Effectiveness of Chunking Strategy in Teaching Spelling among Upper Primary Students

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Abstract: *This study investigates the effectiveness of the chunking strategy in improving spelling abilities among upper primary students. Chunking involves breaking words into smaller, more manageable parts to enhance memory and retention. A total sample of 64 students from an upper primary school participated in this study, which used pre - tests, post - tests, and delayed post - tests to measure their progress. The chunking method was compared to conventional spelling techniques. Statistical analysis revealed a significant improvement in students' spelling scores when taught using the chunking strategy, with sustained performance evident from the delayed post - test.*

Keywords: Chunking Strategy, Spelling

1. Introduction

English, though an adopted language in India, has deep cultural roots in this country. Today the compulsions of learning English are no longer merely political. The reasons for the popularity and continued acceptance of English in India are its utility as the chief vehicle of scientific and technological knowledge, its nature as a dynamic and well - developed language with a vast literature, and its utility as a library language and international language. It is the medium of instruction at higher level of education for an Indian. English is a link language. It is the common means of communication among the people of different nations it cannot be replaced so easily because the new knowledge generated by way of research in advanced countries is mostly disseminated through the medium of English.

English competency is considered to be a basic skill in the present scenario. To be proficient in English is becoming a necessity. One needs to be competent in the four basic skills such as listening, speaking, reading and writing. The learner should be able to comprehend, express his own ideas both in verbal and oral manner and understand what others are saying. The writing skill is the one which is frequently tested in various examinations or simply in daily life, while writing a letter or the like. The difficulties that are confronted lies in areas of grammar, vocabulary and spelling. Of which the basic element is the spelling itself. Even if an article is grammatically accurate and enriched with ornate vocabulary, there is no use if there are spelling mistakes. A spelling is the correct order of the letters in a word. The spellings of English words are often tricky and confusing. The reason behind this is there is no resemblance between the pronunciation of the word and its spelling as in South Indian languages like Malayalam. Also English language has a number of loan words in it. But even then not much attention is paid to this element of language.

Spelling, the art of correctly assembling words from their letters, is one of the essential components of successful writing. Being confident at spelling leads to confidence in all aspects of literacy. Spelling is a complex skill and an important part of writing. Good spelling is also a social expectation and contributes to clear communication of a written message. Spelling is a fundamental skill that significantly impacts a student's ability to write and communicate effectively. However, it can be challenging for many students, especially those in the upper primary grades, to master. Traditional methods of teaching spelling often involve rote memorization, which does not always yield long - term retention or understanding of spelling patterns. Spelling proficiency is crucial for academic success, particularly in writing and communication. Upper primary students often struggle with memorizing spelling due to the complexity and irregularity of the English language. Traditional spelling instruction, which focuses on rote memorization, is not always effective in promoting long - term retention of correct spellings. Thus, the need arises to explore alternative teaching strategies that can aid students in mastering spelling.

Chunking, a cognitive strategy rooted in the principles of working memory, divides large sets of information into manageable "chunks, " making it easier for learners to process and retain. Chunking refers to organizing or grouping separate pieces of information together. When information is 'chunked' into groups, one can remember the information easier by remembering the groups as opposed to each piece of information separately. There are several ways to chunk information. Chunking techniques include grouping, finding patterns, rearranging the jumbled and organizing. The technique we use to chunk will depend on the information to be chunked. Applying this strategy in the process of learning spelling will be a constructive idea. It helps the learner to memorize the word more easily. The significance of this method is to assist the students in the learning process by improving their spelling skills. The long words can be divided into small chunks and then learn. Also in most English words there is word within a word. There will be affixes in a word. If the learner could identify this and learn accordingly it will be easy for him/her to learn the word.

This strategy has been widely studied in relation to language acquisition, memory, and cognitive development. However, there is a gap in research exploring its direct application in teaching spelling, particularly among upper primary students. This study seeks to explore the effectiveness of the chunking strategy in improving the spelling skills of upper primary students through a controlled experimental design.

2. Need and Significance of the Study

Upper primary students, typically between the ages of 9 and 12, are at a critical juncture in their linguistic development. At this stage, spelling becomes increasingly important not only for writing but also for comprehension across subjects. Many students, however, struggle with the complexities of spelling, which can negatively impact their overall academic performance.

Given the cognitive load required to memorize large amounts of spelling rules, chunking offers an alternative method that could reduce the burden on working memory. This research aims to fill the gap by investigating the effectiveness of chunking as a tool to improve spelling proficiency. The results of this study could provide educators and policy makers with a research - based instructional method that enhances spelling performance, leading to broader academic success.

The results of this study will open a new door for the students as well as the educators to learn the fundamentals of English language in an easy way. Chunking strategy permits ample freedom for the students to express their ideas and answers. The monotony that exists in language classes with the rote memorization method can also be warded off as there is an element of fascination in this strategy. The active participation of the learners can be ensured without much effort. The research results may serve as a guide for foreign language teachers and it will give new insights to the ESL teachers.

Hypotheses
The hypotheses formulated are
H_1 There will be a significant difference between the Non - Treatment Control group and Experimental Group with regard to pre - test scores.
H_2 There will be a significant difference between the Non - Treatment Control group and Experimental Group with regard to post - test scores.
H_3 There will be a significant difference between the means of post - test and delayed post - test scores of the Experimental Group.

