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Assessment of Reading Skills and Strategies for Enhancing Reading in Arts and Science Students

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Abstract

Many today's college-bound youngsters lack the reading comprehension necessary to perform well in their classes. Students frequently lack the abilities necessary to think clearly and logically, which is a related issue. What is required is the development of clear thinking and good reading skills. Today's students live in a society where the typical person watches more than five hours of television each day. There isn't much time for reading with all that passive viewing. One skill that needs to be regularly practiced is reading. As a result, we must encourage our children to consider the reasons behind our reading and reaffirm the advantages of reading. This serves as the foundation for this study. The significance of reading for students studying the arts and sciences is the subject of this study. Students who read are better able to communicate, which opens up job prospects and promotes economic growth. Reading enhances their critical thinking, oral presentation, interviewing, debating, and research abilities in addition to their general command of the English language. Reading makes them more conscious of the problems and worries that companies have with new technologies. Additionally, reading increases our ability to focus, find facts and expand our knowledge, be more creative, and enjoy life.

Keywords: *Reading Comprehension, Students, Ability, Communicate, Job Prospects, Critical Thinking, Oral Presentation, Interview and Debate.*

Introduction

A fundamental ability that affects academic achievement in many fields, including the arts and sciences, is reading. Reading promotes critical thinking, comprehension, and interaction with difficult texts in an academic setting in addition to being a mechanism of knowledge acquisition. However, because of the variety of texts they come across, students in different disciplines may have distinct reading difficulties. Science students usually work with extremely technical, research-based, and data-driven content, whereas arts students frequently connect with literary, philosophical, and theoretical works.

The assessment of reading skills is essential for identifying students' strengths and areas needing improvement, ensuring that they develop effective reading strategies. These strategies are crucial for enhancing comprehension, retention, and the ability to analyze and apply information. For arts and science students, cultivating strong reading habits and adopting tailored strategies can make a significant difference in their academic performance and intellectual development. This study aims to explore the reading skills of arts and science students and assess the strategies that can be employed to enhance their reading abilities. By identifying the specific challenges faced by students in these fields, the research will provide insights into effective reading strategies that can support their academic growth.

Need for the Study

The Tamil newspaper *Dhinamalar* reported on November 15, 2013, that 40% of school students in Tamil Nadu lack reading skills, which has been attributed to the state's "All Pass Scheme." This policy ensures that students up to the ninth standard are not failed, regardless of their performance. While intended to reduce pressure on students, this scheme has led to a significant

decline in reading habits. As a result, students face considerable difficulties in higher classes and during common examinations, as they are ill-prepared due to the absence of essential reading skills by that time.

Many students entering college today lack the necessary reading skills to succeed in their courses. Alongside this, many also struggle with the ability to think clearly and logically. What is essential now is the development of both effective reading skills and clear thinking. Students today live in a culture where the average person spends over five hours a day watching television. This passive consumption of media leaves little time for reading. Reading, however, is a skill that requires active practice. Therefore, it is crucial to encourage students to reflect on the purpose of reading and to continually reinforce its benefits in their minds.

Environmental Factors in Reading Ability

Environmental factors that influence reading ability include language background and the extent of life experiences, with the former largely shaped by the latter. While colleges can play a significant role in addressing language background and providing general experiences that enhance speech and vocabulary development, these factors are also closely linked to home conditions. Extensive research has shown a strong connection between reading ability and social factors, particularly those stemming from a child's home environment. The concept of home background encompasses both emotional and material influences, which can affect a child's development in both subtle and direct ways.

Home background includes several key elements:

- **Economic conditions**, such as family income, home size, regularity and sufficiency of meals, and access to adequate sleep.
- **Opportunities for play and social experiences**, which are essential for developing concepts and vocabulary.
- **Speech and language patterns**, especially the language used by parents, which significantly influences the child's language development.
- **Attitudes towards reading and writing**, the amount of reading done at home, and the availability of books with varying levels of difficulty.
- **Family life quality**, particularly the nature of inter-parental relationships, which can impact the child's emotional security and overall personality development.

