Enhancement of Academic Reading Comprehension Skills through Cognitive Academic Language Learning Approach (CALLA)

Shivani V[1], Tamilselvi A[2] and Meenakshi S[3]
[1]Ph.D Scholar, Thiagarajar College of Engineering, Madurai.
[2]Professor, Thiagarajar College of Engineering, Madurai.
[3]Ph.D Scholar, Thiagarajar College of Engineering, Madurai.
[1]vshivani@student.tce.edu [2]tamilselvi@tce.edu [3]smeenakshi1@student.tce.edu

Abstract— **Language skills are an integral part of quality education as it induces communication, creates comprehensibility of content and expedites knowledge acquisition. This requires students to actively involve in language learning, to meet the growing competent requirements of engineering education. Enhancing Reading competence is one of the crucial factors for achieving academic success. This paper examines the effectiveness of Cognitive Academic Language Learning Approach in enhancing the reading comprehension skills of first year Engineering students. Cognitive Language Learning Approach is an instructional student – centred approach designed around cognitive and metacognitive strategies, to enable easy comprehension of academic language content. A study was conducted in one of the leading government aided institutions in southern Tamil Nadu, to enhance the reading comprehension skills through the academic subject of Technical English. Data were collected using post-test experimental design, with control group and experimental group (20 each). The quantitative data were analysed using descriptive statistics while the qualitative data recorded the responses of student's perception on the efficacy of CALLA. The data analysis revealed in enhancement of reading comprehension skills, elevating the overall reading competency.**

Keywords— **Cognitive Academic Language Learning Approach; Explicit language instruction; Metacognitive strategies; Reading Comprehension skills Enhancement.**

JEET Category— **Practice.**

I. INTRODUCTION

Language skills play an expansive role in contemporary education, due to their impact on communication, and comprehensibility in achieving overall academic success. Proficient language skills help in precise, clear and confident communication. Academic achievement is majorly dependent on reading competency of students, from understanding texts to comprehending complex academic subjects. In contrast to classic stimulus-response learning theories, which emphasize passive learning, active involvement in learning is a distinguishing characteristic of human agency. Students as learners, play a key role in every aspect of their own learning, from selectively attending to incoming information to actively mapping the newly read information onto their existing knowledge schemata to applying the newly learned knowledge in both familiar and unfamiliar contexts to reflecting on the entire process and engaging in strategic learning behaviours (Gu, 2018). Reading also facilitates in development of skills beyond its direct implication, inclusive of critical thinking and analysis. This creates enhancement in cognitive skills, equipping students to understand different perspectives, analyse evidence, and form well-reasoned arguments. Extensive access to information content from books, articles to digitalised academic databases empowers them with adequate knowledge to conduct research and to arrive at well-rounded findings. Reading proficiency is much needed in today's globalised world for understanding different cultures and developing empathy for a macrocosmic understanding of the world we live in. Ultimately it paves way for perpetual growth.

Reading skill enhancement can be achieved only through student – centred approach than from the traditional approaches. Educationists and researchers have been developing methods for improving reading skills through ESL methods, based on the characteristics of language learners, their convenience and dynamic requirements in the contemporary educational scenario. There has been a wide range of strategies, theories and methodologies to approach reading skill enhancement through second language Acquisition, with regard to contextualisation, meaningful inputs, immersive language instruction, imitation and cognitive demand. etc.

Students from high school are expected to have an intermediate level of language proficiency, where they are equipped to communicate and write with certain level of fluency, but it becomes quite challenging for them to comprehend academic content in college. Collegiate level education entails additional level language demands and students are expected to master new terminology and concepts that may have only been briefly exposed in their earlier education. Reading involves deciphering written symbols,

understanding the meaning of words and phrases, drawing inferences, connecting ideas, and continually engaging in critical analysis. Reading is frequently a cognitive challenge, especially for complicated or new content, as it necessitates more concentrated attention and a deeper level of involvement with the text. Despite the complexity of the subject content, the increasing language demands might be one of the main barriers, preventing many students from achieving academic success. These difficulties can be attributed to students' lack of a good level of academic language and their need to apply various strategies in order to improve their academic reading achievement and do reading tasks successfully (Grabe & Stoller, 2004).

