

The Application of 5E Instructional Model to English Reading Teaching in Senior High School

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Abstract: English reading skill is one of the basic language skills in senior high school students' English learning, which plays an important role in cultivating students' English subject core competencies. Different from the traditional English teaching mode, 5E instructional model emphasizes the subject position of students in teaching, consequently stimulating students' reading interest and enhancing students' reading level. Thus, the paper attempts to apply 5E instructional model to English reading teaching in senior high school, hoping to provide a new reference for teachers' English reading teaching.

Keywords: 5E Instructional Model; English Reading Teaching.

1. Introduction

Reading is an important way for learners to communicate and acquire information, which affects the development of students' comprehensive quality. The New English Curriculum Standard for Senior High School (2017 Edition, 2020 Revision) also puts forward that the high school English curriculum should focus on developing students' comprehensive ability to acquire and process information through English reading.

In order to realize the reading teaching requirements of the New English Curriculum Standard and improve the effectiveness of reading teaching, teachers attempt to break the shackles of traditional teaching and seek a teaching mode that conforms to the current background.

The 5E instructional model is a teaching method based on constructivism theory, the core of which is to stimulate students' learning interest and enthusiasm and promote students' independent learning and cooperative learning. In addition, the 5E instructional model attaches importance to learners' previous knowledge, and emphasizes that learners can acquire new knowledge under the guidance of teachers' scaffolding through independent thinking and cooperative exploration and that learners can make meaning construction to realize knowledge transfer.

Thus, this paper attempts to improve the current situation of English reading learning of high school students by applying 5E instructional model to English reading teaching in senior high school.

2. Phases of 5E Instructional Model

Bybee, a member of the biological science curriculum research in the United States, proposed the 5E instructional model, which divides the teaching process into five interrelated phases according to students' cognitive characteristics, that is, engagement, exploration, explanation, elaboration and evaluation.

The first phase is engagement. The purpose of this phase is to drive students to take the initiative to study and explore and connect with existing knowledge, and prepare for exploration. The teacher's main task is to create a problem situation to stimulate students' interest in learning, and the students' task is to listen attentively and ask questions about new knowledge

and what they are interested in.

The second phase is exploration. Through teaching exploration activities, students constantly explore and understand new knowledge, acquire new knowledge and concepts, and realize the development of main skills. Based on the situation or theme of the first initial stage, teachers design and implement exploratory teaching activities to achieve the purpose of allowing students to think and explore. During the exploration activities, students generate ideas and questions, and develop their understanding of current concepts and concepts, and seek solutions to problems either individually or in small groups.

The third phase is explanation. This phase is an explanation of the results of the previous phase of exploration. In the process of explanation, students can explain their understanding to each other, challenge each other, and continue to explore and discuss the solution to the problem. At the same time, teachers explain concepts in different ways and provide solutions to help students understand concepts clearly and reduce misunderstandings.

The fourth phase is elaboration. Through the exploration and explanation phase, students have a certain cognition and understanding of new concepts. On this basis, teachers guide students to use concepts to solve practical problems, so as to deepen their understanding and application of concepts.

The fifth phase is evaluation. This is a continuous assessment phase that can occur at any phase of learning. Evaluation can help students to recognize their own ideas, methods and operational skills in a task, and also help students to recognize their own efforts to explore activities.

3. Theoretical Framework

Relevant theoretical foundations on 5E instructional model are presented, including constructivism learning theory and humanistic learning theory.

3.1. Constructivism Learning Theory

Since the 1990s, constructivism learning theory has gradually become popular in the world and has received more and more attention. Piaget (1970) systematically discussed his epistemological views in *Principles of Genetic Epistemology*, and was thus regarded as the originator of constructivism theory. Piaget (1970) believed that children gradually construct their understanding of the external world

in the process of interacting with the surrounding environment, thus developing their own cognitive structure. Therefore, the essence of learning should be a bidirectional construction process of subject and object.

From the perspective of constructivism learning, learning is a process in which learners construct knowledge independently. In the process of learning, learners should actively construct knowledge, rather than accept knowledge as passive receivers of information.

