

The Strategies of the 5E Instructional Model in Junior High School Grammar Teaching from the Perspective of Teaching-Learning-Assessment Integration—A Case Study of the Attributive Clause

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Abstract

Teaching-Learning-Assessment Integration is beneficial for cultivating students' core competence, facilitating teachers' professional growth, and fulfilling the fundamental objective of moral education in the English discipline. In teaching activities, the integration of these three elements makes them depend, influence and develop with each other. The 5E instructional model deeply integrates "learning" and "assessment" through its structured inquiry process, including five key stages: Engagement, Exploration, Explanation, Elaboration, and Evaluation. It is effective to develop students' critical thinking and practical abilities. The core value of this approach is to ensure authentic learning occurs within students and transform the classroom into a dynamic space for active knowledge construction. As the foundation of language acquisition, grammatical knowledge serves as both a central component of junior high school English teaching and a key challenge in teaching and learning for both students and teachers. According to the requirements of the "Compulsory Education English Curriculum Standards," this paper explores how to effectively incorporate the 5E instructional model into junior high school English grammar classrooms. It aims to establish a novel Teaching-Learning-Assessment Integration, integrated pedagogical paradigm, providing innovative approaches to grammar instruction while enhancing both the effectiveness and engagement of students' grammar learning.

Keywords

Teaching-Learning-Assessment Integration; 5E teaching model; Junior English Grammar; Attributive clause

1. Introduction

The National English Curriculum Standards for General Senior High Schools (2017

Edition, Revised 2020) (referred to as the 2017 Senior High School Curriculum Standards) states that "in actual teaching, teachers should handle the relationship between evaluation, teaching, and learning, and promote the integrated implementation of teaching, learning, and evaluation" [1]. The Compulsory Education English Curriculum Standards (2022 Edition) (referred to as the 2022 Compulsory Education Curriculum Standards) proposes the curriculum philosophy of "focusing on the integrated design and implementation of 'teaching-learning-evaluation,'" requiring teachers to establish an overall educational philosophy of "teaching-learning-evaluation," pay attention to the analysis of the interrelationships of various teaching elements, and achieve teaching that combines with objectives, activities, and evaluation [2]. According to the Teaching-Learning-Assessment Integration, "teaching" refers to designing, organizing, and implementing teaching activities guided by core competencies, determining the direction and basic methods of education, and directly affecting the effects of teaching; "learning" refers to a series of language practice activities in which students participate as the subjects under the guidance of teachers, determining the effects of teaching; "evaluation" mainly plays the role of monitoring the process and effects of teaching and learning, providing references and basis for promoting teaching and learning through evaluation.

The 5E teaching model is a constructivist teaching model developed by the Biological Sciences Curriculum Study (BSCS) in the United States, which has received high attention in the field of science education [3]. The 5E teaching model mainly originates from the "learning cycle" teaching strategy developed by the Science Curriculum Improvement Study (SCIS) project in the United States, including three stages: preliminary exploration, concept introduction, and concept application [4]. However, with the research on science education, in the 1980s, BSCS added two more stages: Engagement and Evaluation, focusing on students' misconceptions before learning and the change of conception after learning. Elaboration is also called Transfer, with different names but the same essence. The Engagement refers to teachers attracting students' attention and learning interest through various meaningful activities, activating students' existing experience, and stimulating their desire and curiosity for learning, serving as an important foundation and prerequisite for the process of learning. The Exploration refers to students carrying out group cooperation and individual inquiry learning activities with the help of teachers based on the learning content, initially perceiving the learning content and constructing knowledge, which is a crucial part of the entire teaching process. Explanation means that through the exploration in the previous activity, students need to explain and display the exploration results, communicate and share with teachers and other classmates, exercising their language expression and logical thinking abilities. The Elaboration emphasizes innovation, requiring students to use what they have learned in this class to solve practical problems in life, deepen their understanding of knowledge, and construct a complete knowledge system. The Evaluation refers to using multiple evalu-

ation methods to evaluate and provide feedback on students' learning, such as peer evaluation, self-evaluation, or teacher evaluation. Monitoring students' learning outcomes, methods, attitudes, etc., through evaluation not only helps students understand their own learning status to improve learning effects but also enables teachers to control the teaching pace.