This transitional phase requires an effective language enhancement approach to help students comprehend academic language effectively and to apply the strategies in all the other subjects of curriculum. Reading skills can be effectively enhanced, if students acquire language naturally through meaningful grasp of language. They are also required to use English for reasoning, analysis as well as to interpret oral and written text. This requires students to use English as a 'medium of thought' using cognitive and metacognitive strategies to improve overall comprehensibility.

II. COGNITIVE ACADEMIC LEARNING APPROACH (CALLA)

The Cognitive Academic Language Learning Approach (CALLA) is an educational methodology created to boost Second language English learners' (ESL) academic skills. It can also be called as a model for improving the academic achievement of learners who are learning through the medium of a second language program with a blend of curriculum, language, and learning strategies. CALLA was designed to enhance all four skills inclusive of listening, reading, writing and speaking of Second Language Learners, but it can be effectively implemented focusing on one skill at a time. The model is based on cognitive learning theory in which learners are viewed as mentally active participants in the teaching learning interaction (Chamot & O'Malley, 1996). As a tool for the teacher to strengthen students' mental processes, CALLA also suggests activities that encourage reflection on one's own learning and the discovery of effective study techniques. CALLA comprises of three elements, The three interconnected elements are (a) Choosing Subject areas, (b) creation of academic language based on the content, and (c) explicit teaching of learning methodologies intended to improve both the content and the language (Gu, 2018b). This study focusses on enhancing reading comprehensibility through the academic content. The subject area is Technical English, with an intention to integrate the comprehension of content with language learning, through selected strategies.

III. ENHANCEMENT OF READING SKILLS THROUGH CALLA

There are five steps involved in implementation of the CALLA model: preparation, presentation, practice, evaluation, and expansion. In this approach, explicit instruction in applying strategies to learning tasks is gradually faded so that the students can begin to assume greater responsibility in selecting and applying suitable learning strategies (Cubukcu, 2008; Rasekh & Ranjbary, 2003). These strategies include advance organisers, graphic organisers, skimming and scanning, prior-knowledge connections, metacognition, critical analysis, vocabulary strategies, discussion, reflection and differentiated instruction. Reading demands higher cognitive thinking compared to speaking and listening as it involves decoding written symbols, comprehending the meaning of words and sentences, making inferences, connecting ideas, and often engaging in critical analysis. It has been argued that CALLA helps students to develop as independent and self-regulated learners through their increasing command over a variety of strategies which can be exploited for better learning that aims at the improvement of reading skills (Chamot &O'Malley, 1994; Chamot & Robbins, 2005). Incorporating CALLA strategies through explicit instruction help students who are actively reading academic books to learn new concepts and topics and to employ these tactics more effectively. Learning approach instruction is a cognitive method to education that aids students in developing procedures and conscious processes that promote understanding, acquisition, and retention of new knowledge and abilities (Chamot & O'Malley, 1987). In order to enhance their students' learning processes, teachers must engage in CALLA, significant practice during the practice stage and modelling during the teaching stage.

IV. PARTICIPANTS AND CONTEXT OF STUDY

The experiment was conducted to test the efficacy of CALLA in enhancing the reading competency of students in tier-1 Engineering College. The participants were 40 students from ECE stream. It consisted of two groups, experimental group and control group with 20 in each class. The academic subject focused was Technical English, with a focus on implementing CALLA in the skimming, scanning of short reading comprehension passages module. This course is offered as a part of the English curriculum to the first-year students, inclusive of all streams. The pre-requisites are basic reading comprehension skills, which is expected from all high school students, as they enter their under-graduation. Students participated from the age group of 18 and 19. They are also homogenous in terms of their (1) mother tongue (Tamil), (2) cultural background, and (3) the years of studying English as a second language (ESL) that is equivalent to 12 years in Tamil Nadu Schools.

V. DATA COLLECTION AND SAMPLING

In the current study, reading comprehension was used to collect quantitative data, and semi-structured focus group interviews were used to acquire qualitative data. Effectiveness was assessed based on the marks obtained in post-test after two-week implementation of the CALLA model. A panel of five Ph.D faculties measured, assessed and provided their comments on the quality, relevancy and reliability of the content and questions. Some modifications were made according to their

comments and the, post-test reading comprehension questions after implementation of CALLA, was altered accordingly. The same passage was used in both post-tests conducted in experimental and control group. The experimental group required the students to use CALLA strategies to comprehend the given reading passage. The content was from academic subject of technical English. A passage was given on the topic, "Importance of Technical Writing for Engineering Students" without much difficulty, containing a maximum of seven vocabularies. The control group were asked to write the reading comprehension questions without using CALLA strategies, while the experiment group who underwent the CALLA training were required to use the strategies to answer the questions.

