

**Effectiveness of Cognitive Strategies on
Developing Reading Skills Among
Primary School Students**

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EFFECTIVENESS OF COGNITIVE STRATEGIES ON DEVELOPING READING SKILLS AMONG PRIMARY STUDENTS

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INTRODUCTION :-

The author is always interested in sending her school children for competitive examination. From the feedback on their performance, it was found that the students do find it difficult even in reading the question papers, since they lack in reading comprehension.

World Health Organisation in 1997 highlighted the importance of mental health and propounded the following ten skills namely

1. Decision making
2. Problem solving
3. Creative thinking
4. Critical thinking
5. Effective communication
6. Interpersonal relationships
7. Self awareness
8. Empathy
9. Coping with stress
10. Coping with emotion

In the above said skills language plays a very important role. The basic aim of teaching English, it is believed, is to enable the student to develop skills of listening, speaking, reading and writing English. It is while speaking and writing that the problem of intelligibility and acceptability arises. Correctness based on internationally accepted standards can not be ignored by us, for today the compulsions of learning English in India arise not only out of political reasons, but also out of the need to enhance knowledge especially in science and Technology. The teachers of English language should, therefore undertake the task of giving a sound knowledge of English to our students, keeping in mind a comprehensive view of the function of English today in India as well as the world. A student must be equipped not only to get information and knowledge from books written in English, but must also have the ability to use the language for intelligent discussion and communication. So the student must learn English in a way that the sentences he produces, both written and spoken, must be clearly understood and must be adequate for the context.

The lack of study skills training in our nation's schools is woefully obvious, whether the school is in the poorest section of town, of the richest, in the inner city or suburb, public, or private, elementary, junior, high or high school.

Today's mark oriented examination and mark based admission in the educational institutions wane reading habit in students. Looking into these factors the researchers were intended to bring awareness towards the need of the hour, i.e., the importance of reading and its comprehension.

Here the investigators wanted to state what is Reading. It is the reader's reaction to graphic configurations, visual substance and then associating these visual symbols with meanings. Reading is, what it consists of, and on what principles the writing system that they are faced with is constructed; they then need to exploit this knowledge to achieve a reading performance that becomes increasingly fluent and error-free and in which many of the component skills involved become increasingly automatic.

Effective Communication is possible through the development of reading skills. According to O Malley, Cognitive strategies help learning effective. Hence the authors wanted to develop reading skills among primary school students using cognitive strategies.

OBJECTIVES :-

Following are the objectives of the research investigation,

1. to find out the present level of reading skill on the following reading comprehension components phonological skill, morphological skill, cognitive skill and the speed of reading.
2. to identify the strategies in order to develop reading comprehension.
3. to apply the cognitive strategies that would facilitate acquisition of reading comprehension skills.
4. to identify the effectiveness of the cognitive strategies in developing the reading comprehension of the students.

METHODOLOGY:-

The investigators adopted Experimental method to study the effectiveness of applying cognitive strategies on reading comprehension among primary school children. Experimentation is considered to be the scientifically sophisticated research method. It is defined as observation under controlled conditions. It studies observable changes that take place in order to establish a cause and effect relationship.

STATEMENT OF THE PROBLEM :

Acquisition of reading skills in the mother tongue or any second language are dependent on several factors, which may be classified as personal and environmental. The teachers of English in our schools today do very little to improve matters in respect of most of the factors. However they are in a position to improve their classroom climate, at least as far as his/her own personality and method of teaching reading are concerned; they can also exercise effective control over some of the personal factors, e.g., the pupils command of language and their knowledge of the grammatical forms of the language as well as the culture of the linguistic group, but they should know their pupil's level of mastery of the English vocabulary and its basic grammatical form. At an advanced level, they should also have a knowledge of their difficulties in understanding the cultural patterns of the English speaking people of the world. At the primary stage the first two factors, i.e. the pupils command of vocabulary and knowledge of the grammatical devices used in the language for expression of meaning are, perhaps, of greater importance. So the investigators thought that it would be worthwhile to investigate into their relative importance in respect of the enhancing pupils achievement in reading comprehension.