As the framework of language, grammar is the core of language learning and the key to expressing meanings and conveying ideas, determining the clarity and coherence of language. The 2022 Compulsory Education Curriculum Standards clearly puts forward the learning requirements for grammar content, from perceiving and experiencing grammar at the first level to using grammatical knowledge for description, narration, and explanation at the third level [2]. This reflects the importance and necessity of grammar in language learning. Grammar teaching is not simply about teaching grammatical rules; meaning and usage are equally important focuses of grammar teaching. It is necessary to combine form, meaning, and usage to truly enable students to master and apply grammar. However, grammar teaching has always been a difficulty for both teachers and students. Grammar teaching tends to focus on explaining rule forms while ignoring the meaning and usage of grammar.

The attributive clause is one of the three major types of clauses in English. A sentence that acts as an attribute in a sentence is called an attributive clause, used to modify a noun or pronoun, divided into restrictive attributive clauses and non-restrictive attributive clauses, and is an important part of junior high school English grammar. It is generally systematically presented and learned in the ninth-grade textbook, but language knowledge related to attributive clauses is also encountered in the seventh to eighth grades. The teaching of attributive clauses in junior high school under the 5E teaching model focuses on students' perception, understanding, experience, and application, emphasizing the teaching of grammatical form, meaning, and usage.

2. Theoretical Foundation of the 5E Teaching Model

The constructivist learning theory is one of the core theories of the 5E teaching model, emphasizing a student-centered approach where teachers play the role of facilitators, organizers, and initiators in the entire teaching environment, and students actively use various methods to construct the knowledge they are learning [5]. The views of constructivist learning theory mainly include the learning view, knowledge view, and teaching view. The constructivist learning view argues that learning is not simply a passive acceptance of information but an active construction of knowledge. The construction process cannot be replaced by others; learners need to process and encode new information based on their existing knowledge and experience, and transform and improve the original knowledge and experience. The constructivist knowledge view holds that knowledge is an understanding and hypothesis of the objective world. With the development of society, the understanding and compre-

hension of knowledge are also undergoing new changes. In the learning process, learners should not regard knowledge as the only existing objective truth but should learn knowledge with an objective attitude, continuously examining, revising, or discarding the newly acquired knowledge. The constructivist teaching view believes that teaching should construct new knowledge starting from students' original experience, focusing on using students' original experience to acquire new knowledge. Teachers are not transmitters of knowledge but guides, collaborators, and organizers in the learning process, respecting learners' dominant position in learning and developing learners' autonomous, initiative, and creative ability.

3. Junior High School Grammar Teaching under the 5E Teaching Model: Taking Attributive Clauses as an Example

The teaching content is selected from Unit 9 I like music that I can dance to. Section A Grammar Focus-4c of the People's Education Edition Grade 9 textbook. Through previous learning, students have mastered some vocabulary related to music and movies and have initially perceived and experienced attributive clauses guided by that, which, and who. However, students do not have an in-depth understanding and induction of the structure, meaning, and usage of attributive clauses. Therefore, this lesson requires students to master the meaning and function of attributive clauses and be able to use attributive clauses guided by which, who, and that to express their favorite music and movies. The specific teaching design process for attributive clause teaching based on the 5E teaching model is as follows:

3.1. Engagement: Contextual Stimulation and Interest Activation

Teaching Activity (Activity 1: Lead-in)

(1) Audiovisual Introduction:

- The teacher plays the upbeat song She (MV) and instructs students to listen while observing the lyrics subtitles.
- Task: Circle sentences describing character traits (e.g., "She's got a smile that it seems to me...").

(2) Interactive Q&A:

- After playback, the teacher asks:
"Which lyrics impressed you? How do these sentences describe 'she'?"
- 3-4 students are invited to share answers, with key sentences written on the board.

(3) Suspense Creation:

a) The teacher displays two contrasting images:

Image 1: A plain portrait photo.

Image 2: A poster with attributive clause descriptions added.

b) Question: "Which style makes the character more vivid? Today, we' ll learn to craft such dynamic sentences in English."