Qualitative data were collected through the post-test reading comprehension questions given along with the metacognitive strategies, to the experimental group. The questions included metacognitive strategic questions like a) Reflect on how effective technical communication can contribute in your future engineering endeavours and on the potential challenges you could face in conveying complex ideas. b) Were there any vocabulary words that you found challenging? How did you approach understanding their meanings? C) How did the graphic organizer assist you in organizing information and grasping the concepts presented? These questions focused on the effectiveness of CALLA strategies. The last question was aimed in determining student's perception on the effectiveness of CALLA in enhancing the reading comprehension skills. (Did you feel this approach improved your comprehension skills, both in terms of content and enhancement of language?).

VI. IMPLEMENTATION OF CALLA

The are five instructional stages involved in implementation of CALLA: *preparation, presentation, practice, evaluation, and expansion.* Table I depicts the proposed architectural structure of the approach on how successive stages include various activities, strategies and procedures for an effective realisation of the approach. The initial step of CALLA implementation is preparation, where the emphasis was on presenting the appropriate academic language and strategies that correspond to the topic in each class. There is a specific component under Technical English focusing on enhancing the comprehension skills through Skimming and Scanning of short Comprehension Passages. Students were prepared for enhancing the technical content and language proficiency needs. Their prior knowledge was tested through brainstorming sessions and anticipation guide, where students were provided a set of topic related statements to ponder upon and to express their opinions (agree or disagree). This engaged their prior knowledge, activated their schemata, and set the context for learning. In the next stage, presentation was done using advance organisers and vocabulary preview, where students were given an overview of the key concepts and preview of technically difficult vocabulary. Practice involved active student interaction with content language and cognitive strategies. They were given graphic organisers (concept maps) to organise

TABLE I
PROPOSED STRUCTURE FOR IMPLEMENTATION OF CALLA

Stages	Objective	CALLA Strategies used
Preparation	Activating prior knowledge (schemata)	Brainstorming, Anticipation guide
Presentation	Key concepts and vocabulary Preview	Advance Organisers, Vocabulary Preview
Practice	Organising information, summarisation	Graphic Organisers-Concept Maps
Evaluation	Testing content understanding and language	CALLA Reading Comprehension Test
Expansion	Application of strategies to other academic areas	Critical thinking, Metacognitive Questions

information, categorise ideas and to summarise key points. Student's understanding of both content and language objectives were assessed using post-test reading comprehension test through experiment group and control group. They were encouraged to extend their learning by applying the concepts and strategic approach to new contexts and other academic areas, fulfilling the final component of 'expansion'.

VII. DATA ANALYSIS

This study was directed towards examining the effect of implementing CALLA to enhance the reading comprehension, using quantitative and qualitative data. Percentage of 40 students from experimental group and control group were calculated to show the increase in over- all percentage after implementation of CALLA. Percentage was calculated individually in order to obtain the overall increase in percentage and Descriptive statistical methods of mean and standard deviation were also calculated providing the central tendency and dispersion of the data, projecting the efficacy of implementation.

VII. RESULTS

The effect of CALLA on enhancement of reading comprehension skills of ECE stream students were analysed through scores obtained by the control group and experimental group in the reading comprehension test conducted during the evaluation stage. Table II below shows the scores obtained by the students along with their percentage. Table III depicts the scores of students from experimental group who underwent the CALLA training for two weeks, along with their percentages. Fig. I and Fig. II depicts the column chart of the marks obtained by each group. The total marks were, 278 in control group and 306 in Experimental Group. This was calculated for the purpose of measuring the overall increase in performance. There was a 10.071% increase in the scores of experimental group. Table IV depicts the total number of students, total marks, mean and Standard Deviation (SD) of the control group and experimental group separately. The mean scores of the CALLA experimental group (15.3, SD-2.028) were higher than the control group (13.9, SD- 2.673). This data shows that CALLA was effective in enhancing the reading comprehension skills of the students.

