluation and academic performance, etc. Huang found that virtual reality technology can promote learners' internal motivation by making learners feel pleasure and interest through simulated environment [32]. Learners can interact with the environment or communicate with their peers in the virtual environment, which promotes learners' external motivation. Second, virtual reality technology can also enable contextual learning. According to contextual learning theory, knowledge is actively constructed by learners in certain situations, and knowledge and situations can interact with each other; Herrington and Oliver argue that contextual learning facilitates learners to apply the acquired knowledge in real-life situations [33].

4. Conclusion

Integrating the problems in English writing and the characteristics of virtual reality education, the English writing problems can be solved by virtual reality technology. Firstly, in terms of vocabulary, virtual reality technology can simulate the environment and enable vocabulary context teaching

through its immersion and imagination features. Learning vocabulary in a visible virtual environment can help learners distinguish words that are similar in form, for example, by simulating some snacks and using candy to teach students "sweet"; by simulating a playground and using sweaty people to teach students "sweat". This will not only help learners remember the meaning of the words, but also enable them to distinguish the subtle differences between these words. Learning vocabulary in a visible virtual environment can help learners distinguish between words with multiple meanings, such as "project", which is generally familiar to learners as "event", but the virtual environment allows learners to manipulate the projector and tell this act is called "projection" and helps learners to remember other meanings of the word.

In terms of learning motivation, the use of virtual reality technology is conducive to making writing learning more interesting, thus enhancing learners' interest in learning English. Through the immersion and spatial characteristics of virtual reality technology, learners can independently observe their surroundings and come up with their own thinking, which is conducive to the creative thinking of English writing learners. This is the opposite of the traditional teacher-based approach of teaching writing, in which the teacher imitates a model text, and learning to write through virtual reality technology is student-centered, with students writing their own ideas based on their own observations and thoughts. This is conducive to the enhancement of learners' internal motivation for learning writing. At the same time, virtual reality technology allows users to communicate and discuss with each other, which not only facilitates brainstorming among learners, but also enhances learners' external motivation for learning writing.

In conclusion, using virtual reality technology for English writing teaching can solve the imbalance between the acquisition of basic knowledge and the improvement of writing motivation in the traditional writing teaching method, and create a new writing teaching method that is student-centered and conducive to students' independent observation and creative thinking expression.

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