Purpose of teaching activity:

1. Multimodal stimulation (music + visuals) sparks sensory interest, reducing anxiety about grammar learning.
2. Uses lyrics containing attributive clauses to guide initial awareness of the grammar structure, bridging prior and new knowledge.

Evaluation of Effectiveness:

3. Monitor student engagement (e.g., lyric annotation, responses) .
4. Observe whether students can identify descriptive clauses through random questioning and evaluate the effectiveness of their prior knowledge activation.

3.2. Exploration: Task-Driven, Collaborative Discovery

Teaching Activity (Activity 2: Find out similarity)

1. Group Discussion

- Task: "Share your favorite music in English and explain why you like it (e.g., artist, melody, lyrics). Each group must record at least 3 sentences."
- Students work in 4-member groups with sentence scaffolds:
"I like... because...; The music that... is..."

2. Sentence Collection

- Group representatives share results. Teacher categorizes exemplary sentences on the board:
 - Describing artists: "The singer who writes his own songs is my idol."
 - Describing melodies: "The music that has a fast beat makes me excited."

3. Comparative Analysis

- Teacher guides students to observe sentences on the blackboard and asks:
"What common structure do these sentences contain? What function do the underlined parts serve?"
- Students attempt to explain in Chinese/English.

4. Table Organization

- Distribute "Grammar Structure Observation Sheets" for students to analyze:
 - Sentence components (subject, predicate, underlined its function)
- Groups present completed sheets.

Purpose of teaching activity:

1. Uses authentic communication tasks to improve grammar awareness ("learning by doing").
2. Develops autonomous discovery of grammar rules through comparative analysis and visual tools, enhancing observation and inductive skills.

Evaluation of Effectiveness:

3. Monitors group engagement and sentence output to assess language application.
4. Evaluates through sheet completion whether students can identify basic attributive clause structure:

"antecedent + relative pronoun + clause"

3.3. Explanation: Precise Refinement and Deepened Understanding

Teaching Activity (Activity 3: Learn Attributive Clause)

1. Student Presentations

- Randomly select 2-3 groups to share their Grammar Structure Observation Sheet findings.
- Teacher records key terms on a mind map (e.g., "modifies nouns," "relative pronouns," "clause").

2. Concept Explanation

- Based on student discoveries, systematically explain:
 - Definition of attributive clauses
 - Structure: antecedent + relative pronoun/adverb + clause
 - Function: modification and restriction
- Use Microsoft to visually demonstrate sentence deconstruction/reconstruction.

3. Rule Induction

- Collaboratively summarize usage contexts for relative pronouns (who/that/which).
- Compare example sentences:
 - "The boy who is wearing a hat is my brother."
 - "The book that I bought yesterday is interesting."
- Emphasize how antecedent type (person/thing) determines pronoun choice.

4. Error Prevention

- Display common mistakes (e.g., "The girl which is singing is my friend.").
- Guide students to correct errors and justify their reasoning.

Purpose of teaching activity:

1. Based on student discoveries to deliver structured knowledge, reinforcing autonomous learning achievements.
2. Enhances accurate rule acquisition through comparative analysis and error identification, preventing common mistakes.

Evaluation of Effectiveness:

1. Assess comprehension of clause definition/structure/pronoun usage via question.
2. Evaluate knowledge internalization by monitoring:
 - Participation in error-correction
 - Response accuracy

3.4. Elaboration: Application and Ability Expansion

Teaching Activity (Activity 4: Writing a Short Passage)

1. Situational Task: The teacher creates a "Campus Music Recommendation" scenario, requiring students to write a short passage recommending their favorite

music. The passage must include at least 3 attributive clauses and use the relative words learned in class. A writing framework is provided:

- Introduction: Briefly introduce the music genre.
 - Body: Describe the singer, melody, and lyrics using attributive clauses.
 - Conclusion: Summarize the reasons for liking the music.
2. Different Support: Provide vocabulary banks (catchy, energetic, meaningful lyrics) and sentence pattern (The song that... makes me...; The singer who... always...) for poor students; encourage advanced students to add metaphors and emotional descriptions.
 3. Writing Guidance: When students write independently, the teacher provides personalized guidance and reminds the whole class of typical issues (such as incorrect clause word order).