JEET

Fig. III illustrates apparent increase in student's post-test scores in the experimental group compared to the control group, through increase in mean. Therefore, the overall results indicate that the experimental group performed significantly better than the control group at the reading comprehension test. (Students names are not given for confidentiality reasons).

The overall qualitative data which were obtained through the question from the Post-test reading comprehension, revealed that all the 20 participants perceived the CALLA implementation positively. The majority of the participants were very sure that CALLA enhanced their reading Comprehension skills. Some of the responses, stressed the value of practice and additional activities in order to raise their academic reading performance.

When asked about their perception of the impact of CALLA on the enhancement of their reading comprehension skills, most students emphasized that CALLA was helpful for them to develop their academic reading skills, which resulted in a better performance on their academic reading comprehension test given to them after implementation of the two-week program.

TABLE II
POST-TEST RESULTS OF CONTROL GROUP

Students	Marks Obtained	Percentage
A	18	90%
B	14	70%
C	16	80%
D	14	70%
E	17	85%
F	12	60%
G	9	45%
H	15	75%
I	13	65%
J	10	50%
K	14	70%
L	12	60%
M	14	70%
N	10	50%
O	11	55%
P	13	65%
Q	18	90%
R	15	75%
S	17	85%
T	16	80%
Total	278	Avg (%) - 69.50%

TABLE III
POST-TEST RESULTS OF EXPERIMENTAL GROUP

Students	Marks Obtained	Percentage
A	19	95%
B	16	80%
C	17	85%
D	15	75%
E	17	85%
F	15	75%
G	13	65%
H	15	75%
I	16	80%
J	14	70%
K	12	60%
L	14	70%
M	15	75%
N	13	65%
O	14	70%

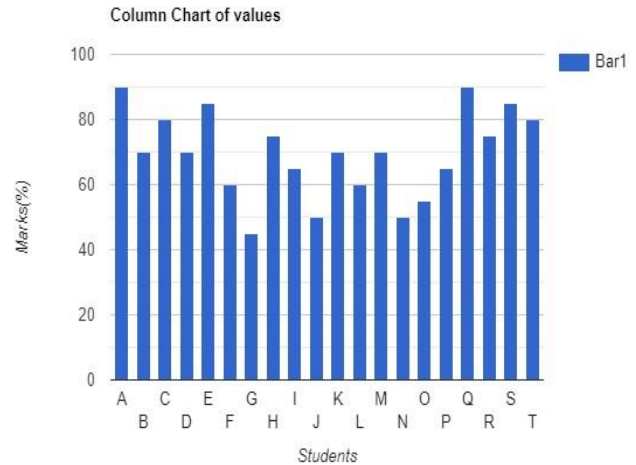| P | 17 | 85% |
Q	19	95%
R	16	80%
S	12	60%
T	17	85%
Total	306	Avg (%) – 76.50%

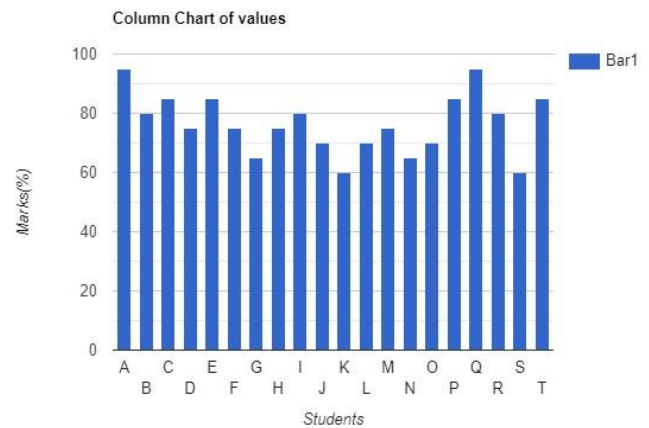Fig. 1. Column chart of control group Post-test results

