

Application of Mind Mapping in English Grammar Teaching in Senior High School

Lan Wang, Jing Xu

Sichuan University of Science and Engineering, Zigong, CO 643002, China

Abstract: Grammar, as one of the core rules of language structure, plays an important role in English teaching in senior high school. However, looking at the current grammar teaching practice, it is not difficult to find that many high school English teachers still tend to guide students to learn grammar by mechanical memorization, which weakens students' interest in grammar learning and makes grammar learning boring. This situation urgently needs to be fundamentally improved. Therefore, it has become an urgent task to find and practice more efficient and attractive grammar teaching methods. Mind mapping, an innovative learning method, with its unique advantage of presenting knowledge directly, can not only effectively promote the improvement of students' thinking ability, but also add infinite vitality and fun to English class. Although mind mapping has shown extensive application value in English teaching such as vocabulary, reading, and writing, its exploration and application in grammar teaching is relatively limited. Organizing the scattered and disorganized grammar knowledge in textbooks through mind mapping is helpful in improving students' learning efficiency, providing a new perspective for students to learn grammar, and helping to enrich students' learning strategies. Therefore, this study will focus on high school English grammar teaching, explore the principles that should be followed when applying mind mapping in this field, and show the specific application of mind mapping in grammar teaching with general teaching cases, aiming to provide high school English teachers with novel teaching perspectives and strategies, so as to optimize the quality of grammar teaching and improve student's learning experience and efficiency. Finally, students can master certain grammar learning strategies and improve their learning ability.

Keywords: Mind mapping; Senior high school English grammar; Grammar teaching.

1. Introduction

Grammar is the foundation of language construction. It can help students to use language correctly and express ideas clearly, thus helping to exert the function of language and strengthen people's communication. Grammar can help learners organize sentences and paragraphs correctly, use punctuation correctly, improve their writing skills, and make the essay clearer, concise, and easy to understand. Grammar can help students understand the general ideas of paragraphs and improve their reading ability. These three aspects are also essential abilities that high school students need to master. As a major subject in senior high school, learning English grammar is particularly important. English grammar is a set of rules and principles that define language structure, usage, and interpretation. It covers all aspects of language, such as vocabulary formation and sentence structure.

First, from the perspective of vocabulary formation. If high school students want to know, remember, and use vocabulary more deeply, they must understand and master the rules of word formation and phrases. Therefore, to deepen their impression of English vocabulary, teachers can improve grammar teaching and help them analyze regulations, to understand the word-formation characteristics of vocabulary better. With the guidance of teachers, students can gradually master the rules of word formation, and then expand their vocabulary by expanding their thinking. In this way, vocabulary teaching can better achieve the expected purpose.

Second, the structure of the clause. Without the existence of English grammar, language would just be a bunch of incoherent words. English vocabulary can become a language only under certain grammatical rules. Put simply, grammar specifies habits and rules for the use of words. In terms of terminology, grammar is the sum of the rules that affect the

change of word usage and the rules of sentence formation. Without grammar, words pile up into a meaningless jumble of symbols. Only with the help of grammatical structure, can the formation of language ability have vitality and vitality, and can be widely used in people's communication. For example, in English writing, reading, speaking, and listening, faced with a large number of English articles that need to be "decoded", the knowledge of English grammar must be used to identify and confirm. If students' knowledge of grammar is wrong or weak, they will misunderstand the general idea of English or defeat the purpose of writing. Especially in the process of oral communication with others, if there is a grammatical error, the two parties in the communication can not express their meaning, which will lead to communication interruption.

Thirdly, from the perspective of teaching, grammar teaching is indispensable. This is the requirement of the new curriculum standard for English teaching. The 2017 (revised) English Curriculum Standards for Senior High School make the following requirements: "The main purpose of grammar in senior high school is to enable students to understand and express English grammar by learning existing grammar and applying it appropriately in specific situations, to improve their understanding of English grammar." It can be seen that the importance of learning English grammar knowledge.