Modern times have triggered an unprecedented thirst for information. It is generally recognized that one of the main causes for the poor standard of our High School pupils is the lack of reading habit on their part. Since increasing importance is given to the teaching of English as a library language in our country today, any attempt to make a study of the factors contributing to the development of reading skills as well as the difficulties experienced by our students in reading English at the Primary School level would be of great value.

SIGNIFICANCE OF THE STUDY:

The net result of the present investigation on reading comprehension may help the teachers to make their subjects interesting to the students. Reading would become an assimilation of thought, more meaningful and purposeful.

Hence, students will understand questions to be answered, facts to be remembered, ideas to be grasped and they will get the pleasure of following well written content. Hence the teacher can enhance the level of reading comprehension among the students.

SCOPE OF THIS STUDY :

It has within the range the various aspects of comprehending the given lesson in the prescribed prose-text. At the same time the focus of the topic is narrow enough to limit the attention to reading and reading comprehension. The study specifies the potentials of the teaching strategies and adopts them to make learning of the detailed prose-texts effective in terms of reading comprehension. Following hypotheses were formulated in this Research study.

HYPOTHESES:

1. There is significant mean difference between the pre-test and post test scores on reading comprehension because of the application of cognitive strategies.
2. There is significant mean difference between the pre-test and post test scores on reading speed because of the application of cognitive strategies.

In order to test the above hypotheses, the following assumptions were made :

ASSUMPTIONS OF THE STUDY:

1. In general the concept "Reading Comprehension" is not perceived in the right sense.
2. As the present system of education is mark oriented, "Reading" is deteriorating.
3. It is possible to make students understand "Reading" in the right aspect and also its value.
4. It is possible to train students in the use of cognitive strategies that facilitate learning.
5. It is assumed that there will be an effect on Reading Comprehension by the application of cognitive strategies.

DELIMITATIONS:

The investigator's investigation happened to be in the month of February which is the fag end of the academic year in a school. This is the time where teachers are much serious towards the completion of the syllabus. Hence, the investigators planned their intensive course for a month.

Since the investigator expected complete attention from the experimental group they selected a quiet room with a door. And they were successful. As per the expert's view, anything can be grasped quickly, the investigator s selected the morning hours for ~~for~~ reading session, and conducted tests in the afternoon.

Everyday students spared two hours a day, one for listening and reading participations and the other for the tests. The afternoon sessions began with silent reading where the speed was also calculated. As soon as they finished their writing tests, they were called for phonological tests.

The investigators divided the components of reading skill into three heads, other than the calculation of reading speed. The phonological skill was assessed again under two heads i.e. 1) Reading aloud and 2) punctuation. The students were directed to observe the teachers' pronunciation and tried to imitate. Their pronunciation, stress, pause and intonation were graded. They were also given passages to punctuate.

The morphological skill is mainly on word recognition skill and hence tests were given under five headings namely 1) dictation 2) conceptual meaning 3) opposite meaning 4) puzzle and 5) anagram. Through these the students understood the importance of word's meanings and opposites.

SAMPLE:

The investigator selected standard V students for her study. According to the investigator, the exposed reading comprehension skill help them in boosting up their progress in high School Education. The investigator selected only 27 students out of 40 in class V who were really in need of reading comprehension. With this adequate sample size they implemented the design for research. As it was a small group they were able to give total concentration to the whole group.

EXPERIMENTAL STUDY :

“Experimentation is the name given to the type of educational research in which the investigator controls the factors to which a child or group of children is subjected during the period of enquiry and observes the resulting achievement”. There are different patterns of experimental research based on the groups used as individual or single group, parallel or equated groups and rotational groups. In this study the investigators adopted single group, pretest, treatment post test design.

The reading comprehension is assessed on three different components other than the calculation of reading speed. The student's pronunciation, stress, pause and intonation were assessed in the pretest and were directed to observe the teacher.