Fig. 2. Column chart of experimental group Post-test results

TABLE IV
MEAN AND SD OF TWO-GROUP READING
COMPREHENSION ENHANCEMENT POST-TEST

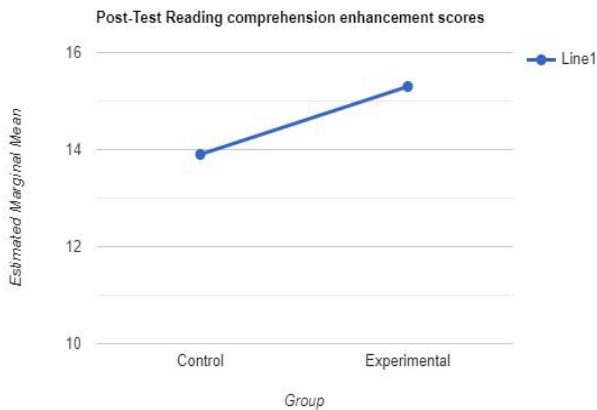| Tests	No	Total marks	Mean	SD
Control Group- Post Test	20	278	13.9	2.673
Experimental Group – Post Test	20	306	15.3	2.028
Total increase (%)	10.0719%			

480

Fig. 3. Mean representation of Post-test scores

Random excerpts of student perception on the effectiveness of CALLA, from the experiment group are given below.

Student A:

"I found the CALLA strategies really helpful. Breaking down the text, using graphic organizers, and thinking about the bigger picture made me understand the topic better. It felt like I was also actively engaging with language while reading."

Student B:

"The vocabulary strategies in CALLA helped me grasp key terms, which made it easier to express what I thought in the concept map. I felt more confident in my responses, and I could do it with much precision as I was aware of what every word meant contextually."

Student C:

"The traditional approach felt shallow, but with CALLA, I could dig deeper. The metacognitive strategies pushed me to think beyond the text, and I actually enjoyed analysing the context and implications of Technical English."

Student D:

"Using graphic organizers in CALLA made my responses organized and coherent. Instead of mindlessly reading, I had an aim in mind and followed accordingly, and my ideas flowed more logically."

Student E:

"I struggled with academic readings before, but I think CALLA can change that. The strategies helped me process complex information better and also, I was able to imbibe the meaning fully through vocabulary previews. I felt like I was truly learning new words."

Student F:

"CALLA's metacognitive strategies encouraged me to reflect on the reading's significance. It wasn't just about answering questions; it was about understanding the bigger impact of technical English and implications."

Student G:

"With CALLA, I paid more attention to vocabulary. The strategies helped me understand difficult words, and that boosted my confidence. "

Student H:

"I used to skim readings aimlessly, but graphic organisers made me slow down and analyse. The traditional approach didn't push me to think critically, but CALLA strategies helped me engage with the content and language on a deeper level."

Student I:

"CALLA's structure made a difference. I could see how strategic the implementation was done. In a short-period, I felt like I was building a well-rounded understanding of the various aspects of reading."

Student J:

"The traditional approach felt repetitive and boring since it is the same since school—read, answer, move on. CALLA strategies made me feel active. I was thinking, connecting ideas, and forming opinions. It felt nice to approach academic reading differently."

VII. REFLECTIONS

There are very few studies focusing on the effect of CALLA on enhancement of academic reading comprehensibility skills, especially in the Indian context. The results obtained through the analysis of quantitative data showed a positive effect on the enhancement of academic reading comprehension skills. The results can be easily discerned through the increase in overall percentage of the Experimental group. The objective of reading comprehension in experimental group was achieved through incorporation of various CALLA strategies. The noticeable slight raise, in the estimated mean of the experiment group evidently proves the efficacy of CALLA implementation.

These results were also supported by the qualitative responses from students, which were obtained from their answers in Post-test. Similar to O'Malley and Chamot (1990), this study found that the experimental group, which received training utilising CALLA, performed better than the control group in terms of academic accomplishment. Implementation of CALLA is beneficial in various aspects, it exposes students to various challenging content and activities along with other learning strategies. Students also get the opportunity to use different cognitive techniques to enhance their academic reading comprehension skills, according to their needs, based on metacognitive strategies of self-evaluation. Explicit instruction is yet another discernible benefit of CALLA, where students are given explicit instruction in all five stages, through which students obtain a comprehensive idea on how the approach works along with inclusion of strategies. Some researchers such as O'Malley and Chamot (1990) and Oxford (1990) have affirmed the importance of the explicit teaching of learning strategies. This has enabled them to overcome difficulties faced during reading, enhancing reading comprehension skills.

