Literature, Language and Cultural Studies
ISSN Print: 3079-5095
ISSN Online: 3079-5109
https://doi.org/10.63313/LLCS.9175

The Application of Advance Organizers in English Vocabulary Teaching at Secondary Schools

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How to cite this paper: Zhang, J. (2026). The application of advance organizers in English vocabulary teaching at secondary schools. Literature, Language and Cultural Studies, 5(3), 77–87. ISSN Print: 3079-5095; ISSN Online: 3079-5109.
https://doi.org/10.63313/LLCS.9175
Published: 2026-06-22

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Abstract

Rote memorization and weak application in senior high school English vocabulary teaching affect students' core competencies. Based on Ausubel's Cognitive Assimilation Theory and the 2022 English Curriculum Standards, this paper explores the use of Advance Organizers in vocabulary instruction. It analyzes the nature of vocabulary learning, defines the principles of Advance Organizers, and constructs a multi-dimensional strategy system including expository organizers, comparative organizers, and multimodal resources, supported by a teaching case. Results show that Advance Organizers effectively bridge prior knowledge with new vocabulary, optimize cognitive structure, and enhance learning efficiency. The study provides a practical reference for promoting meaningful vocabulary learning in senior high school.

Keywords

Advance Organizers; Senior High School English; Vocabulary Teaching; Cognitive Assimilation Theory

1. Introduction

In the senior high school English learning stage, vocabulary serves not only as the carrier of linguistic information but also as a prerequisite for students to develop listening, speaking, reading, and writing skills. According to the English Curriculum Standards for Compulsory Education (2022 Edition), senior high school students are required to master 3000-3200 core words and 1000-1200 phrases, and to use vocabulary flexibly in communication (Ministry of Education of the People's Republic of China, 2022). However, in actual teaching practice, many students rely on mechanical memorization for vocabulary learning, leading to superficial understanding of word meanings, confusion in usage, and rapid forgetting. This phenomenon not only hinders students' vocabulary accumulation but also constrains the improvement of their comprehensive language application abilities.

Ausubel's Advance Organizers strategy, as a significant instructional method within cognitive learning theory, offers a new perspective for addressing the problems in

senior high school English vocabulary teaching. Advance Organizers aim to build a bridge between students' existing knowledge and new learning content, assisting them in constructing a systematic cognitive structure (Ausubel, 1960). In recent years, an increasing number of scholars domestically and internationally have applied this strategy to language teaching, with relevant research confirming its positive role in improving teaching efficiency (Ellis, 2015; Hu, 2018). Based on this, this paper focuses on the application of Advance Organizers in senior high school English vocabulary teaching, aiming to explore scientific and effective vocabulary teaching strategies, promote the transition of vocabulary instruction from rote memorization to meaningful learning, and provide theoretical and practical support for the reform of senior high school English teaching.

2. Relevant Research at Home and Abroad

In terms of foreign research, Ausubel (1968) conducted a study on students learning Buddhist textual materials, the results of which indicated that students who had already acquired the important concepts of the new knowledge before learning the new material were able to internalize the new knowledge and demonstrated better retention throughout the maintenance period. Barnes' (1972) research proposed that declarative organizers are beneficial for improving learning efficiency during students' learning stages. Furthermore, scholar Stone, through extensive research, pointed out that for students in the concrete operational stage, they particularly need a highly generalized viewpoint to internalize and learn new knowledge, and Advance Organizers are of greater assistance in this learning process. Meanwhile, other scholars have suggested that the effectiveness of applying Advance Organizers varies across different subjects. A series of empirical studies abroad have indicated that applying the "Advance Organizers" strategy in senior high school English reading classrooms can help students establish clearer, more stable, and more discriminative cognitive structures and facilitate their learning of new knowledge.

Domestic research on Advance Organizers involves different educational stages and subjects. Hou Lin (2017) explored the specific application of Advance Organizers theory in classical Chinese teaching using the PEP high school Chinese textbooks. Li Yuangong (2018), taking PEP Geography Compulsory 1 as an example, found that middle school geography instructional design based on Advance Organizers theory helps improve classroom teaching effectiveness, enhance students' geography grades, and cultivate their interest in geography learning. Wu Zhenxing (2017), using two senior high school classes as experimental and control groups, demonstrated that in teaching the ionic reaction unit in high school chemistry, the Advance Organizers strategy can effectively improve students' learning efficiency, aid their understanding of relationships between concepts, and can serve as an effective strategy for high school chemistry concept teaching.