Mechanics of Reading

When we read, our eyes do not move smoothly along the printed text but instead move in a series of jerks. Actual reading occurs in brief moments when the eye pauses between two eye spans. We tend to believe we understand what we read by focusing on the meaning of each word, but experiments have shown that our eyes actually make jumps along the line. These jumps can be short, covering just one word, or longer, skipping over multiple words or even entire sentences. In the case of poor readers, the eyes often regress, moving back over previously read material. The number of words the eye takes in during one jump is called the "eye span." A longer eye span is associated with more fluent reading, while a shorter eye span often indicates a less skilled reader. Advanced reading habits are characterized by a wider eye span, fewer backward eye movements, and shorter pauses. Poor readers, on the other hand, may focus on individual letters (e.g., "B-a-d bad") and lose sight of the whole word. They may murmur as they read, frequently regress, and use their finger or pencil to point at words.

To address this, teachers can make reading more engaging by incorporating various activities, such as drawing a picture and writing a sentence underneath. Flashcards can also be used to help students identify objects or actions. Commands can be flashed on cards, prompting students to read and then follow the instructions, which helps improve their reading skills.

Types of Reading

Reading is an active and receptive skill that involves several processes happening simultaneously. The reader decodes the message, extracts relevant information, understands the author's meaning, and engages in prediction and

interpretation, among other actions. To make reading a productive activity, students must be taught how to read effectively (Snow, 2010; Anderson, 2004).

There are many different ways to read, each falling into specific categories. Experts in the field offer various classifications of reading types. These may include close reading, rapid reading, speed reading, systematic reading, evaluative reading, in-depth reading, reading aloud, silent reading, skimming, scanning, intensive reading, and extensive reading, with each method serving distinct purposes depending on the reader's objectives and the nature of the material (Zwaan, 2014; Smith, 2016; Brown, 2015).

Reading Aloud

Reading aloud is introduced in the early stages to help students recognize phonetic symbols and learn to mimic the teacher's pronunciation. This practice aids in developing proper word pronunciation, stress, intonation, and pauses. Such guided reading also fosters expression and emotional engagement while allowing for correction of mistakes (Kuhn & Stahl, 2003; Rasinski, 2014).

After the teacher has orally introduced the lesson's content, they should model reading aloud, emphasizing word and sense groups. Students will listen and repeat after the teacher, practicing the correct forms when they make errors. Their reading behavior will reveal whether they are truly comprehending the material or not (Kuhn et al., 2006; National Reading Panel, 2000).

Silent Reading

Every student needs to learn silent reading as soon as possible. It is a productive reading method that benefits everyone. Silent reading increases reading speed, saves time, and reduces effort. Without worrying about pronunciation, the student can focus on understanding the meaning and absorbing more information (Grabe & Stoller, 2011; Snow, 2010). Furthermore, silent reading allows students to read at their own pace and engage with the text more deeply, which fosters both comprehension and enjoyment (Anderson, 2004). This method is particularly advantageous for acquiring information from academic texts, as it helps students process and internalize content more effectively (Nation, 2009).

Skimming

Skimming is the process of quickly reading through a text to determine whether its content is relevant to a given purpose or goal. The reader should take a moment to scan the text before deciding to read it in detail. During skimming, the reader moves rapidly through the material without pausing to focus on specifics. This method is often used to get a general sense of the text's structure, key ideas, or relevance to a specific question or task (Grabe & Stoller, 2011; Nuttall, 2005). Skimming is particularly useful in academic settings, where students need to assess large amounts of material quickly to decide which parts warrant further, more focused reading (Carver, 2017).

Scanning

Scanning is a reading technique used when a person wants to conduct a thorough study of a text. The aim is to understand everything in detail, including the structure and vocabulary of the language. As Rosalind Percy (p. 193) explains, scanning is similar to how a doctor examines a patient to diagnose the cause of an illness; the reader's goal is to closely inspect the text to gain a deep understanding. When a student is scanning, they might carefully study all aspects of a term. This includes exploring its definition, origin, synonyms and antonyms, grammatical function (whether it is an adjective, noun, etc.), multiple meanings of the word, and even its pronunciation (Grabe & Stoller, 2011; Nuttall, 2005). Scanning is especially useful when students need to engage with academic texts and wish to gain a comprehensive understanding of specific concepts or terminology (Carver, 2017).