Purpose of teaching activity:

1. Promote students' transformation of grammatical knowledge into writing ability through real-life situational tasks, achieving knowledge transfer.
2. Meet the needs of students at different levels through different learning tasks, facilitating personalized learning.

Evaluation of Effectiveness:

1. Quantitatively assess using a composition scoring sheet (including three indicators: grammatical accuracy, content richness, and logical coherence).
2. Analyze the types of relative words and clause complexity used by students to judge the flexibility of grammatical application.

3.5. Evaluation: Multiple Evaluation and Reflective Enhancement

1. Self-evaluation (Activity 5: Self-editing)

- (1) Students revise their work against the Attributive Clause Writing Self-check List:
 - Check if relative words are used correctly (✓/×).
 - Check if clauses match antecedents reasonably (✓/×).
 - Check if sentences are smooth (✓/×).
- (2) Mark revisions with different colored pens and write 1 self-improvement suggestion at the end of the passage.

2. Peer Evaluation (Activity 6: Peer-editing)

- (1) Exchange compositions and provide scores and feedback based on the Peer Evaluation sheet:
 - Grammatical Accuracy (0-3 points)
 - Content Attractiveness (0-3 points)
 - Suggestions: _____
- (2) Each group selects 1 excellent composition for the author to read aloud, and the whole class appreciates the wonderful usage of attributive clauses together.

3. Teacher Feedback

- (3) Select 2 representative compositions (excellent examples and typical errors), annotate and explain them through display, emphasizing common problems and improvement directions.
- (4) Publish the Attributive Clause Writing Excellence List and award personalized prizes such as "Best Grammar Application Award" and "Most Creative Award".

Purpose of teaching activity:

1. Construct a complete feedback system through three-level evaluation (self-evaluation → peer evaluation → teacher evaluation) to cultivate students' metacognitive abilities.
2. Recognize excellent works, set learning models, and strengthen positive learning motivation.

Evaluation of Effectiveness:

3. Analyze data from self-check and peer evaluation sheet, count high-frequency error types, and adjust subsequent teaching focuses.
4. Evaluate the achievement of teaching objectives through the quality of students' revised compositions.

4. Strategic Suggestions for Applying 5E Teaching Model in Junior High School Attributive Clause Teaching

4.1. Follow the Compulsory Education English Curriculum Standards (2022 Edition) and Implement the Latest Teaching philosophy

As a programmatic document for education and teaching, the Compulsory Education English Curriculum Standards is proposed based on the needs of the social development and demands with students' growth, pointing out the direction for teaching. In the teaching practice, teachers need to carefully read the specific contents of the curriculum standards, analyze their connotations, grasp the core points, clarify the logical relationships of each part, and organically integrate them into classroom teaching. In junior high school attributive clause teaching, teachers should fully implement the new philosophy and standard requirements advocated by the Compulsory Education English Curriculum Standards. The Compulsory Education English Curriculum Standards clearly states that in grammar teaching, a three-dimensional dynamic grammar view should be upheld, and teaching should be carried out by considering the three dimensions of grammar: form, meaning, and use [2]. This requires teachers to follow the path of "form perception → meaning understanding → practical application" in attributive clause teaching: firstly, guide students to pay attention to the form of attributive clauses, then deeply understand its meanings, and finally let students use attributive clauses in practical activities, achieving the transformation from knowledge understanding to ability and effectively improving grammatical application abilities.