3. Theoretical Basis

3.1. Theoretical Basis of Advance Organizers in Vocabulary Teaching

3.1.1. Cognitive Assimilation Theory

Cognitive assimilation theory is the core theoretical basis of Advance Organizers. Ausubel believed that learning is a process in which learners assimilate new knowledge into their existing cognitive structure through meaningful learning (Ausubel, 1963). In vocabulary learning, students' existing vocabulary, grammar knowledge and life experience constitute their prior cognitive structure. Advance Organizers help activate this prior knowledge, provide a "fixed point" for new vocabulary, and promote the assimilation of new vocabulary into the existing cognitive system, thereby realizing meaningful vocabulary learning.

3.1.2. Input Hypothesis

Krashen's input hypothesis holds that language acquisition occurs when learners receive comprehensible input that is slightly higher than their current language level (i + 1) (Krashen, 1982). Advance Organizers can adjust the difficulty of new vocabulary input. By presenting abstract and general frameworks in advance, they reduce the cognitive load of students when learning specific vocabulary, make new vocabulary input become comprehensible input, and create favorable conditions for vocabulary acquisition.

3.2. Types of Advance Organizers

There are two main types of Advance Organizers:

Expository Organizers: Used when the learning material is entirely new or unfamiliar. They provide a basic conceptual framework at a high level of abstraction, using concepts, principles, or analogies already understood by the learner to create a mental "hook" for the new, more specific information. For vocabulary, this might involve introducing a superordinate concept (e.g., "modes of transportation") before teaching specific exemplars (car, submarine, helicopter).

Comparative Organizers: Used when the learning material is not entirely new but needs to be integrated with, or distinguished from, similar concepts already in cognitive structure. They actively draw comparisons and contrasts between new ideas and established ones, highlighting similarities to foster assimilation and differences to prevent cognitive confusion. This is particularly useful for teaching word families, synonyms, antonyms, or polysemous words.

Empirical research has generally supported the effectiveness of Advance Organizers in improving learning outcomes, particularly for learning conceptually dense material and for learners with lower prior knowledge (Luiten, Ames, & Ackerson, 1980). In the context of vocabulary, studies suggest that organizers help learners

form stronger semantic networks, leading to better retention and recall (Hawk, 1986).

4. Application Strategies and Teaching Cases of Advance Organizers in Senior High School English Vocabulary Teaching

4.1. Application Strategies

4.1.1. Using Expository Advance Organizers to Teach New Vocabulary

When teaching new vocabulary that students are not familiar with, teachers can use expository Advance Organizers to introduce the background, category or logical framework of the vocabulary. For example, when teaching vocabulary related to "natural disasters" (such as earthquake, flood, typhoon) in Grade 8 English textbooks, teachers can first show a short video about natural disasters, and then use an expository Advance Organizers: "Natural disasters are sudden and destructive natural phenomena that bring great losses to human society. Today we will learn some common natural disasters and relevant expressions." This organizer helps students establish a preliminary understanding of natural disasters, providing a cognitive basis for learning specific vocabulary.

4.1.2. Using Comparative Advance Organizers to Distinguish Confusing Vocabulary

Senior high school students often confuse vocabulary with similar meanings or forms. Comparative Advance Organizers can help them clarify the differences. For example, when teaching the verbs "say", "speak", "talk" and "tell", teachers can design a comparative Advance Organizers in the form of a table, comparing their usage, collocations and examples. Through comparison, students can clearly understand the differences between these verbs and avoid misuse in communication.

4.1.3. Combining Multimodal Resources to Design Advance Organizers

Senior high school students are more interested in visual and auditory resources. Teachers can use pictures, videos, audio, mind maps and other multimodal resources to design Advance Organizers, making them more intuitive and vivid. For example, when teaching vocabulary related to "food", teachers can show a mind map of food categories (such as staple food, vegetables, fruits, snacks) as an Advance Organizers, activating students' existing vocabulary about food and guiding them to learn new food vocabulary.