Extensive reading

"Extensive reading is a non-detailed study of a text, such as books and magazines," Rosalind Percy explains. Some people engage in extensive reading for leisure, while others do so to gather information. The primary goals of extensive reading are to foster students' reading habits, broaden their knowledge, and enhance their reading speed and comprehension (Grabe & Stoller, 2011). According to Smt. Mehrunisa and Prof. V. Ganapathy (Teaching of English, p. 20),

extensive reading involves reading large amounts of material without focusing on every unfamiliar word or structure. This type of reading encourages a more holistic understanding of content and promotes fluency in reading.

Extensive reading is beneficial for students as it allows them to read widely, improve their vocabulary, and encounter diverse sentence structures and contexts (Day & Bamford, 1998). It helps build confidence and motivates students to engage more with reading outside of the classroom. Furthermore, by regularly practicing extensive reading, students can gradually improve both their reading speed and overall comprehension (Nation, 2009).

Intensive Reading

Intensive reading, on the other hand, as explained by Rosalind Percy (p. 194), is a detailed study of a text. This approach is often used when students need to focus on understanding language structure, vocabulary, and the deeper meaning of the text. Unlike extensive reading, which is more about broad exposure to text, intensive reading involves a focused and careful analysis of every word, sentence, and concept in the material.

This method is particularly useful for language learning and academic study, where the goal is to comprehend complex ideas and internalize the material (Grabe & Stoller, 2011). Intensive reading allows students to deepen their understanding of texts and develop critical thinking skills by examining the structure, meaning, and nuances of the language. It is also beneficial for acquiring specific knowledge about a subject, as it encourages thorough comprehension and retention (Urquhart & Weir, 2013).

Through intensive reading, learners can expand their vocabulary, improve reading comprehension, and engage in meaningful interaction with the text. This method is often employed in classrooms where detailed understanding and mastery of specific language aspects are required (Nation, 2009).

Significance of the Study

The study on reading skills and strategies for enhancing reading in students from different departments—B.Sc ECS, B.Sc Biotechnology, and B.Com—aims to examine how reading abilities impact academic success and how specific strategies can improve reading comprehension and retention in these disciplines. Given that students in these fields are required to engage with dense and complex texts, improving reading skills is critical to their overall academic performance. This study seeks to fill the gap in understanding the effectiveness of various reading strategies and assess their applicability across different academic domains.

Objectives of the Study

- To assess the current reading skills of students in the B.Sc ECS, B.Sc Biotechnology, and B.Com departments.
- To identify the reading strategies currently employed by students in these departments.
- To determine the effectiveness of specific reading strategies in improving comprehension and retention of academic material.
- To compare pre-test and post-test performance to evaluate the impact of targeted reading strategies.
- To provide recommendations for enhancing reading skills in students for these academic disciplines.

Research Questions

- What are the existing reading skills of students in the B.Sc ECS, B.Sc Biotechnology, and B.Com programs?
- What reading strategies do students in these departments currently use?
- How do specific reading strategies affect students' comprehension and retention of academic material?
- What improvements can be made to enhance reading skills in students from these departments?

Literature Review

- **Reading Skills in Higher Education:** Research has shown that students entering higher education often face difficulties with reading

comprehension, particularly when dealing with complex academic texts (Snow, 2010). Effective reading skills are essential for students in the sciences and humanities, where reading forms the foundation of acquiring new knowledge (Zwaan, 2014). However, reading is not simply about decoding words but involves multiple cognitive processes including comprehension, analysis, and critical thinking (Anderson, 2004).

- **Reading Strategies:** Effective reading strategies such as skimming, scanning, and detailed reading can significantly improve comprehension and retention of academic material (Smith, 2016). Students in scientific fields like B.Sc Biotechnology and B.Sc ECS often need to read in-depth to understand technical concepts, while students in B.Com may need strategies for processing large amounts of theoretical and quantitative material (Brown, 2015). According to studies, reading strategies that incorporate active engagement with the text, such as note-taking and summarizing, tend to enhance academic performance (Carver, 2017).

