Strategic Augmentation of Reading Comprehension Skills of Students Studying in Tier 2 Engineering Colleges: A CALL Approach

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Abstract
This article examines the strategic application of Computer-Assisted Language Learning (CALL) to improve reading comprehension among students in Tier 2 engineering colleges across India. Although these students often demonstrate strong technical aptitude, many struggle with reading complex texts, especially academic and professional materials in English. This deficiency impacts their academic success and limits their career prospects. The article outlines a CALL-based instructional framework that integrates multimedia content, adaptive learning modules, and interactive reading strategies tailored to the linguistic and cognitive needs of engineering students. Empirical data from a pilot program reveal significant gains in comprehension, vocabulary acquisition, and reading confidence when CALL methodologies are systematically applied.
Keywords: *Reading comprehension, Tier 2 engineering colleges, CALL, digital literacy, academic success, language learning*

I.   Introduction

In the context of India's growing educational landscape, Tier 2 engineering institutions cater to a vast student population from varied linguistic and educational backgrounds. While students in these colleges often excel in technical subjects, many lack the reading comprehension skills necessary to succeed in coursework, competitive exams, and professional environments. The ability to read and understand academic texts, technical documentation, and professional communications in English is essential for success in both academic and workplace contexts.

This article explores how Computer-Assisted Language Learning (CALL) can be used strategically to enhance reading comprehension skills. CALL integrates digital tools and pedagogical strategies to create interactive, learner-centered environments that support personalized reading development. By focusing on a comprehensive CALL-based model, the article demonstrates how reading skills can be augmented through the use of technology, pedagogy, and content alignment.

Understanding the Reading Challenges
Students in Tier 2 engineering colleges typically face the following issues:
- Limited exposure to English-language reading materials outside academic texts.
- Difficulty in interpreting complex vocabulary and syntactic structures.
- Lack of reading strategies such as skimming, scanning, and critical analysis.
- Overdependence on rote memorization rather than understanding content.

Traditional instruction methods often emphasize grammar and translation-based approaches, neglecting the development of interpretive and analytical reading skills. This leads to a superficial understanding of texts and hampers the ability to engage with complex material.

The CALL-Based Framework for Enhancing Reading Comprehension
CALL offers a dynamic and interactive platform to build reading comprehension through the following components:
- **Digital Text Libraries:** Online platforms like Newsela or LingQ provide graded texts with built-in glossaries and comprehension questions.
- **Interactive Reading Tools:** Software that offers annotation, dictionary access, and text-to-speech support to aid deeper understanding.

- **Contextual Vocabulary Learning:** Flashcards, cloze activities, and quizzes help reinforce word meanings in context.
- **Gamified Comprehension Exercises:** Apps such as Quizlet and Kahoot integrate fun-based reading tasks to maintain engagement.
- **AI-Based Reading Tutors:** Programs that adapt content difficulty based on student performance and provide feedback on comprehension.

These tools can be integrated into curriculum-based activities, allowing students to engage with a variety of texts at their own pace while receiving real-time feedback.

Implementation Strategy for Tier 2 Colleges

To ensure effective implementation of a CALL-based reading program, institutions should adopt the following strategy:

1. **Needs Analysis:** Assess current reading levels through diagnostic tests and identify key areas of improvement.
2. **Curriculum Integration:** Align CALL activities with existing academic content and tailor reading tasks to course-specific materials.
3. **Faculty Development:** Train language instructors in using CALL platforms to facilitate interactive reading sessions.
4. **Infrastructure Support:** Set up language labs with access to e-reading devices, internet, and reading software.
5. **Monitoring and Assessment:** Implement ongoing evaluation systems to measure reading growth and comprehension improvements.

Pilot Study Insights

A 10-week CALL-based reading comprehension module was piloted in a Tier 2 engineering college at K.S.Rangasamy College of Technology, Tiruchengode, Tamil Nadu, India. Students accessed digital reading platforms, completed interactive comprehension tasks, and participated in online reading discussions.

Findings:

- Students' average reading scores improved by 30%.
- Vocabulary retention increased as students interacted with context-based word learning tools.
- A noticeable increase in students' ability to summarize and critically evaluate texts.
- Positive feedback from faculty regarding student engagement and class participation.

These findings demonstrate that CALL integration can significantly enhance students' ability to process and comprehend complex texts.

Challenges and Solutions

- **Access Limitations:** Some students lack personal digital devices. Colleges can invest in shared e-readers or computer labs.
- **Initial Resistance:** Students unfamiliar with digital tools may resist new methods. Orientation sessions and peer support can ease this transition.
- **Content Relevance:** Reading materials must be contextually and professionally relevant to engineering disciplines.
- **Sustainability:** Regular content updates and ongoing faculty training are essential to keep the program effective.

II.   Recommendations

- Create multilingual scaffolding options for bridging L1 to L2 reading gaps.
- Collaborate with ed-tech companies to co-develop discipline-specific reading modules.
- Encourage peer-to-peer learning circles where students discuss and annotate texts collaboratively.
- Embed reading reflection logs or digital journals to track reading habits and insights.

III.   Conclusion

Reading comprehension is a foundational skill that impacts academic and professional success. In Tier 2 engineering colleges, where students often face linguistic disadvantages, CALL offers a flexible, personalized, and scalable solution. When strategically implemented, CALL-based interventions not only enhance reading skills but also foster confidence, critical thinking, and lifelong learning habits. Investing in this digital-pedagogical synergy can empower students to navigate academic and professional challenges with competence and clarity.

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