They were again assessed in the post test at the end of the training session. They were also given passages to punctuate. The morphological skill was tested mainly on word recognition skill and hence the pretest and post tests were given under five headings namely 1) Dictation, 2) conceptual meaning 3) opposite meaning 4) puzzle and 5) anagram. Through these the students understood the word's meaning and opposites. Moreover they realized the contextual meaning other than the dictionary meaning and they were also trained in the application of the cognitive strategies in both Morning and Evening programmes in the Experimental Study. The details of the Every day programme with the application of cognitive strategies were presented herewith •

MORNING SESSION

PROGRAMMING		APPLICATION OF COGNITIVE STRATEGIES
1. Reading aloud	-	Guessing / Inductive
2. Indepth Integration	-	Resourcing
3. Utilization of schema or prior Knowledge	} -	Transfer
4. Interference & Facilitation	-	Clarification & Verification
5. Cognate Recognition	-	Deduction

AFTERNOON SESSION

PROGRAMMING		APPLICATION OF COGNITIVE STRATEGIES
1. Silent Reading	-	Selective Attention
2. Thinking aloud	-	Recognition and Recall
3. Monitoring Process on,		
i. Phonological Skill	-	Auditory keywords
ii. Morphological Skill	-	Grouping
iii. Cognitive Skill	-	Transfer, Inferencing Recombination & Translation
iv. Speed Monitoring	-	Internalization

Ultimately the investigator's target was to see whether the students comprehend the passage. To assess, the cognitive skill was divided into four headings. i.e. 1) Literal Level. 2) Inferential level. 3) Correlative level, and 4) Evaluative level. This helped them to think on any information and moreover they were forced to recall their previous experience or gained knowledge in order to correlate or evaluate.

Every subheading in the components was evaluated for hundred marks and the consolidated percentage for each skill was taken into account. It is done for each test and for all the tests together. The corrected answer scripts were given to the students immediately in the very next session and hence the investigators gathered instant feedback. The difference between the pretest and post test was the yardstick for identifying effectiveness of cognitive strategies on reading comprehension.

With this adequate sample size they implemented the design for research. As it was a small group she was able to give total concentration to the whole group.

THREATS TO EXPERIMENTAL VALIDITY:

Bradky and Bryant (1983) have shown that exercises in phoneme manipulation lead to improvements in children's reading. There have been many differing claim about the casual connections between various linguistic and cognitive deficits and dyslexia. Scribner and cole in their study (1981) found that familiarity with differnt scripts gave their users different cognitive advantages, like grammatical awareness and memory ability. These cognitive advantages, however, could be desired from the social circumstances surrounding the learning of the script. yet they were able to show that it was schooling that was the primary determiner of success in logic and reasoning tasks.

EXPERIMENTAL VALIDITY:

In educational experiments, a researcher has to face some impediments which are threats to external as well as internal validity. In order to control such variables, one has to be cautious in one's experiment.

In any behavioral experiment, a number of factors that have been manipulated (independent variables) have a genuine effect on the observed consequences in the experimental setting. For example maturation, selection bias, unstable instrumentation, testing, experimenter bias etc.

The experiment lasted for thirty days. So the question of maturation did not arise.

The time of the researcher's experiment was at the fag end of the academic year. She selected standard V as they are going to enter High School. The investigator selected only 27 students out of 40 who were really in need of reading Comprehension.

Unreliable instruments used to measure aspects of behavior are threats to the validity of an experiment. In this study, actual performance of the students was evaluated. All the four skills assessment namely, phonological, morphological, cognitive and Reading speed, were awarded scores. The evaluation scale was carefully evolved.

The students were evaluated for all the tests, conducted. Evaluation was done on the same day and the feed back was given to the students the very next day. So the threat to internal validity was overcome.

RELEVANCE OF EXPERIMENT TO RESEARCH DESIGN:

As reading involves knowing the language and its meanings, the investigator divided the components of reading skill into six headings directed towards phonology, morphology, syntax, comprehension, communicative proficiency and speed. After framing the specification for the above headings, the investigator found repetition and moreover they expected clarity. The other factors they had taken into consideration are,

1. the reading test result should give information indicating the extent to which the teacher's instructional objectives in reading are being achieved.
2. the data obtained should be utilized in the improvement of the reading programme.
3. the testing of reading should be an integral part of the regular testing programme within the school. Hence the six headings were reduced to four.

Reading with understanding expects the reader to pick up the tone of the writer. In accordance with, pronunciation, stress, pause and intonation, they were assessed in the oral test and also through punctuation. The phonological skill test stands first in the components of reading skill. The flair for language needs mastery over words. Hence to assess the morphological skill tests like word puzzles, multiple choice questions and dictation were included. The chief agent in reading is the mind: a great deal of prior knowledge is brought to efficient reading. It also amounts to cognitive skills.