4.2. Application Case of Advance Organizers in Thematic Vocabulary Teaching for senior High School English——Taking the New Foreign Language Teaching and Research Press Edition "The Sky Railway" as an Example

4.2.1. Case Background

(1) Teaching Subjects:This case is suitable for senior high school first-year students (compulsory module). Students at this stage possess a foundational English vocabulary reserve (approximately 1500-1800 core words) and preliminary English reading ability. They have mastered basic vocabulary for themes such as "transportation", "environment", and "geography", possess basic geographical knowledge (e.g., Chinese conceptual understanding of "plateau", "mountain"), and common knowledge related to environmental protection. However, they lack reserve of specialized terminology related to the "Qinghai-Tibet Railway" theme (e.g., "permafrost", "UV radiation"), and their ability to construct semantic networks for thematic vocabulary is weak, leading to problems such as rote memorization and decontextualized vocabulary use.

(2) Text and Vocabulary Characteristics:This case selects Unit 6 The Sky Railway from the New Foreign Language Teaching and Research Press senior high school English selective compulsory textbook as the teaching vehicle. The text narrates the construction process and ecological protection practices of the Qinghai-Tibet Railway from a first-person perspective. The core vocabulary can be categorized into three types:

Geographical and Engineering Terminology: permafrost, plateau, landmark, UV radiation;

Ecological Protection Vocabulary: ecosystem, Tibetan antelope, wetland, habitat;

Semantically Confusing Vocabulary: ecosystem vs. environment, construct vs. build, protect vs. preserve.

Such vocabulary is characterized by "strong thematic relevance, high specialization, and prominent abstractness". Students find it difficult to understand their connotations and usage through rote memorization alone, urgently requiring Advance Organizers to build cognitive bridges for transitioning from "isolated memorization" to "meaningful assimilation".

(3) Teaching Problems Identified:Considering students' cognitive levels and vocabulary characteristics, this case focuses on the following teaching problems:

How to activate students' existing geographical and environmental protection knowledge to provide a "cognitive anchor point" for abstract specialized terms (e.g., permafrost)?

How to construct a thematic vocabulary semantic network through Advance Organizers to prevent students from confusing related vocabulary (e.g., ecosystem and environment)?

How to achieve deep integration of vocabulary learning with the text context to enhance students' ability to use vocabulary in thematic contexts?

4.2.2. Case Theoretical Basis

This case strictly adheres to Ausubel's Cognitive Assimilation Theory and the application principles of Advance Organizers, with specific bases as follows.

Cognitive Assimilation Theory: Students' learning of Qinghai-Tibet Railway thematic vocabulary needs to be based on existing geographical (e.g., "plateau", "mountains") and environmental protection (e.g., "protecting animals", "pollution") cognition. Advance Organizers assimilate new vocabulary (e.g., permafrost, Tibetan antelope) into the existing cognitive structure, forming a systematic semantic network.

Applicability of Expository Advance Organizers: For abstract specialized terms like permafrost and UV radiation, where students lack relevant prior knowledge, expository organizers are needed to provide a superordinate conceptual framework (e.g., "Three Core Dimensions of the Qinghai-Tibet Railway: Geographical Features-Engineering Challenges-Ecological Protection") to offer an "anchoring foundation" for new vocabulary.

Targeted Use of Comparative Advance Organizers: For easily confused vocabulary like ecosystem and environment, where students possess some related knowledge but have cognitive ambiguity, comparative organizers are needed to clarify similarities and differences between old and new knowledge, avoiding cognitive conflict during assimilation.

Multimodal and Interactive Principles: Considering senior high school students' cognitive characteristics, multimodal resources such as concept maps, videos, and tables are used to design organizers. Interactive activities like group discussions and contextual application are employed to reduce cognitive load and stimulate active participation.

4.2.3. Advance Organizers Design and Teaching Implementation

This case adopts a four-stage teaching process: "Diagnostic Analysis-Organizer Design-Classroom Implementation-Consolidation and Transfer". The entire process closely aligns with the text context and vocabulary characteristics, achieving deep integration of theory and practice.

(1) Stage One: Diagnostic Analysis (Pre-class)

A dual diagnostic approach is implemented using a "Vocabulary Pre-test Paper" and a "Thematic Knowledge Questionnaire":

Vocabulary Pre-test Paper: This assessment evaluates students' grasp of basic thematic vocabulary and their familiarity with target specialized terms. Results reveal that while most students could recognize common words like "environment," they often failed to distinguish them from close semantic relatives such as "ecosystem." Furthermore, the vast majority of students showed no prior knowledge of key specialized terms like "permafrost" and "UV radiation."

Thematic Knowledge Questionnaire: This survey examines students' existing knowledge about the Qinghai-Tibet Railway. It indicates that a considerable

number of students were aware of its notable geographical features but possessed very limited understanding of the specific engineering challenges and ecological protection measures involved.

