

The Application of Reinforcement Theory in the Review Stage of English Teaching and Learning in Chinese Higher Vocational and Technical Colleges

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Abstract: Reinforcement theory is a behavioral psychology theory proposed by Skinner, which has been widely applied in various fields such as management and education. Positive reinforcement and negative reinforcement are the two types of reinforcement. By adopting these two different reinforcement methods appropriately, human behavior can develop in a positive direction. In the review stage of English teaching and learning in Chinese higher vocational and technical colleges, the use of different reinforcement methods based on various classes, individuals, conditions, and environments can effectively promote or change the behavior of teachers and students, thereby improving the effectiveness of the review.

Keywords: Reinforcement theory; Higher vocational and technical colleges; English teaching and learning; Review; Effectiveness

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1. Introduction

Reinforcement theory, proposed by the renowned psychologist and behaviorist Burrhus Fredric Skinner^[1], is an important component of Skinner's new behaviorist psychology and has been widely applied in various fields such as employee management, teaching and learning, and patient treatment. The reinforcement theory "has creatively developed learning theories, bringing a significant impact on educational and teaching practices, and promoting the development of related disciplines"^[2]. It "has positive significance and promoting effects in English teaching"^[3]. It can not only provide theoretical guidance for English teaching and learning in higher vocational and technical colleges but also provide practical path references for operational methods.

2. Current situation

The application of reinforcement theory in teaching and learning is being widely studied globally. In China, whether in developed coastal provinces or underdeveloped ethnic areas, there are many studies and applications in

this topic, from elementary education to higher education. For example, Zuo^[4] studied how to apply reinforcement theory to improve the teaching effectiveness of chemistry in vocational and technical colleges in border ethnic areas; Li^[5] explored how to apply reinforcement theory to encourage students to exert subjective initiative and actively engage in learning through repeated small steps of positive motivation. Huang^[6] explored the application of reinforcement theory in English vocabulary teaching in middle schools.

Yet, there is not much research on the application of reinforcement theory in teaching and learning in higher vocational and technical colleges in China, especially in the field of English teaching and learning. According to a search on China National Knowledge Infrastructure (CNKI), there are only two related academic papers in the field of English teaching and learning. One is by Xiaobu Wu^[7], who discussed the concept, practical significance, application, and precautions of negative reinforcement, drew on current research results in educational psychology, and explored the value of applying reinforcement theory to vocational English teaching. The other is by Yan Chen and Xun Dong^[8], which explored how to improve the teaching quality of vocational English based on Skinner's reinforcement theory.

However, as is well known, higher vocational and technical education accounts for half of China's higher education, and English is a compulsory basic course in all higher vocational and technical colleges. In recent years, statistical data shows that a high proportion of students in Chinese higher vocational and technical colleges are preparing to take the university entrance examination^[9]. Various provinces and regions have successively released enrollment plans for ordinary universities, making English a mandatory public basic subject for the examination. The Ministry of Education of China has organized the development of "English Curriculum Standards for Higher Vocational and Technical Colleges (2021 Edition)"^[10], which highlights the "educative, cohesive, and vocational" nature of this course^[11]. Vocational and technical colleges are also constantly exploring vocational ability-oriented reform of English courses^[12]. In the context of the integration of industry and education, vocational English courses also need to meet the demand for market talents and help students' career development^[13]. All of these once again make the reform of English courses in higher vocational and technical colleges the focus.

3. Study significance

Seen from the above discussion, there is an urgent need to strengthen the research on the application of reinforcement theory in the field of vocational English teaching and learning. This research is of great significance both theoretically and practically. In terms of theory, it is possible to further deepen the research on reinforcement theory in teaching and learning, especially in vocational English teaching, to supplement the lack of research in this field and to further apply and promote reinforcement theory. In practice, reinforcement theory can effectively guide the reform of the vocational English curriculum, provide ideas and operational methods for vocational English teaching and learning, and help greatly improve their effectiveness, especially in the review stage which demands more repetitions.

4. Strategies and methods

The reinforcement theory holds that human behavior is influenced by the outcome, and when the outcome is favorable to them, this behavior will repeat, and vice versa; changing the outcome of human behavior can change the way people behave; "reinforcement theory proposes that you can change someone's behavior by using reinforcement, punishment, and extinction"^[14].

Reinforcement includes two types: positive reinforcement and negative reinforcement. Positive reinforcement is the use of pleasant stimuli to affirm and motivate the outcome of behavior, promoting its continuation and

maintenance, to ensure that the behavior continues to develop in the expected direction and bring about the expected results. Negative reinforcement is the process of promoting the recurrence of a behavior by eliminating painful stimuli.