Finally, from the perspective of the external environment, with the development of world globalization, English as an international language has become increasingly important. At the same time, as one of the main subjects of college entrance examination, English has attracted much attention. To train students to learn English, we should make great efforts in pronunciation, vocabulary, grammar, function, and theme. (Wang Qiang) Grammar, as an indispensable element of English learning, plays an important role in senior high school

English in China. The author finds that due to the complexity and systematicness of grammar knowledge learning in high school, it is particularly important to guide students to reprocess knowledge and build their own grammar knowledge learning system after the initial acquisition of knowledge, which also reflects the importance of English grammar learning courses in high school. According to the survey, at present, high school students still face many problems in learning grammar. For one thing, they have difficulty remembering grammar points accurately; In addition, it is not possible to use proper grammar to achieve effective English expression. When students learn grammar, they do not process and understand it, which can only be remembered by students briefly, and then affect students' communication. In short, most high school students believe that learning grammar is a stumbling block on their way forward. In this context, high school English teachers should think about how to help students systematize and structure grammar to improve the depth of students' learning. To improve the effectiveness of English grammar learning in senior high school, senior high school teachers apply inductive and deductive methods to grammar. Among them, induction guides students to analyze language data in a way of extracting cocoons, so as to further process grammar-related knowledge; In contrast to induction, the deductive method summarizes or deduces personality from existing universal laws. The conclusion is that the application of this method can guide students to form a system from a large area to a small area in the process of grammar learning to a certain extent. But in practice, the former is more time-consuming and laborious; The latter generally exists in the case of teacher-led classrooms, where students can only passively accept grammar knowledge points, resulting in students losing interest in learning grammar. A teacher's first duty is to make students think and to make effective connections between old and new knowledge. (Avgoustos) In grammar teaching, we should guide students to think and build a knowledge system instead of simply memorizing it mechanically. Therefore, the author believes that to try more efficient grammar teaching methods, mind mapping is one of them. In the mind mapping mode, students can optimize their learning mode based on the representation form, so that traditional grammar learning can be changed into bright, bright, and easy-to-remember concise images, and the learning content can be understood more clearly.

2. The Definition of Concept

2.1. The definition of mind mapping

Mind mapping, also known as mind, brain mapping, etc., is a "note-taking method" proposed by British scholar Tony Bazin in the 1960s. (Zhao Guoqin Lu Zhijian) Mind mapping is a tool that transforms abstract concepts into concrete forms. It expresses complex abstract concepts in vivid ways. Based on lines, colors, graphics, and concise vocabulary, an organized network structure is constructed to express and reflect knowledge in related fields from multiple perspectives. As an effective learning tool, mind mapping can help learners build a complete conceptual network. A mind map shows the connections of knowledge in a tree-like structure, starting with a central theme and extending outwards to form a series of sub-nodes, which step by step, present a visual structure. Through the analysis and summary of the relationship between knowledge points, a complete and clear network

model is formed, so as to realize the students' grasp and understanding of the whole knowledge structure. With the increase of branches, the plasticity of thinking is also enhanced, and the deepening of the level can highlight the depth of thinking. (Zhao Guoqin Lu Zhijian)

2.2. The classification of mind mapping

In 1992, Professor David Hyerle from the United States sorted out eight kinds of Thinking Maps based on Professor Buzan's Mind Mapping, which is translated as mind mapping in Chinese. This is a language or toolkit developed by Professor David Hyerle. Or a map of eight thought processes. Professor David Hyerle explained the use of eight mind maps in combination with the development laws of cognitive skills, each of which has graphic consistency and flexibility, enabling students to expand the map to reflect what they have learned (Lu Yao). Mind mapping is introduced to students, making it a tool for reading, writing, interdisciplinary investigation, etc. Professor David Hyerle first conducted outreach in North Carolina, New York, Texas, and Mississippi. By 2002, more than 3,000 schools in the United States had begun to use mind mapping and expanded to Singapore, New Zealand, and other places, and now mind mapping has become popular around the world. Below are the 8 mind mapping models proposed by Professor David Hyerle, which are the mind mapping models to be used in this experimental study.

The first is a Circle Map, with the theme in the middle and explanations around it, which can be used to define an object. This map helps students associate information related to the subject and is often used in brainstorming. The second is the Bubble Map, which is used to describe the nature or characteristics of things with the middle theme as the center. The third is the Double Bubble Map. It is suitable for comparison, finding similarities and differences, so as to obtain important information; The fourth type is the Tree Map, which can be classified according to certain laws, and often comes up with several main concepts or themes, and makes up sufficient arguments or theories on the branches; The fifth category is Brace Map, which represents the relationship between the whole and the part, and can also represent classification. The sixth is a Flow Map, which represents the process or order of things. The seventh type is the Multi-Flow Map, which is used to analyze the cause and effect of an event, and arrows are added here to indicate causality. The eighth category is the Bridge Map, which creates and interprets analogies. These 8 kinds of mind maps are not only related but also have their own focus. Properly applied will effectively promote the improvement of students' learning ability.