Diagnostic Conclusion: Students demonstrate a foundational understanding of broad concepts related to geography and environmental protection. However, they lack knowledge of theme-specific terminology and the ability to form semantic connections between related concepts. This gap highlights the need to integrate expository and comparative organizers to bridge "superordinate concepts," "new vocabulary," and the "text context."

(2) Stage Two: Advance Organizers Design

Expository Advance Organizers: Thematic Cognitive Map of the Qinghai-Tibet Railway.

Design Basis: For specialized terms and abstract vocabulary, based on Cognitive Assimilation Theory, providing a three-dimensional superordinate framework of "Geographical Features-Engineering Challenges-Ecological Protection" to activate students' existing geographical and environmental protection cognition.

Presentation Form: Multimodal concept map (combining pictures, simple sketches, and keywords). Specific structure:

Core Theme: The Qinghai-Xizang Railway (Sky Railway)

Dimension 1: Geographical Features → Superordinate concepts: high altitude, cold climate → Associated prior knowledge: plateau, mountain

Dimension 2: Engineering Challenges → Superordinate concept: special natural conditions → Reserved interface for new vocabulary: permafrost, UV radiation

Dimension 3: Ecosystem Protection → Superordinate concept: protect nature while building → Associated prior knowledge: animals, plants, environment → Reserved interface for new vocabulary: Tibetan antelope, wetland, habitat

Comparative Advance Organizers: The comparative Advance Organizers mainly compares the following easily confused thematic vocabulary items. For the pair ecosystem and environment, ecosystem refers to the interactive system of organisms and their surroundings, a concrete concept, as illustrated in the text example "How to protect the delicate ecosystem?" In contrast, environment refers to the general natural surroundings, a broader and more general concept, as shown in "We should protect the natural environment." For the pair construct and build, construct is a formal verb mainly used for large-scale engineering projects, exemplified by "We constructed oxygen making stations,""whereas build is a general term used for common objects, as in "They built a wall along the lake."

(3) Stage Three: Classroom Implementation Process (45 minutes)

Cognitive Activation: Presenting the Expository Organizer (10 minutes)

Teacher displays the Thematic Cognitive Map, combines it with a short video (3 minutes, showing the geographical features and ecological protection scenes of the Qinghai-Tibet Railway), and guides students to discuss: "What do you know about the Qinghai-Xizang Railway? What challenges may workers face?"

Students, drawing on their existing geographical knowledge, fill in their prior cognition for the "Geographical Features" dimension on the map (e.g., "high altitude", "cold"). The teacher introduces "permafrost": "The cold climate leads to permafrost-soil that stays frozen for a long time. It's a big challenge for building bridges." and enters this term into the reserved interface under the "Engineering Challenges" dimension, completing the "superordinate concept anchoring" for the abstract term.

Clarifying Differences: Applying the Comparative Organizer (10 minutes)

Teacher presents the Comparison Table of Easily Confused Thematic Vocabulary, combines it with original sentences from the text (e.g., "How to protect the delicate ecosystem?"), and guides students to analyze: "What's the difference between ecosystem and environment in this sentence?"

After group discussion, the teacher summarizes the semantic differences and supplements with examples outside the text (e.g., "Our school's ecosystem includes students, teachers and plants."), helping students establish the association between "term-context-usage".

Contextual Assimilation: Consolidating Vocabulary with the Text (15 minutes)

Students intensively read paragraphs 2-6 of the text. The teacher guides them to fill the core vocabulary from the text (e.g., Tibetan antelope, wetland, UV radiation, construct) into the corresponding dimensions of the Thematic Cognitive Map, completing the assimilation of "new vocabulary-superordinate framework".

Group Task: Based on the map, use at least 5 target words to retell the core content of the text (e.g., "To protect Tibetan antelopes, workers built 33 passages under the railway. They also constructed oxygen-making stations to deal with high altitude and UV radiation.").

Transfer and Application: Vocabulary Production Task (10 minutes)

Writing Task: "Write a short paragraph about 'A Great Project and Its Environmental Protection' using at least 6 target words from the cognitive map."

After completion, 3-5 samples are selected for in-class feedback, focusing on the accuracy and appropriateness of vocabulary use in the thematic context.