According to Skinner's reinforcement theory, reinforcement has varying effects on different individuals and situations. The same reinforcement method has different effects on different people, and the effects on the same person in different periods and environments also differ. When a person's ideas, needs, and environment change, different stimuli need to be used to reinforce him/her in order to ensure that the reinforcement is effective. In education and teaching, "reinforcement should be based on individual factors such as students' interests, hobbies, and needs" ^[15].

Reinforcement methods can be used in the review stage of English teaching and learning, and positive and negative reinforcement methods can be comprehensively utilized to promote or change the behavior of teachers and students, thereby improving the effectiveness of teaching and learning.

4.1. Teachers

Firstly, teachers should develop a good review plan. It is advisable to categorize the knowledge to be reviewed based on course standards, teaching plans, and exam outlines, combined with textbooks and other review materials, and refine it into basic vocabulary, fixed collocations, sentence patterns, grammar, translation, writing, etc. The task objectives and teaching progress are planned for each stage of review, ensuring coverage of important knowledge points and ensuring that each stage and link is progressive and mutually compatible. Only in this way can knowledge be better reproduced, facilitating students to strengthen and consolidate, helping them establish a knowledge system and systematically master required knowledge, thus having more sense of gain, confidence, and learning passion.

Secondly, teachers should select appropriate review materials. During the review stage, various learning materials flood in, and teachers need to learn how to focus and choose, selecting and recommending different review content for students based on their foundations and levels. For students with a good foundation, it is advisable to choose challenging content for them to review, in order to affirm their abilities and strengthen their learning initiative. For students with poor foundations, it is necessary to reduce the difficulty and requirements and select relatively simple content for them to review. Only in this way can they avoid feeling frustrated due to their inability to learn or remember what have been taught, and avoid constantly making mistakes and reinforcing incorrect answers in their minds, resulting in repeated mistakes and ultimately losing confidence and motivation.

Thirdly, teachers should adopt suitable teaching methods and means. It is advisable to carry out graded teaching based on students' different foundations and levels ^[16], using various methods. For students with a good foundation and high level, challenging teaching methods are used. For students with poor foundation and low level, teaching methods such as explanation, example, and encouragement are used to slow down progress, reduce difficulty, and simplify content. For example, in written expressions such as essays and translations, they are not required to memorize difficult model essays. Instead, the model essays should be simplified and given to them for learning and memorization. At the same time, they are encouraged to use simple words and sentences to express themselves. In this way, students can have a pleasant learning experience and review interests. In this process, modern information technology should be used more to carry out teaching, improve teaching efficiency, and achieve twice the result with half the effort. For example, conducting mini-lectures, leveraging the characteristics of "innovative forms, concise and effective content, prominent themes, specific content, and flexible presentation methods" ^[17] to help students better consolidate their learned knowledge.

Fourthly, teachers should strengthen the creation of an external environment to enable students to apply what

they have learned. According to Rod Ellis' theory of second language acquisition, there are two external factors that are crucial for language acquisition: social environment and the input received by learners. Without a social environment and the input of language samples, language learning cannot proceed^[18]. Motivation, emotions, attitudes, and other factors have significant psychological impacts on second language acquisition^[19]. The social environment and the inputs of language samples play a stimulating and reinforcing role in the motivation, emotions, and attitudes of language learners. Therefore, it is necessary to fully leverage the advantages of the integration of industry and education in vocational and technical colleges, continuously deepen college-enterprise cooperation, utilize industry and enterprise resources to create a real context for students' English learning and application, enable them to apply what they have learned, strengthen their motivation, emotions, attitudes, etc., and enhance their enthusiasm and consciousness for learning.

Fifthly, teachers should make good use of tests and provide timely feedback. Through tests, teachers can better understand students' level of knowledge mastery, analyze the gains and losses of teaching, and make corresponding adjustments to find the direction and focus for the next stage of revision. Students also receive feedback through tests to understand their true level and the direction of their efforts in the next stage. Tests and evaluations can help students review and reinforce their learned knowledge, master exam skills, and adapt to the pace and psychological state of taking exams. In the implementation process, it is necessary to choose the appropriate testing time, so that students have sufficient preparation for the test, and at the same time, the frequency and difficulty of the test should be determined based on the actual situation of the class and students.

Sixthly, teachers should pay attention to the management of students' emotions. Learning emotions play a crucial role in vocational English education^[20]. Throughout the review process, especially when exams are approaching, it is important to pay attention to students' emotions, make good use of emotional stimuli, and help students manage their emotions well. Teachers need to help students eliminate misconceptions and help them build confidence in reviewing and taking exams. Teachers should use less criticism and punishment, but more affirmation and rewards, such as small prizes and certificates, to motivate students. Teachers try to expand the scope of motivation as much as possible while making good use of peer motivation so that students feel like they are progressing together with their classmates, rather than feeling like they are always lagging behind.