The explicit emphasis on pertinent and contextually appropriate language forms, assist content-learning activities in the classroom. Contextually teaching reading comprehensibility (Skimming and Scanning of short Reading Comprehension passages) under technical English through CALLA has evidently assisted in content learning, on what is technical

English and on how it is vital in engineering communication and also in enhancing language forms. (The CALLA integrated Technical English module that was followed along with the question papers are enclosed in the appendix for reference). Focusing on language instruction and content teaching with regard to student's competency and proficiency in English as Second Language Learners has also profoundly impacted in understanding of content and language comprehensibility. This study increased student's overall achievement because it catered to one of their highly cognitively demanding skill, 'reading', focusing on them with regard to their needs as engineering students and as second language learners. Integrating several tactics, aided students in enhancing their reading performance. O'Malley and Chamot (1990) suggested that while using one technique improves students' comprehension, incorporating numerous strategies into instruction can unquestionably result in a meaningful improvement in students' reading comprehension.

VIII. CONCLUSION

Taking into account the academic subjects and complexity of academic reading texts, the Cognitive Academic Language Learning Approach is one of the many ways students might use to achieve their aims. This study has shown that CALLA is a promising approach that enhanced the reading comprehension skills of first year engineering students upon implementation in tier-1 Engineering College, under an ESL context. CALLA is a program and an instructional model that was developed to meet the academic needs of ESL students learning (Albashtawi, 2019). Student's personal response upon the efficacy of the method in enhancing their reading comprehension skills has also revealed that CALLA has been very useful for them to improve and enhance their academic reading skills. Teachers and students should be adequately trained in CALLA approach, with regard to the cognitive, metacognitive strategies and, advance graphic organisers for effective implementation. CALLA being a student- centred approach helps students identify their own needs and limitations creating awareness on their own cognitive process and the skills that should be enhanced for better academic achievement. English can be disseminated as a medium of thought through CALLA and it enhances language skills aiding in application of appropriate skills for subject understanding and comprehensibility. This method upon effective implementation, can enhance all four Skills of reading, writing, listening and speaking, but this study focused on enhancing reading skills, which has been successfully proven over the course of two -weeks.

APPENDIX

Control Group Post-Test Reading Comprehension
Technical Communication: A Vital Skill for Engineers
Technical communication plays a pivotal role in the field of engineering. It entails the skilful articulation of intricate concepts in a manner that's easily comprehensible. Engineers frequently draft comprehensive reports, fabricate illustrative

diagrams, and deliver presentations to disseminate their discoveries among peers and clients alike. Proficiency in communication is an indispensable asset for achieving favourable project results.
Questions:
1. What is the importance of technical communication in engineering?
2. List some forms of technical communication Engineers use.
3. How does strong communication benefit project outcomes?

CALLA Post-Test Reading Comprehension
Technical Communication: A Vital Skill for Engineers
Technical communication plays a pivotal role in the field of engineering. It entails the skilful articulation of intricate concepts in a manner that's easily comprehensible. Engineers frequently draft comprehensive reports, fabricate illustrative diagrams, and deliver presentations to disseminate their discoveries among peers and clients alike. Proficiency in communication is an indispensable asset for achieving favourable project results.
Vocabulary Strategy: Define the following terms from the passage:
1. Pivotal
2. Articulation
3. Intricate
4. Comprehensible
5. Disseminate
6. Proficiency
7. Indispensable
Graphic Organizer: Create a concept map illustrating the relationship between technical communication skills, engineering, and project outcomes.
Metacognitive Strategy:
1.Reflect on how effective technical communication can contribute to your future engineering endeavours and on the potential challenges you could face in conveying complex ideas.
2.Were there any vocabulary words that you found challenging? How did you approach understanding their meanings?
3.How did the graphic organizer assist you in organizing information and grasping the concepts presented?
4. Did you feel this approach improved your comprehension skills, both in terms of content and enhancement of language? This reading comprehension worksheet follows the CALLA approach by combining the content related to the need for technical communication with vocabulary strategies, a graphic organizer, and metacognitive reflection. It encourages learners to engage with the academic content, compare concepts visually, and reflect on their reading strategies.

Technical English CALLA Module
Module Title: Accelerated Reading Comprehension Skills in Technical English
Module Duration: 2 weeks

Module Objectives:
* By the end of this module, students will be able to:
* Apply efficient reading strategies to understand technical English texts.
* Identify main ideas, key details, and organizational patterns in technical passages.
* Utilize domain-specific vocabulary to enhance comprehension.
* Engage metacognitive strategies to monitor and improve understanding.