Activities were devised as natural as possible i.e. close as possible to what one would naturally do with the text. Students were made active in the reading process by presenting them with decision making activities or using the information in the passage to find a solution, make a decision or solve a problem. These were all graded under four headings, namely 1) Literal level 2) Inferential level 3) Correlative level and 4) Evaluative level. Improving reading at this level is a matter of developing speed without sacrificing comprehension. Silent reading session was provided all the days to pick up speed and it was graded with a number of words per minute.

CONSTRUCTION AND VALIDATION OF TOOLS:

The evaluation of the components of reading skill was drawn for each individual. The chart was on four headings.

1. Phonological skill - was assessed on two main headings a) reading aloud and b) punctuation and both were summed up.
2. The morphological skill was divided into five a) Dictation b) conceptual meaning c) Opposite meaning d) puzzle and e) Anagram. Each one was evaluated for 100 and they were summed up and converted into percentages.
3. The cognitive skill was assessed on four into levels namely a) Literal level b) inferential level c) correlative and d) Evaluative level understanding. The reading speed was calculated for words per minute and each child was assessed for all the ten tests. After establishing the content validity of the tools, reliability was established by using KR 20 methods. Tools were found to be highly reliable ($r > 0.8$). Hence the tools possessed the validity and reliability.

SCHEME OF DATA ANALYSIS:

The researcher examined the skill of reading under four specified aspects. yet the scoring of those were not in uniform. There were certain factors which were to be keenly observed. As the selected reading materials for the experiments were of different types, the weightage given for testing was different from each component to the other. The early part of the experiment carried light materials where phonology and morphology were given much importance. Passage with facts and information were concentrated on the cognitive skill. Hence towards the end, in scoring, the researchers had managed to bring uniformity at the end. All the odd scores were converted into percentages. The researchers focussed their analysis on different angles. Each skill had sub units. They were all put together and were analysed component wise for all the students. Descriptive, relational and differential, statistical analysis were attempted.

DESCRIPTIVE ANALYSIS:

Distribution of students pretest and post test mean score in percentages on the components of reading skill.

Students mean scores in the Pre test and post test :

Student Number	Mean Pretest	Mean Post test	Pretest Reading Speed Words / Mt	Reading Post test
01.	37.77	42.50	110	197/1mt
02.	47.35	53.16	135	147/1mt
03.	35.00	54.00	145	200/1mt
04.	35.00	37.50	135	115/1mt
05.	44.00	55.66	180	243
06.	33.00	62.50	185	194
07.	33.00	62.00	250	160
08.	39.00	56.00	200	170
09.	63.10	75.40	200	310
10.	54.00	52.00	160	176
11.	17.40	17.50	170	253
12.	53.00	5.60	250	278
13.	39.00	60.00	250	256
14.	66.00	83.60	262	240
15.	77.00	79.50	250	213
16.	64.00	79.00	125	192
17.	54.00	70.00	194	198
18.	31.00	35.00	154	198
19.	40.00	58.00	184	149
20.	47.00	60.00	230	238
21.	17.00	41.00	122	217
22.	57.00	72.00	172	165
23.	50.00	62.50	131	166
24.	26.00	37.50	141	182
25.	53.00	54.00	141	198
26.	61.00	57.00	190	187
27.	57.00	57.00	204	268
TOTAL	1230.62	1479.92	4870	5510
MEAN	45.58	54.80	180.40	204.10

The above table describes the pretest and post test mean scores of all the students in reading comprehension and reading speed.

DIFFERENTIAL ANALYSIS

In order to find out the significant difference between the pretest and the post test mean scores on reading comprehension, the 't' test for correlative small group was applied.

The obtained 't' value of 2.38 is greater than the theoretical 't' value of 2.0560, hence it is concluded that there is significant mean difference between pretest and post test mean scores on reading comprehension. Hence the null hypothesis is rejected.

In order to find out the significant difference between the pretest and the post test mean scores on reading speed the 't' tests for correlative small groups were applied.

The 't' value was found to be 2.18 which is greater than the theoretical 't' value of 2.056. Hence it is concluded that there is significant mean difference between the pretest and the post test scores on reading speed.