- **Pre-test and Post-test Methodology:** Studies in educational psychology have shown that pre-test and post-test assessments are effective in measuring learning progress. A pre-test assesses students' baseline knowledge and skills, while a post-test helps determine the impact of an intervention or new learning strategy (Duke & Pearson, 2002). The difference between pre-test and post-test scores provides a clear indication of the effectiveness of the strategies employed.

Methodologies Associated with the Research

The research will use a **mixed-methods approach**, combining both quantitative and qualitative data to assess reading skills and strategies.

- **Quantitative Methods:** Pre-test and post-test assessments will be conducted for students in the three departments (B.Sc ECS, B.Sc Biotechnology, and B.Com) to evaluate their reading comprehension and retention. Statistical analysis will be used to compare the pre- and post-test results to determine the effectiveness of reading strategies.

- **Qualitative Methods:** Interviews and surveys will be conducted to gather feedback on students' attitudes toward reading, their current strategies, and their perceived challenges. Additionally, observation of reading behaviours during classroom activities will be noted.

Data Collection Methods

- **Pre-test and Post-test Assessments:** Students were given a pre-test at the beginning of the study and a post-test after the intervention. The tests consist of reading comprehension questions and retention assessments based on course-specific materials.

Data Collection Methods Using Pre-Test and Post-Test for Reading Comprehension, Vocabulary, Fluency, and Engagement

To assess the effectiveness of reading interventions on **Reading Comprehension**, **Vocabulary**, **Fluency**, and **Engagement**, the research involves data collection through both **pre-test** and **post-test** assessments. The methods used for each of these aspects are outlined below:

Pre-Test and Post-Test Assessments:

A. Reading Comprehension

- **Pre-Test:**

Students were given a passage or set of academic texts related to their course material. After reading the text(s), they are required to answer comprehension questions that assess their understanding of the material, including:

- **Key Ideas**: Identifying main ideas and supporting details.
- **Inference**: Making inferences based on the text.
- **Vocabulary in Context**: Understanding words or phrases based on their context within the passage.
- **Main Argument**: Identifying the primary argument or theme of the text.

- **Post-Test:**

The post-test is similar to the pre-test, with the same structure but potentially involving more challenging texts or additional comprehension questions. The comparison of pre-test and post-test results shows any improvement in students'

ability to comprehend and understand complex texts.

B. Vocabulary

- **Pre-Test:**

A vocabulary test was administered, where students were asked to define and/or use a set of academic words or terms they were likely to encounter in their coursework. The test may involve:

- **Multiple-Choice Questions (MCQs)**: Identifying the correct meaning of a word in context.
- **Matching Words to Definitions**: Associating words with their meanings.
- **Sentence Completion**: Filling in blanks with the correct vocabulary word.

- **Post-Test:**

  - The post-test was similar to the pre-test but incorporates new or more advanced vocabulary terms that students might have encountered during the intervention period. Comparison of scores between the pre- and post-tests showed how much vocabulary retention and understanding have improved.

C. Fluency

- **Pre-Test:**

Students were asked to read a passage aloud to assess their fluency. Key aspects evaluated include:

- **Pace**: How quickly students can read the passage while maintaining accuracy.
- **Accuracy**: The number of errors (mispronunciations or skipped words).
- **Intonation and Expression**: The use of correct intonation, stress, and pauses when reading aloud.

- **Post-Test:**

  - After the reading intervention, students were asked to read a similar or slightly more complex passage aloud. Improvements in fluency are measured based on:

- Increased reading speed without sacrificing accuracy.
- Improved intonation and expression.
- Fewer errors and smoother flow of reading.

D. Engagement

- **Pre-Test:**

  - Engagement assessed by observing student behaviors during reading activities (e.g., students' focus on the task, willingness to participate in reading activities). A baseline measure of engagement may include:

- **Self-Report Surveys**: Asking students to rate their interest and participation in reading activities.
- **Classroom Observation**: Documenting how often and how actively students engage during reading activities.
- **Motivation Level**: A measure of students' motivation and interest in the reading material.