The 5E instructional model is an advanced attempt based on constructivism theory and adds a very important evaluation component. In English reading teaching, teachers create questions that are close to students' knowledge and experience so as to attract students' attention to classroom activities. Then, teachers guide students to complete information integration and meaning exploration through independent learning and cooperative exploration. After the students show their achievements, the teacher guides the students to correct their previous wrong and one-sided understanding and realize the meaning construction of knowledge. Finally, teachers guide students to reflect on their shortcomings in reading learning through various forms of evaluation.

3.2. Humanistic Learning Theory

In the 1950s and 1960s, humanistic psychology was gradually formed in the United States, emphasizing people's self-awareness and making people realize their intrinsic value or potential, and promoting people's self-realization. Rogers(1983) shows that humanistic educational theories are mainly expressed in two aspects: one is "meaningful free learning concept" and the other is "student-centered education concept". Humanistic educational theory pays more attention to the relationship between learning content and students, divides learning into meaningful learning and meaningless learning, and advocates "meaningful free learning view".

Therefore, in actual teaching, teachers should regard students' thoughts, feelings and experiential behaviors as the main body of teaching, fully respect and consider students' individual characteristics and self-needs, and emphasize students' personal experience and self-evaluation. At the same time, teachers should fully understand the inner psychological world of students, attach great importance to the inner activities of students, in order to adapt to students' experience, needs, interests, differences and other emotional factors in learning.

Every part of the 5E instructional model is based on the development of students' personality and ability, emphasizing learner-centred learning and allowing learners to learn freely and to acquire new knowledge and consolidate old knowledge through their own active participation and exploration. At the same time, in the process of exploration, students can take independent exploration or group cooperation to complete the exploration task.

4. The Application of 5E Instructional Model to English Reading Teaching in Senior High School

Based on the phases of 5E instructional model, this paper takes the teaching of "Space: The Final Frontier", which is selected from Compulsory 3 unit 4 of senior high school English of PEP (2019), as an example to clarify the

application of 5E instructional model to English reading teaching in senior high school.

4.1. Analysis of Teaching Material

The selected teaching material is a reading passage named "Space: The Final Frontier" from the fourth unit of PEP Book 3. The article is mainly about the development of space exploration, and the type of text is a popular science article. And the article aims to help students recognize the significance of space exploration and develop space exploration spirits.

4.2. Teaching Objectives

At the end of the class, students will be able to:

- (1) fill gaps in a passage by focusing on the linking words and summarize the main idea of each paragraph using key words.
- (2) introduce the development of space exploration by using mind-map.
- (3) recognize the significance of space exploration and develop space exploration spirits.

4.3. Teaching Procedures

Step 1: Engagement

Activity-1: View and Talk

- (1) The teacher guides students to look at the two pictures and answer what they can see in the pictures.

Possible answer: Yang Liwei and Liu Yang are waving to us.



Figure 1. Picture 1



Figure 2. Picture 2

- (2) Then the teacher asks students to think about why people want to explore space.

Possible answer:

- 1) People want more places to live in.
- 2) People want to make friends with aliens.
- 3) People want to gain more knowledge to satisfy our curiosity.

Activity-2: Distribute Evaluation Sheet

- (1) The teacher distributes evaluation sheet and inform students of the precautions to fill in.
- (2) The teacher reminds students to fill in the evaluation sheet after each phase of teaching.

Step 2: Exploration

The teacher divides the whole class into 6 groups and asks the students to complete the following activities by reading texts or searching for relevant materials, and the activities are carried out by group cooperation for 15 minutes.

Activity-3: Read for Gap-filling and Main Idea

- (1) The teacher asks students to work in groups and choose the correct sentences to fill each gap with the given sentences, then give the relative reasons.