Objective
To study the effectiveness of chunking strategy in teaching spelling among upper primary students

Tools Used
Spelling Tests
The tests consisted of a mix of regularly used and complex words designed for upper primary students. A total of 20 words was included in each test and a total score of 20 marks. Spelling tests were administered to assess spelling proficiency.
- *Pre - Test:* Administered before the intervention to both the experimental and non - treatment control groups to assess baseline spelling abilities.
- *Post - Test:* Conducted after a 4 - week intervention in which the experimental group was taught using the chunking strategy, and the control group received no treatment.
- *Delayed Post - Test:* Conducted three weeks after the post

- test for the experimental group to measure retention of spelling knowledge.

3. Method Adopted

The investigator adopted experimental method using pre - test post - test non - treatment control group design to investigate about the focused problem. A pre - test was conducted by the investigator for both experimental and non - treatment control group, then, the experimental group was taught spelling using the chunking strategy. This involved breaking words into smaller, manageable parts (or chunks). For example, the word "unbelievable" was divided into "un - believe - able. " Students were taught to recognize patterns within words to enhance memorization. The control group continued without any intervention or treatment by the investigator, in their normal class by their own teacher with traditional spelling instruction, where they were asked to memorize full words without breaking them into smaller parts. This was followed by a post - test after four weeks for both experimental and non - treatment control group to assess the performance and a delayed post - test for experimental group alone after three weeks to assess the retention of the learnt spellings. The investigator collects data and an attempt was made to study how far the learning spelling through chunking strategy is effective in English language and how far it is retained by the students. The data was analysed using appropriate statistical techniques.

Sample of the Study
The sample of the study consists of 64 students of Standard VI. The investigator selected two groups for the experimental study. Out of these, one group was selected as the Experimental group (N=33) and the other group was selected as the Non - Treatment Control Group (N=31).

4. Analysis and Interpretation of the Data
The data was analysed using the scores from the pre - test and post - test for a total sample size of 64 upper primary students. A descriptive analysis was conducted to show the improvement in scores, followed by a t - test to determine the statistical significance of the difference between the two sets of scores.

Comparison of Pre - Test Scores of Non - Treatment Control Group & Experimental Group
This section of analysis compares the pre - test scores of non - treatment control group and experimental group to assess baseline spelling abilities. The mean, standard deviation and critical ratio have been computed and thereby the results are given below in table 1

Table 1: Comparison of pre - test scores of Non - Treatment Control Group & Experimental Group

Variables	Number of Students (N)	Mean	Standard Deviation	t - values	Level of Significance
Non - treatment Control Group	31	10.4	3.4	0.23	**Not significant**
Experimental group	33	10.2	3.5		

Statistical analysis of the data (Table 1) above shows that there is no significant difference (CR=0.23: P>0.05) between the means of pre - test scores of non - treatment control group and experimental group. Hence the hypothesis formulated in this content viz. H_1 There will be a significant difference between the Non - Treatment Control group and Experimental Group with regard to pre - test scores is rejected.

Comparison of Post - test Scores of Non - Treatment Control Group & Experimental Group

This section of analysis compares the post - test scores of non - treatment control group and experimental group. The Mean, Standard deviation and t - value of the post - test scores have been computed and the data is tested for significance as shown in table 2

Table 2: Comparison of Post - test Scores of Non - Treatment Control Group & Experimental Group

Variables	Number of Students (N)	Mean	Standard Deviation	T - Value	Level of Significance
Non- treatment Control Group	31	12.6	2.6	7.08	Significant at 0.01 level
Experimental group	33	16.8	2.1		

Statistical analysis of the data (Table 2) above shows that there is significant difference (CR=7.08: P<0.01) between the t - test of the mean of post - test score of non - treatment control group and experimental group. Hence hypothesis formulated in this content viz, H_2 There will be a significant difference between the Non - Treatment Control group and Experimental Group with regard to post - test scores is accepted.

Comparison of post - test and delayed post - test scores of Experimental Group

This section of analysis compares the post - test and delayed post - test scores of experimental group. The Mean, Standard deviation and t - value of the post - test and delayed post - test scores have been computed and the data is tested for significance as shown in table 3

Table 3: Comparison of post - test and delayed post - test scores of Experimental Group

Variables	Number of Students (N)	Mean	Standard Deviation	T - Value	Level of Significance
Post - test	33	16.8	2.1	1.62	Not significant
Delayed Post - test	33	15.9	2.4		

Statistical analysis of the data (table 3) above shows that there is no significant difference (CR=1.62: P>0.05) between the t - test value of post - test score and delayed post - test scores of experimental group. It can be concluded from the analysis that the scores are more or less equal. Hence hypothesis formulated in this content viz, H_3 There will be a significant difference between the means of post - test and delayed post - test scores of the Experimental Group is rejected.

5. Discussion

The results shows that students in the experimental group who were taught using the chunking strategy significantly improved their spelling scores from pre - test to post - test, with a mean score increase in the post - test. In contrast, the control group showed only a marginal improvement in the post - test. The t - test confirmed that the difference between the experimental and non - treatment control group was statistically significant, demonstrating the effectiveness of the chunking strategy.

The delayed post - test further demonstrated the lasting effects of chunking, with the experimental group maintaining an almost equal average score three weeks after the post - test. This suggests that chunking not only enhances immediate learning but also contributes to the retention of spelling knowledge over time.

6. Conclusion

This study demonstrates the significant benefits of using the chunking strategy in teaching spelling to upper primary students. The experimental group showed substantial improvement in spelling performance compared to the control group, and these gains were maintained in the delayed post - test, indicating that chunking is effective not only for immediate learning but also for long - term retention. The findings of this study have important implications for educators. The chunking strategy is a simple yet highly effective method for improving spelling performance, particularly for complex and irregular words. Teachers can incorporate chunking into their daily spelling lessons to help students break down difficult words and recognize patterns, ultimately leading to better retention and long - term mastery of spelling.

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