4.2. Optimize Teaching Stages and Ensure Complete and Coherent Teaching Processes

The 5E teaching model constructs a complete teaching with five core stages: "Engagement, Exploration, Explanation, Elaboration, Evaluation". Each stage progresses step by step and is interrelated, where the previous stage builds a cognitive ladder for subsequent learning, and the latter stage deepens and expands the achievements of the previous one. In the grammar teaching practice of junior high school attributive clauses, teachers need to accurately grasp the functional positioning and coherence of each stage to give full play to the model's effectiveness. In the Engagement stage of junior high school attributive clause grammar teaching, the goal is to attract students' attention, adjust their learning state, and clarify that the core focus of this lesson is attributive clauses. It requires students to independently explore the form and meaning of attributive clauses, through which they will master attributive clauses more firmly and understand them more deeply. The Explanation stage means that the teacher supplements and improves students' grammatical knowledge system based on their understanding. Through the study of the above three stages, students have basically mastered the form and meaning of attributive clauses. Then, the Elaboration stage is designed to enable students to use attributive clauses in real contexts, improving their comprehensive language application abilities. The purpose of the Evaluation is to detect students' mastery of attributive clauses through evaluation results and provide a basis for subsequent teaching adjustments, forming a closed loop of "teaching - learning - evaluation", effectively ensuring the achievement of teaching objectives. Therefore, when teaching attributive clauses, teachers need to clarify the role of each stage, effectively assess students' learning effects in each stage, and adjust timely according to students' learning feedback, reflecting the positive role of teaching-learning-evaluation integration in grammar teaching.

4.3. Innovate Teaching Activity Forms and Implement Core Competency Cultivation Goals

The Compulsory Education English Curriculum Standards emphasizes that teaching practice should be designed under the English learning activity view, take themes as the guide and discourse as the carrier, and promote the development of students' core competencies through various activities such as learning and understanding, application and practice, and transfer and innovation [2]. When carrying out junior high school attributive clause teaching under the framework of the 5E teaching model, teachers need to design various learning activities and activate the classroom atmosphere with diversified and progressive learning activities.

In the Engagement stage, teachers can use multimedia resources to create real contexts, introduce them through English movie clips, life scene pictures, or interesting short videos, and guide students to initially perceive the structure and function of

attributive clauses in situational experiences, stimulating their learning interest. In the Exploration stage, teachers need to design activities such as comparative analysis, sentence disassembly and recombination, and group cooperative inquiry, encouraging students to independently discover the formal features of attributive clauses (such as the usage rules of relative words) and semantic logic (such as modifying and limiting functions) through observation, discussion, and induction, achieving the change from perceptual to rational understanding. As a key stage for transforming knowledge into ability, the Elaboration stage can design practical activities such as simulated interviews, theme speeches, and creative writing around real life. For example, carry out role-playing with the theme of "Campus Talent Show", requiring students to describe the specialties of their classmates using attributive clauses; or strengthen the flexible application of grammatical knowledge in discourse creation by writing travel guides. The Evaluation stage can design "Grammar Detective" peer evaluation activities, allowing students to correct sentences for each other, deepen their understanding in the process of error correction, and accurately assess learning effects through teachers' immediate feedback, providing a basis for subsequent teaching adjustments. By deeply integrating the English learning activity view with the 5E teaching model, activities in each stage not only maintain goal consistency but also reflect hierarchical progress, enabling students to truly achieve the leap from knowledge mastery to ability transfer in the process of "learning by doing, learning by using, and learning by creating", and implementing the cultivation goals of English core competencies.

4.4. Construct a Diverse Evaluation System and Strengthen the Guiding and Motivational Functions of Evaluation

The "evaluation" in the concept of teaching-learning-evaluation integration is essentially highly consistent with the "Evaluation stage" in the 5E teaching model, both taking "promoting learning" as the core goal. Evaluation is not a summary of teaching but should be through the entire teaching process. Through instant feedback, a circle of "evaluation - feedback - adjustment" is formed. For example, in the Exploration stage, when teachers find that students have logical problem (such as being unable to accurately distinguish the syntactic functions of relative pronouns and relative adverbs) in independently summarizing the structure of attributive clauses through classroom observation or instant questioning, they can immediately adjust the difficulty of the exploration task, provide "fill-in-the-blank" guidance tables or example comparison scaffolds, help students reduce cognitive load, and rebuild exploration confidence. In the language expression activities of the Elaboration stage, if it is found that some students have problems such as inaccurate pronunciation of relative words (such as confusing "which" and "what") or stiff intonation, teachers can carry out targeted training through one-on-one pronunciation demonstration and group mutual assistance correction, combined with instant affirmative evalua-

tion (such as "Your sentence structure is very accurate, and it will be more authentic if you pay attention to the tongue-biting sound of 'which'"), which not only strengthens correct expression but also stimulates learning motivation, effectively playing the guiding and motivational roles of evaluation. In addition, the subject of evaluation should be diverse. In addition to teachers' professional evaluation, teachers need to fully mobilize students' self-evaluation and peer evaluation abilities. Through this multi-subject evaluation, it not only conforms to students' cognitive development rules but also can achieve the goal of "promoting learning and teaching through evaluation".

