

AI MEDIATED VOCABULARY INSTRUCTION: A PEDAGOGICAL FRAMEWORK FOR UNDERGRADUATES

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ABSTRACT:

Learning vocabulary is crucial to English proficiency but it presents particular difficulties for many students across different academic fields. This paper explores how MagicSchool, an artificial intelligence-powered learning platform can improve the teaching and learning of specialized vocabulary and expressions for undergraduate students in diverse disciplines through engaging interactive activities in authentic contexts while providing immediate feedback. The paper suggests that AI can effectively complement conventional pedagogy to make vocabulary instruction more meaningful and successful for undergraduates pursuing different academic paths and career goals.

KEYWORDS: Artificial Intelligence, MagicSchool AI, English language teaching, vocabulary acquisition, AI-assisted framework

1. INTRODUCTION AND LITERATURE REVIEW

Vocabulary acquisition presents significant challenges in language instruction, particularly regarding the distinction between passive knowledge and active retrieval in spontaneous communication (Laufer and Paribakht 367–69). Research suggests that words acquired through definition-based learning often lack the emotional engagement and personal relevance necessary for durable retention (Pishghadam and Shayesteh 27–30). Comprehensive word knowledge encompasses far more than semantic understanding; it requires mastery of multiple dimensions, including pronunciation, orthography, grammatical patterns, and lexical collocations (Nation 54). The consolidation of vocabulary knowledge is contingent upon repeated exposure across diverse textual and auditory contexts, coupled with productive deployment in speaking and writing (Uchihara, Webb, and Yanagisawa 559–99). Hence, artificial intelligence technologies have emerged as tools capable of supporting language instruction by enabling educators to generate diverse learning materials and activities, including vocabulary lists, definitions, contextual exemplars, dialogues, narratives, assessments, and differentiated instructional resources.

Nevertheless, the integration of AI-generated materials into language curricula necessitates careful oversight and professional judgment by qualified educators. It is widely acknowledged that such technological mediation, when appropriately guided, may enhance the systematic development of vocabulary knowledge across its multiple dimensions. In this context, the paper explores MagicSchool AI-assisted approaches designed to promote students' development and practical use of English vocabulary.

2. MagicSchool AI-Assisted Framework for Teaching Vocabulary

2.1. Sensory Exploration (7 minutes)

First, the educator employs Multi-Sensory Exploration to introduce new vocabulary items.

Setup: The educator selects "Image Generator" from the tools menu, enters the vocabulary item—for example, "Perspicacious", specifies preferences in the Additional Criteria section, and then clicks "Generate". The MagicSchool AI platform produces the image accordingly.



Retrieve: The educator elicits student responses through targeted questions—for example, "What is she doing?"—prompting students to infer meaning from visual context.

The teacher follows the same procedure for other vocabulary items such as *Capricious*, *Iconoclast*, *Sanguine*, *Harbinger*, *Pellucid*, *Contumacious*.

Feedback: Students share observations such as "thinking deeply" or "considering an idea" based on the image.

Reflect: Students connect their visual observations to the vocabulary word's meaning, deepening comprehension through multi-sensory exploration.

2.2. Custom Vocabulary Practice Made Easy (7 minutes)

Setup: Later, the educator uses the “**Worksheet Generator**” tool by following these steps: First, selects the desired grade level, enters the prompt in the topic or title box to generate a concise definition and example sentences for each and finally, clicks on “Generate.” The tool produces a worksheet containing example sentences that the teacher can use as reference material for practice.

Example Sentences

The perspicacious critic recognized the film’s subtle themes and deeper meanings.

The perspicacious student asked thoughtful questions that demonstrated a keen understanding of the subject.

Student Inference: Students try to guess or infer the meaning of the words through usage sentences and form preliminary ideas about its definition.

Teacher Preparation: At this point, the teacher prepares a power point presentation to reinforce and clarify the vocabulary concept

2.3. AI-Mixed Media Pellucid Poster (7 minutes)

Setup: The educator clicks on the “**Visual Presentation**” option on the home page, requests it to generate a presentation. The tool generates visual slides including title, short definition, part of speech, pronunciation, origin, usage, quiz etc. for the targeted words. This AI assisted learning reinforces the targeted words accurately in the learners’ minds.