3. Theoretical Basis

3.1. Thinking visualization

Under the background of information age and intelligence age, the theory of knowledge visualization has been developed gradually. According to the existing achievements, the theory of cognitive visualization originates from the research of Eppler, M.J and Burkard, R.A, who defined the concept of knowledge visualization and believed that it can promote knowledge creation and knowledge transfer through visual expression, and can also construct and transfer images with complexity and abstraction. The knowledge

visualization theory is based on Paivio's dual coding theory. Paivio theorized that memory can be regarded as a coding mode generated by the interaction of visual coding and textual coding. In China, the teaching theory of Thinking visualization was first proposed by Liu Zhuoyuan, director of the Experimental Center of East China Normal University. He believed that cognitive visualization refers to "the use of a series of graphical techniques to show the otherwise invisible thinking (including thinking methods and thinking paths). The process of making it clearly visible."

With the advent of the era of artificial intelligence, knowledge visualization theory has received more and more attention. Under the background of the new era, knowledge visualization theory has been widely spread and applied to many industries. Knowledge visualization can effectively change students' cognitive way of things and enhance students' learning enthusiasm. Teachers can also use the theory of knowledge visualization to improve the efficiency of classroom teaching.

From the perspective of audio-visual visualization, mind mapping teaching mode has the characteristics of "symbolization", and mind mapping itself has unique characteristics of divergence, radiation, association, etc. It guides the English grammar teaching in senior high school in the form of "symbolization" to expand students' thinking, and then improves students' understanding and memory of English grammar. The research holds that knowledge visualization theory can be used as a reference for the practical methods and models of mind map-assisted English grammar teaching in senior high schools. The specific teaching and learning techniques, operation methods, and image presentation are also based on the knowledge-based theory.

3.2. Constructivism

Constructivism theory is an important part of the modern cognitive psychology school. It was first put forward by the Swiss psychologist Piaget. After a large number of experts and scholars have continuously explored and studied, the modern constructivism theory series has come into being. Constructivism believes that human learning itself is a continuous construction process, and human learning is the common assimilation and adaptation of knowledge under continuous efforts. In the whole process of learning, learners constantly take the initiative to build their new knowledge into their existing knowledge structure play a role, and actively interact this new knowledge with the external environment to promote their correct understanding and absorption of new knowledge. Internalize to form its existing cognitive framework.

Constructivism believes that teachers are not the center of teaching activities, but the organizer, instructor, facilitator, and environment creator of teaching. This point of view can be fully reflected in the application of mind mapping in English grammar teaching for senior high school students. In the early stage of grammar teaching, teachers can create a relaxed classroom environment based on existing materials, which can help stimulate students' background knowledge, vocabulary, short sentences, and sentence structure related to grammar teaching topics, and build connections with each other with the help of mind mapping. In this process, teachers can also play the role of teaching instructor and facilitator, guiding and improving the mind map drawn by students, so as to avoid the deviation of students' grammar teaching from

the theme. Constructivism advocates cooperative learning, and teachers can also guide students to cooperate and discuss in small groups. The discussion and communication between them can not only improve their original knowledge structure system, but also make them fully broaden their horizons, and finally realize meaningful research.

Constructivism theory holds that students' learning process should take autonomy as the main way, and students should take the initiative to combine old and new knowledge to build the knowledge framework. As far as grammar teaching is concerned, when students draw a mind map, they can express the grammar they have learned by drawing pictures and colors so that their thinking and knowledge can be displayed intuitively and their original cognitive structure can be fully mobilized. Compared with the traditional grammar teaching method, students can participate in grammar learning more fully and exert their learning initiative. Students establish connections between old and new knowledge through mind mapping and show the interaction process between knowledge and thinking more vividly through graphical means, so as to achieve knowledge acquisition and construction.

Applying mind mapping to English grammar teaching under the guidance of constructivism can change the classroom position between students and teachers. In addition, based on constructivism, in terms of the specific application strategies of mind mapping, teachers also need to combine the physiological and psychological characteristics of high school students and help students establish a related knowledge network through flow charts, bubble charts, circle charts, and tree charts, so as to change the previous scattered and boring grammar learning methods, and then promote the improvement of students' learning quality.