Table 1. Evaluation Sheet

Phase	Evaluation Content	Self-evaluation			Peer Evaluation		
		A	B	C	A	B	C
Engagement	Activate background information about space exploration.						
	Get interested in the topic——space exploration.						
Exploration	Complete activity-3.						
	Complete activity-4.						
Explanation	Master the main idea of paragraphs.						
	Clarify the development of space exploration.						
Elaboration	Have a better understanding of the title and the spirits of space exploration.						
	Recognize the significance of space exploration.						
	Integrate what I've learnt to output.						
Evaluation	Reflect on the performance in the class.						
Problems							
Solutions							

Tip: linking words (although, after...); words/phrases or their synonyms that repeat many times; pronouns (they,...).

Possible answer: B D A C

A. Although scientists try to make sure nothing goes wrong, accidents can still happen.

B. They also really wish to discover other planets that are suitable enough to support life.

C. The future of space exploration remains bright.

D. After many experiments, they succeeded in making rockets that could escape Earth's gravity.

(2) After filling each gap, the teacher asks students to summarize the main idea of each paragraph by using key words.

Table 2. Main Idea

	Main Idea (possible answers)
Para. 1	natural curiosity
Para. 2	achievements of USSR and America
Para. 3	risks & desires
Para. 4	China's achievements
Para. 5	bright future

Activity-4: Draw a Mind Map

(1) The teacher asks students to work in groups and draw a mind map related to the development of the space exploration.

(2) The teacher asks students to describe the development of the space exploration based on the mind map made by their own.

Step 3: Explanation

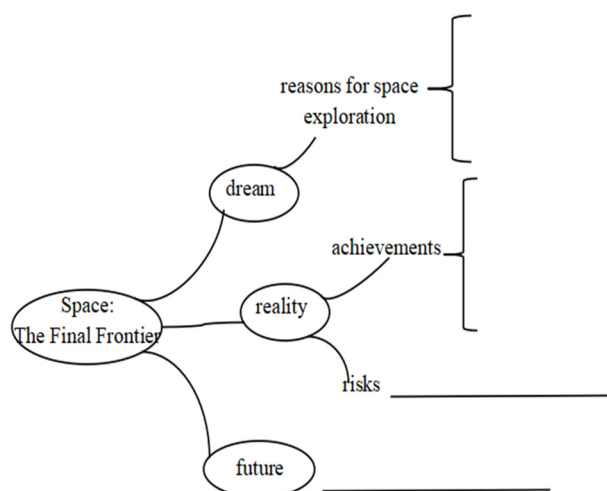
Activity-5: Share Answers about Exploration Activities

(1) The teacher asks students to share their answers with us (gap-filling and main idea). If students make mistakes, the teacher should guide students to correct and explain the text content and structure, so that students can master the structure of the text and the general idea of the paragraphs.

(2) The teacher invites students to show their mind map with us and try to clarify the development of space exploration, then the teacher invites students from other groups to further complement the presentation of the mind map.

(3) The teacher leads students to sort out and summarize the difficulties and mistakes encountered by the activities in

the exploration phase.

**Figure 3.** Mind Map

Step 4: Elaboration

Activity-6: Think Deeper and Share

Q1: What does the title "Space: The Final Frontier" mean?

Q2: What's the author's attitude towards space exploration?

Q3: What is the importance of carrying on space exploration?

Activity-7: Make an Interview

(1) The teacher guides students to work in pairs to make an interview about space exploration.

(2) The teacher requires that the reporter should design questions about space exploration based on the text and the interviewee should answer questions raised by the reporter.

Step 5: Evaluation

Activity-8: Fill in and Reflect

(1) The teacher asks students to fill in the evaluation sheet again.

(2) The teacher leads students to reflect on their own performance in this class based on the evaluation of the first four stages and make improvements to the shortcomings.

5. Conclusion

The 5E instructional model emphasizes that students can complete English reading learning tasks through autonomous cooperation, thus stimulating students' positive emotions in reading learning and improving reading ability. Therefore, the paper hopes to provide guidance for pedagogical uses of the 5E instructional model in senior high school. In actual teaching, the teachers can attempt to apply 5E instructional model to English reading teaching, to improve students' reading comprehensive ability and stimulate students' interests in reading.

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