Perspicacious means having sharp insight and keen judgment

- Adjective: describes a person or mind
- Pronounced: per-spih-KAY-shus
- A perspicacious detective notices what others miss

Explicit instruction: The educator subsequently provides explicit instruction, defining the targeted words for instance *Perspicacious* as possessing astute or sharp mental insight, thereby anchoring the abstract terms to concrete visual and linguistic representations

Feedback: In order to maintain academic integrity, students are asked to generate original sentences in their note books.

Learning focus: It emphasizes rehearsal, feedback, and moderation to support student mastery of the designated target item.

2.4. Vocabulary in Action (7 minutes)

Setup: The instructor then generates a social story using MagicSchool AI tool- “**Social Stories**” feature, specifies the target grade level, and inputs vocabulary terms in the designated field along with the social context (situation, event, or activity). The system then processes this information and generates a contextually appropriate narrative that seamlessly integrates the provided vocabulary into a cohesive fictional account.

Focused reinforcement: It helps students grasp not just definitions but also how words function in context, supporting comprehension and usage simultaneously building social-emotional connections.

2.5. Words That Stick Through Melody (7 minutes)

Setup: The instructor, after which, generates a song using MagicSchool's AI platform, accessing the “**Educational Song Generator**” feature, enters the topic of the song, mentions the grade level, specifies the style, and provides custom instructions; the song is generated using the targeted vocabulary items.

Focused reinforcement: Songs not only build vocabulary through repetition and context but also reinforce pronunciation, rhythm, and intonation patterns and create emotional connections to content.

2.6. Rapid Fire AI

Quiz & Reflect (10 minutes)

Setup: After having practiced the targeted vocabulary sufficiently, varied activities are conducted to reinforce learning. The teacher selects “**Multiple choice Quiz/ Assessment**” tool, defines the grade level, specifies the number of questions, determines the number of answer options per question, identifies the content domain and specific topic, selects relevant educational standards for alignment and finally clicks on “Generate”. Teacher asks AI to generate a 10-item mixed quiz (fill-in-the-blank, sentence correction, match word→definition) of varied difficulty levels.

Play: Students complete the quiz individually on paper and submit their responses. Following submission, students request immediate feedback from an AI system by having the instructor input their responses and pose targeted questions, such as "Explain why the answer to question 3 is incorrect or correct in “**Exemplar & Non-Exemplar**” tool of MagicSchool AI Platform.

Reflect: While the whole class reviews tricky items; instructor emphasizes fine distinctions (e.g., capricious vs. contumacious).

Learning focus: Retrieval practice strengthens long-term retention when paired with focused feedback that addresses specific gaps in understanding.

2.7. Role-Play (12 minutes)

Subsequently, the teacher selects the "**Group Work Generator**" tool and requests for AI-generated tasks to reinforce targeted vocabulary. The system suggests varied activities. The teacher selects two.

i.Role Play Structure: Character Cards

Students create character cards, each embodying a single trait. They respond enthusiastically with examples such as:

"I'm an iconoclast—I question everything, especially outdated rules."

"I am capricious by nature; I can always change course."

ii.Vocabulary Application Scenarios

Students apply the targeted vocabulary in three contexts: planning a school event, solving a classroom problem, and deciding on a group project.

Feedback and Assessment

The role play is recorded. Following the activity, the instructor uses "**Writing Feedback**" tool to generate corrective feedback by prompting: "Are these sentences correct? Suggest a short fix if needed."

Example sentences for review:

The weather was capricious because it stayed sunny for three months without changing.

She is an iconoclast because she always follows every tradition exactly the same way.

It responds thus:

Feedback: Vocabulary Enhancement — Are These Sentences Correct?

Areas for Growth:

1. "capricious... stayed sunny for three months" — This uses the word incorrectly — Capricious means changeable/unpredictable — Revise so the weather changes suddenly and often.

2. "iconoclast... always follows every tradition" — This reverses the meaning — An iconoclast challenges or rejects traditions — Revise so the person questions or breaks with tradition.

Learning focus: Students will develop register awareness appropriate to authentic real-world contexts and using formative feedback from peers and AI tools to refine their communication.

3. CONCLUSION

MagicSchool AI platform stands apart as a comprehensive platform built specifically for educators, addressing the unique demands of teaching. MagicSchool is purpose-built for classroom work. Every feature from lesson planners to quiz generators understands educational context. It is teaching time reclaimed from administrative work, letting one focus on students rather than paperwork.

However, successful AI integration depends on teacher expertise, thoughtful prompt design, content verification, ethical implementation, and appropriate classroom practice.

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