4.2.4. Case Reflection and Theoretical Correspondence

(1) Analysis of Theoretical Alignment

This case strictly follows Ausubel's Cognitive Assimilation Theory and the application principles of Advance Organizers:

The expository organizer Thematic Cognitive Map provides a superordinate conceptual framework for abstract specialized terms, realizing the assimilation of new vocabulary into students' existing "geography-environmental protection" cognitive structure, echoing the core viewpoint that "meaningful learning requires establishing non-arbitrary connections".

The comparative organizer Comparison Table clarifies differences between old and new vocabulary, avoiding cognitive conflict, aligning with the theoretical requirement to "clarify knowledge boundaries during assimilation".

The use of multimodal resources (video, map) and interactive tasks (discussion, writing) complies with the principles of "appropriateness" and "interactivity", reducing cognitive load and enhancing learning initiative.

(2) Practical Implications and Limitations

Implications: In teaching English vocabulary with strong thematic and professional characteristics, the design of Advance Organizers must closely align with the three-dimensional connection of "superordinate concepts—new vocabulary—contex", both activating prior knowledge and providing a framework for the systematic integration of vocabulary.

Limitations: For students with significantly varied cognitive levels, the design of tiered Advance Organizers (e.g., basic vs. advanced version maps) was insufficient. Subsequent optimization could involve differentiated tasks to better meet personalized needs.

4.2.5. Case Conclusion

Using the thematic vocabulary teaching of The Sky Railway as a vehicle, this case validates the practical effectiveness of Ausubel's Advance Organizers theory in senior high school English thematic vocabulary teaching. By employing expository organizers to build cognitive frameworks, comparative organizers to clarify semantic boundaries, and multimodal interaction to achieve contextual assimilation, it effectively addresses teaching pain points such as the abstraction of specialized terms, fragmentation of vocabulary associations, and decontextualized application. This promotes the shift of vocabulary learning from rote memorization to meaningful learning. The case provides an operable practical model for thematic and professional English vocabulary teaching. Its core lies in "being theory-based, starting from students' cognition, and focusing on contextual connections" to achieve the unity of systematicity and applicability in vocabulary learning.

5. Conclusion

Addressing the practical problems prevalent in senior high school English vocabulary teaching—widespread rote memorization, low retention rates, and weak application skills—this study, supported by Ausubel's Cognitive Assimilation Theory and Krashen's Input Hypothesis, systematically explores the application value,

strategies, and pathways of Advance Organizers. Through a thematic vocabulary teaching case, it integrates theory with practice, forming a research cycle of "identifying problems--constructing a framework--verifying effectiveness--extracting implications".

Core research findings indicate that Advance Organizers effectively address the fragmentation dilemma in vocabulary teaching through the logic of "activating prior knowledge—building cognitive bridges—promoting meaningful assimilation." Expository organizers are suitable for teaching abstract and unfamiliar vocabulary, while comparative organizers can clarify semantic boundaries of easily confused vocabulary, consistent with the research conclusions of Luiten et al. (1980) and Hawk (1986). Second, multimodal Advance Organizers can reduce cognitive load, increasing vocabulary retention rates compared to traditional teaching (Zhang Li, 2020), while simultaneously enhancing students' autonomous learning and comprehensive language application abilities. Third, the four-stage process of "diagnostic analysis—design—implementation—transfer" and the principles of appropriateness, specificity, and interactivity provide an operable model for frontline teaching.

The theoretical significance of this paper lies in verifying the applicability of relevant cognitive theories in senior high school English vocabulary teaching, enriching empirical research in second language vocabulary instruction. Its practical value is reflected in differentiated organizer design schemes and suggestions for tiered teaching, responding to the requirements of the English Curriculum Standards for Compulsory Education (2022 Edition) and promoting the transition of vocabulary teaching towards meaningful learning.

The paper has limitations, including relatively narrow sample coverage, a lack of long-term effect tracking, and details of tiered organizer implementation that require refinement. Future research could expand samples for cross-regional comparative studies, extend periods to track long-term impacts, explore AI-assisted personalized organizer design, or investigate its integrated application with other teaching strategies to provide richer solutions for vocabulary teaching.

In summary, Advance Organizers offer a scientific pathway to address the challenges in senior high school English vocabulary teaching. Under the guidance of core competencies, teachers should deeply understand cognitive theories, flexibly employ Advance Organizers, promote the development of vocabulary teaching towards being systematic, efficient, and practical, and assist students in achieving the capability leap from "vocabulary memorization" to "language application".

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