In addition to the application of parametric statistical techniques non parametrical statistical technique was applied to test the significant difference between the pretest and the post test scores on Reading Comprehension and Reading Speed, Mann Whitney U test was also applied and the same result were obtained which showed the significant mean difference between pretest and post test scores.

FINDINGS:

1. There is no improvement in the phonological skill.
2. The improvement in morphological skill is from 53.86% to 72.06%.
3. The positive comprehending capacity of the children is shown in the pretest - post test scores variation, from 45.58% to 54.80%
4. The Reading speed is increased for all the children from 169 words per minute to 204 per minute.
5. There is significant mean difference between the pretest and post test scores on reading comprehension because of the application of cognitive strategies.
6. There is significant mean difference between the pretest and post test scores on reading speed. The number of words read for a minute is increased from 169 to 202 because of the application of cognitive strategies.

**DISTRIBUTION OF STUDENTS IMPROVEMENT IN VARIOUS SKILLS
OF READING COMPREHENSION**

S. No.	Phonological Skill		Morphological Skill		Cognitive Skill		Reading Speed	
	Pre- Test	Post- Test	Pre- Test	Post- Test	Pre- Test	Post- Test	Pre- Test	Post- Test
1	22.27	32.50	44.94	60.00	46.12	45.00	110	197
2	36.50	47.50	53.00	56.35	39.00	60.00	135	147
3	43.00	35.00	40.00	84.50	23.00	42.50	145	200
4	31.25	15.00	43.50	60.00	30.00	37.50	135	115
5	60.00	42.50	63.00	84.50	44.00	40.00	180	243
6	51.00	40.00	74.70	95.00	33.00	52.50	185	194
7	36.25	32.50	36.00	96.00	27.00	57.50	250	100
8	43.00	35.00	36.00	79.50	39.00	52.50	200	170
9	61.25	55.00	68.00	86.00	61.00	85.00	200	310
10	57.50	40.00	68.00	50.00	37.00	65.00	160	176
11	18.75	7.50	22.41	25.00	11.00	20.00	170	253
12	53.00	35.00	63.00	54.50	42.00	77.50	250	278
13	35.00	45.00	46.00	81.50	37.00	52.50	250	256
14	80.00	72.00	66.00	96.00	56.60	82.50	262	240
15	81.00	62.50	82.00	96.00	68.00	80.00	280	213
16	64.00	67.50	68.00	89.50	61.00	80.00	125	192
17	57.50	47.50	62.00	84.50	41.00	77.50	194	203
18	33.00	37.50	35.00	33.00	24.00	35.00	154	198
19	42.00	22.50	46.00	89.50	32.00	62.50	184	149
20	47.50	32.50	64.70	91.00	27.71	55.00	230	238
21	14.00	9.00	25.00	18.30	12.00	15.00	122	217
22	54.00	36.00	61.00	90.00	55.47	90.00	172	165
23	51.00	22.50	58.00	90.00	40.76	75.00	131	166
24	25.00	27.50	35.23	77.90	19.00	55.00	141	182
25	42.50	27.50	75.00	77.90	42.00	55.00	141	198
26	61.25	57.50	69.00	46.00	52.43	67.50	190	187
27	52.50	32.50	48.63	53.00	50.00	67.50	204	268
	1254.02	1017.00	1254.31	1945.65	1051.09	1585.00	4562	5455
	46.45%	37.69%	53.86%	72.06%	38.93%	58.70%	169	202

The Above table explain every Students' pretest and posttest scores on all the skills concentrated.

EDUCATIONAL IMPLICATIONS:

1. In order to develop phonological skill, instructional Technologies can be used in class room. Using audio-visual aids will enhance proper pronunciation.
2. Class room teaching would be more effective if it has discussion, seminars and the like. More interactions with children will help them to make use of their previous experience, and knowledge to understand the text well.
3. This in turn will help the children infer and evaluate the material in hand.
4. Reading aloud will help cognitive appraisal which will result in proper comprehension in reading speed. Hence students should be oriented towards Reading aloud techniques


CONCLUSION :-

The set pattern for reading comprehension fits into the process of thinking. Since thinking plays a pivotal role in learning, it has to be nourished for reading comprehension. Development of reading skills is not only for language but also for all other subjects. The teacher's of today should realize the implications and they should be innovators by incorporating cognitive strategies, communicative tasks, instructional design towards facilitating reading comprehension.

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