4.2. Students

Firstly, students should make a study summary and review plan. On the one hand, it is necessary to do a good job of summarizing learning. By summarizing, one can understand his/her own gains, losses, and shortcomings, discover learning patterns and tips, summarize and organize relevant knowledge points, and provide references for formulating the next review plan. On the other hand, it is important to develop a personal review plan for the next step. This plan requires both overall and detailed arrangements, specifically covering the content sections to be reviewed daily and at each time slot. It should be noted that it is best to synchronize the review plan with the teaching schedule, and regularly review and reflect on the review plan, making corresponding adjustments if necessary. Only in this way can the review actions and learning content be better reinforced, thereby improving the review effect.

Secondly, students should strengthen training on specialized content. Focusing on studying and reviewing a specific topic during a certain period of time is a form of reinforcement training that can make students more easily understand and comprehend relevant knowledge, deepen impressions, and improve memory effectiveness. It should be noted that the content of the special projects should be progressive, from easy to difficult, and the various projects should be related as much as possible in order to achieve better repetition and reinforcement. For one's weak subject, it depends on the difficulty of the subject and the length of review time. If the difficulty of a

certain content is too high and the remaining time is too little, it is not advisable to spend too much energy on that content, and even choose to give up that content to avoid repeating mistakes, strengthening erroneous memories, enhancing frustration, or undermining confidence.

Thirdly, students should use correct exercises and avoid repeated mistakes. The “wrong answer analysis” method, which we often advocate, is not suitable for all students. For students with a good foundation and few errors, analyzing wrong answers plays a beneficial role. By mastering both the incorrect and correct answers, they can quickly address their gaps in knowledge, thereby boosting their confidence and motivation for review. For students with a poor foundation and many errors, the “wrong answer analysis” may not be effective during the review stage, and may even have a counterproductive effect. If they read the wrong answers all day long, they may become more confused and the wrong answers will be reinforced in their memory. For these students, it may be more effective to review before exams by repeatedly reading and memorizing the correct answers, thereby strengthening and consolidating the correct answers, rather than the wrong answers.

Fourthly, students should provide more comprehensive stimulation and reinforcement. On the one hand, different review methods such as reading, memorization, Q&A, listening to recordings, and reading aloud can be used to fully mobilize the initiative of the senses and limbs, allowing the learned knowledge to be strengthened in various stimuli. On the other hand, different stimuli are used, such as marking different knowledge points with specific colored markers and reviewing the same content using different media such as paper materials, audio, and video, in order to achieve the effect of reproduction and reinforcement. In this process, it is also necessary to avoid low-level and simple repetitive reviews as well as avoid wasting unnecessary time and energy. In addition, reviewing behavior can also be linked to emotions, such as reviewing in a relaxing background with light music or reviewing with good friends, in order to strengthen learning awareness and behavior.

Fifthly, students should make good use of memory techniques to consolidate knowledge. Students can follow the basic laws of memory, such as following the Ebbinghaus forgetting curve, and review during periods of sharp decline in memory retention, in order to rebound the retention rate back to a higher level. A variety of memory methods can be used, especially associative memory, such as using prefixes, suffixes, roots, synonyms, antonyms, etc., to associate relevant vocabulary and continuously repeat them, thereby deepening impressions and making them easier to remember. It is also important to prevent isolated memorization of vocabulary and knowledge points and strengthen them in specific contexts, such as memorizing vocabulary in example sentences, paragraphs, or articles, so that vocabulary can be reproduced and used in specific contexts, thereby strengthening the vocabulary that needs to be memorized and mastered.

5. Conclusion

The reinforcement theory can indeed play a guiding role in the review stage of English teaching and learning. By using both positive and negative reinforcement methods, we can help improve our teaching and learning effectiveness. Undoubtedly, we need to use varying reinforcement methods according to different classes, individuals, conditions, and environments. For individual students whose positive or negative reinforcement does not work, we need to further understand their internal factors such as memory, attention, expression ability, and learning habits, as well as external factors such as parental requirements and learning conditions. We also need to understand students’ daily habits, healthy diet, etc., in order to adjust and optimize reinforcement methods, and even use “punishment” or other means. In short, we should follow the laws of education, understand and master students’ psychology, adapt to specific conditions and environmental conditions, and teach flexibly according to students’ aptitude.

Disclosure statement

The author declares no conflict of interest.

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