- **Post-Test:**

  - After the intervention, student engagement is assessed again using:

- **Surveys**: A post-test survey where students rate their engagement levels compared to the pre-test.
- **Classroom Observation**: Teachers observe whether students have become more active participants in reading and related activities.
- **Student Feedback**: Feedback on whether students feel more motivated and engaged with reading tasks.

Analysis of Pre-Test and Post-Test Data for Three Departments

B.Sc ECS (Pre-Test & Post-Test Results)			
S. No	**Category**	**Pre-Test (%)**	**Post-Test (%)**
1	**Reading Comprehension**	45%	70%
2	**Vocabulary**	50%	75%
3	**Fluency**	40%	65%
4	**Engagement**	50%	80%

Reading Comprehension: There was a significant improvement of 25% in reading comprehension, showing that students were able to understand texts better post-intervention. **Vocabulary**: A notable increase of 25% in vocabulary, indicating that students gained more exposure to words and context.

Fluency: An improvement of 25% in fluency, suggesting that students read more smoothly and with better pace.

Engagement: The largest improvement was in engagement, with an increase of 30%, indicating students were more involved and motivated during reading activities.

B.Sc Biotechnology (Pre-Test & Post-Test Results)			
S. No	**Category**	**Pre-Test (%)**	**Post-Test (%)**
1	**Reading Comprehension**	50%	80%
2	**Vocabulary**	55%	70%
3	**Fluency**	45%	60%
4	**Engagement**	60%	85%

 Reading Comprehension: There was a strong improvement of 30% in reading comprehension, indicating better understanding and retention of text.

 Vocabulary: The vocabulary improved by 15%, which shows increased word recognition and understanding.

 Fluency: An increase of 15% in fluency suggests that students became more confident in reading at a faster pace.

 Engagement: Engagement saw a remarkable increase of 25%, suggesting that students were more interested and participative in reading activities.

*B.Com **General** (Pre-Test & Post-Test Results)*			
S. No	**Category**	**Pre-Test (%)**	**Post-Test (%)**
1	**Reading Comprehension**	40%	75%
2	**Vocabulary**	45%	70%
3	**Fluency**	50%	70%
4	**Engagement**	55%	80%

 Reading Comprehension: A significant improvement of 35% in reading comprehension, reflecting better understanding of the material.

 Vocabulary: Vocabulary improvement of 25%, indicating that students developed a stronger vocabulary base.

 Fluency: Fluency increased by 20%, showing that students became more comfortable reading faster and with fewer errors.

 Engagement: Engagement increased by 25%, highlighting that students were more motivated and willing to participate in reading exercises.

Pre-test and Post-test Connectivity

The pre-test provided a baseline measure of the students' reading comprehension and retention abilities. After the introduction of targeted reading strategies (such as **Reading Comprehension, Vocabulary, Fluency and Engagement),** the post-test results indicated a marked improvement in all three departments. The improvement was greatest in B.Sc Biotechnology, B.Sc ECS & B.Com General.

Overall Observations

- **B.Sc ECS** showed a moderate increase in all categories, with the largest improvement in engagement.
- **B.Sc Biotechnology** exhibited the most significant growth in comprehension, vocabulary, and engagement.
- **B.Com** had substantial improvements, particularly in reading comprehension and vocabulary, showing strong gains in these areas.

The results highlight the positive impact of targeted reading interventions in enhancing reading comprehension, vocabulary, fluency, and student engagement. The post-test improvements indicate that students from all three departments benefited significantly from the reading strategies implemented in the study.

Conclusion

The results of the study demonstrate that structured reading interventions can lead to substantial improvements in the reading skills of students across different academic departments.

The increase in reading comprehension, vocabulary, fluency, and engagement shows that when students are provided with focused support and activities, they are able to make considerable progress. The study emphasizes the importance of continual reinforcement and practice in reading skills to ensure academic success, particularly for students in arts and science fields where strong reading skills are essential for understanding complex material.

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