Week 1 - Essential Reading Strategies:

Day 1: Introduction to Technical English Reading

Explain the importance of reading comprehension in technical fields.

Share the module objectives and learning outcomes.

Day 2: Skimming and Scanning Techniques

Introduce skimming and scanning as quick reading methods.

Provide a technical passage for skimming (identifying main ideas) and scanning (finding specific information).

Day 3: Active Reading and Predicting

Teach students how to make predictions based on headings, subheadings, and visuals.

Distribute a technical passage for guided prediction and active reading.

Day 4: Graphic Organizers for Visualizing Content

Introduce graphic organizers to structure information from technical texts.

Engage students in creating a concept map for a passage they read.

Week 2 - Analysing Complex Technical Texts:

Day 5: In-Depth Comprehension Strategies

Present strategies like summarizing, identifying supporting details, and noting key terms.

Assign a technical passage for students to apply these strategies.

Day 6: Domain-Specific Vocabulary Enhancement

Discuss the significance of domain-specific vocabulary in understanding technical content.

Provide a list of technical terms related to the subject matter.

Day 7: Application of Metacognitive Strategies

Explain metacognitive strategies such as self-monitoring, clarifying doubts, and revisiting sections.

Have students read a technical passage, practice self-monitoring, and share their insights.

Day 8: Summative Assessment and Reflection

Conduct a final reading comprehension assessment using a technical passage.

Encourage students to reflect on their progress, highlighting strategies that improved their comprehension.

Assessment:

Comprehensive reading comprehension task involving a technical passage, followed by open-ended questions.

Materials:
* Technical English passages of varying complexity.
* Graphic organizers for structuring information.
* List of domain-specific vocabulary terms.

Learning Activities:
* Skimming, scanning, and active reading exercises.
* Creation of concept maps and graphic organizers.
* Engaging in discussions and group activities.

Reflective Practice:

Promote reflection at the end of the module. Ask students to share how their reading comprehension skills have improved, which strategies they found most effective, whether they felt CALLA to be more effective in enhancing their reading comprehension skills.

REFERENCES

Albashtawi, A.H. (2019). Improvement of EFL student's Academic Reading Achievement Thorugh the Cognitive Academic Language Learning Approach (CALLA). Reading Psychology, 1–26. https://doi.org/10.1080/02702711.2019.1658669

Chamot, A. U. (2007). Accelerating academic achievement of English language learners. In J. Cummins & C. Davison (Eds.), International handbook of English language teaching (pp. 317–331). Springer US

Chamot, A.U., & O' Malley, J.M. (1987). The cognitive Academic Language Learning Approach: A Bridge to the Mainstream. TESOL Quarterly, 21(2), 227. https://doi.org/10.2307/3586733

Chamot, A. U., & O'Malley, J. M. (1994). Instructional approaches and teaching procedures. In K. Spangerberg-Urbschat & R. Pritchard (Eds.), Kids come in all languages: Reading instruction for ESL students (pp. 82–107). International Reading Association.

Chamot, A. U., & O'Malley, J. M. (1996). The Cognitive Academic Language Learning Approach: A Model for Linguistically Diverse Classrooms. The Elementary School Journal, 96(3), 259–273. https://doi.org/10.1086/461827.

Chamot, A. U., & Robbins, J. (2005). The CALLA model: Strategies for ELL student success. Workshop for Region.

Creswell, J. W. (2013). Research design: Qualitative, quantitative, and mixed methods approaches. SAGE Publications Cubukcu, F. (2008). Enhancing vocabulary development and reading comprehension through metacognitive strategies. Issues in Educational Research, 18(1), 1–11.

Grabe, W., & Stoller, F. L. (2004). Reading for academic purposes: Guidelines for the ESL/EFL teacher. In M. Celce-Murcia (Ed.), Teaching English as a second or foreign language, 3. Heinle & Heinle.

Gu, Y. (2018). Cognitive Academic Language Learning Approach (CALLA). The TESOL Encyclopedia of English Language Teaching, 1–6. https://doi.org/10.1002/9781118784235.eelt0176

O'Malley, J. M., & Chamot, A. U. (1990). Learning strategies in second language acquisition. Cambridge University Press.