4. Application Principles of Mind Mapping in Grammar Teaching

4.1. Subjectivity principle

In all stages of English teaching, learners are the subjects of education, and teachers are only the guides of teaching. In recent years, while transforming the old-fashioned teaching methods, educators have been constantly trying new teaching methods under the premise of establishing the dominant position of students, such as flipped classrooms, three questions and three investigations, mind mapping, and other new teaching forms emerging one after another. Their existence makes the classroom return to the students. The regression of classroom initiative is as follows: First, students are the subjects in the classroom, and to ensure their enthusiasm and participation, teachers should pay more attention to and guide students who do not take the initiative to learn when using mind mapping in teaching. Second, students in class draw mind maps according to their understanding of specific grammar knowledge, constantly improve their ability to learn grammar independently, and form the habit of using mind maps through group cooperation and communication between teachers and students. Finally, the teacher gives full play to the guiding role and guides the students to complete the mind map. In the process of teaching and learning the application of mind mapping and noun clause grammar, the principle of students' subjectivity is followed, which is conducive to the cultivation of their independent learning ability and the improvement of their learning ability.

4.2. Heuristic principle

In the process of mind mapping teaching, when teachers design the classroom, different class types mainly adopt different open topics or questioning methods according to the needs, and take the topics or questioning in the lecture as the main line, so that students can give full play to their imagination to build knowledge structure and then develop their thinking ability. When teaching, teachers should use different heuristic methods to teach the grammar of noun clauses in the thought guide schema. Inspire students to start from specific points and spread out different branches. There are many ways to stimulate students' thinking in teaching, but all of them need to use mind mapping to enable students to exert their imagination to study and sort out knowledge concepts, and to complete the drawing of knowledge mind mapping. Teachers should also pay attention to the participation in classroom teaching so that students can successfully complete the learning task.

4.3. Procedural principle

Teachers should guide students to understand that neither teacher teaching nor student learning can be achieved overnight, but it is a process of learning that requires time effort, and patience. Therefore, when teaching, teachers should set an example and be serious and patient with all problems in teaching. In addition, teachers should have a basic plan for mind map teaching. Before starting, they should guide and demonstrate to students how to draw mind maps. At the same time, they should explain basic knowledge or ask them to summarize and draw mind maps according to ideas. Give more pictures so that students can improve and perfect their English learning. In addition, for students with unsatisfactory grades, teachers should guide and encourage them to improve constantly. To put it simply, when teaching, teachers should comprehensively consider the situation of students at different learning levels, and give more tolerant and patient guidance and encouragement, so that students can experience a process of transformation to excellence.

4.4. Summarize and organize principles

Efficient and easy-to-remember long-term learning methods have a common feature: to summarize and organize the learned knowledge in different forms so that it can be associated with the original knowledge and internalized. The form of teaching and learning in the past was to make students accept knowledge passively, passively, and scattered, that is, in traditional teaching, knowledge acquisition is not processed by thinking, memory is mechanical, and knowledge points are scattered. The application of mind mapping to teaching can change this situation, making knowledge systematic, easy to remember, and not easily forgotten.

5. Conclusion

The most obvious advantage of mind mapping is its illustrative nature, which can make complex English grammar points more systematic. It enhances students' interest in learning nominal clauses and enables students to learn English grammar actively and autonomously. Therefore, in teaching, teachers can make full use of mind mapping and

combine it with knowledge of English grammar in high school. After learning grammar knowledge, organize it into a mind map, which can be organized by teachers and students in class, or allow students to prepare themselves. Use the mind map to find out the relationship between this grammar and other grammar, and integrate it into the whole grammar knowledge framework of senior high school. Secondly, a major obstacle in the grammar teaching of noun clauses in high school is students' mechanical rote memorization. If you just mechanically recite the knowledge without understanding it, students will not really use it. The application of mind mapping will overcome this shortcoming by organizing grammar knowledge to make it easier for students to understand.

In general, the study of grammar must highlight students' subjectivity, increase communication between students, and exercise students' logical thinking abilities. Teachers need to reasonably plan the teaching time and leave preview questions before class so that students can be prepared so that they can make full use of class time to absorb and understand knowledge and learn more efficiently. After class, teachers should supervise unfinished or unsatisfactory homework, let students know where improvement is needed, and urge them to correct mistakes.

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