4.5. Put Students on the Dominant Position and Implement Differentiated Teaching Strategies

The concept of "taking students as the learning subject" has become the core orientation of classroom teaching. Teachers are no longer unidirectional instructor of knowledge but actively guide students to become the masters of the classroom. However, it cannot be ignored that each student is a unique individual, showing huge differences in cognitive styles, learning strategies, and learning attitudes. In order to achieve efficient teaching, teachers need to understand the learning differences and adopt differentiated teaching according to students' individual differences. In junior high school attributive clause teaching, it is complex and, often makes troubles for students. For students good at logical deduction, teachers can provide a formulaic analysis framework for attributive clauses, guide them to understand the usage rules of relative pronouns and relative adverbs by disassembling sentence components, and set up sentence pattern conversion exercises with different difficulty, allowing them to deepen their cognition in logical reasoning; for students who prefer situational learning, vivid story scenes can be created, integrating attributive clauses into interesting dialogues, movie clips, or news reports, so that they can feel the practical application of grammar in specific contexts and strengthen language output through role-playing, situational retelling, and other activities; for students with passive learning attitudes, teachers should adopt a more kind and encouraging teaching method, start with basic example sentences, and use forms such as group cooperation and game competitions to lower the learning difficulty, gradually cultivating their learning confidence and enthusiasm. In addition, differentiated strategies are equally indispensable in homework assignment and evaluation stage. Design different homework, set up tasks with different difficulty levels such as basic consolidation, ability improvement, and expansion innovation, allow students to independently choose according to their own levels, so that each student can find a suitable pace in learning attributive clauses and achieve personalized growth.

5. Conclusion

In summary, when applying the 5E teaching model in junior high school grammar,

teachers need to follow the Compulsory Education English Curriculum Standards, implement the latest educational philosophy, optimize each stage of the 5E teaching model, ensure the completeness and coherence of teaching, pay attention to students' individual differences, design various innovative activities to stimulate students' learning interest and autonomous learning ability, guide students to carry out independent inquiry, and implement diversified evaluation to promote students' all-round development, so as to carry out junior high school grammar teaching with high quality, improve the effectiveness of junior high school grammar teaching, help students achieve the goal of core competencies, and enhance the effectiveness and interest of grammar classrooms.

Reference

- [1] Ministry of Education of the People's Republic of China. English Curriculum Standards for Senior High Schools (2017 Edition, Revised in 2020)[M].Beijing: People's education press, 2020:77.
- [2] Ministry of Education of the People's Republic of China.English Curriculum Standards for Compulsory Education (2022 Edition)[M].Beijing: Beijing Normal University Publishing House, 2022.
- [3] Wang, J. Li, x. The connotation of 5E teaching mode and its enlightenment to science education in China[J].Bulletin of Biology,2012,47(03):39-42.
- [4] Hu, J. Gao, C. Analysis of the teaching practice of 5E teaching mode in China and its research progress abroad[J].Chinese Journal of Chemical Education,2017,38(01):5-9.
- [5] Wu,x. On the Enlightenment of Constructivism Theory to English Teaching[J].Foreign Languages and Their Teaching,2006,(02):33-35.
- [6] Li J .Application Study of 5E Teaching Mode in Junior High School English Reading Teaching[J].World Education Forum,2024,2(4):
- [7] Wang M ,Wei R .Integrating Teaching-Learning-Assessment in English Reading Teaching of Chinese Junior High School Based on Backward Design[J].International Journal of New Developments in Education,2025,7(3):
- [8] Rui L .Research on the Construction of the “ Integration of Teaching-Learning-Evaluation” in Senior High School English Classrooms[J].Frontiers in Educational Research,2024,7(11):