

Research Projects

Effect of Neurocognitive Strategies in Improving the Retaining Capacity among children at Elementary Level in Sivagangai Dist.

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NEED FOR THE STUDY

Considering “teaching as a noble profession” the Indian society calls the teachers as ‘guru’ and the teachers are considered as the remover of darkness. Teachers are capable of leading humanity to divinity (Rajput,J.S and Walia,K(2002).

There are so many innovative strategies in teaching learning and retaining the concept but teachers are not able to bring desired changes among the students. The reasons for that may be many but the investigator thinks that the lack of awareness on brain compatibility functions in learning and reading may be one of the reasons.

A teacher must know both psychological distress and concrete problems in teaching. The neurocognitive strategies help the teachers to interrelate the thoughts, emotions and behaviours. Hence, an attempt was made to know to what extent the effect of neurocognitive strategies were effective in improving retaining capacity among students. So the investigator has taken an attempt to study the effect of neurocognitive strategies in improving retaining capacity among students.

OBJECTIVES

- ❖ To assess the level of retaining capacity among the STD VIII students.
- ❖ To find out the effectiveness of neuro cognitive strategies (NCS) in improving the retaining capacity among STD VIII students.
- ❖ To find out the significant difference in the achievement score, and the neurocognitive intervention score if any, between the pre-test and post-test.
- ❖ To find out the effect of neuro cognitive strategies (NCS) in improving the retaining capacity and their achievement test score among STD VIII students between the selected intervening variable.

METHODOLOGY

The present project study is based on parallel group experimental design. It provides a systematic and logical way of answering the research questions.

SAMPLE

The sample was drawn by purposive and convenient sampling method. The sample was collected from 10 schools, under three categories – management, status of the school and locale. 20 Students studying in standard VIII at upper primary level were selected from these ten schools.

RESEARCH TOOL

In the present study, the investigator used two types of tools.

Tool:1 A Questionnaire for NeuroCognitive Intervention Strategy designed by NIMHANS (National of Mental Health and NeuroScience) was modified by the Researcher for retaining capacity of the children.

Tool:2 Achievement Test for Standard VIII

INTERVENTION PROCESS

Pre-test was conducted to both the control and experimental group.

Based on these principles, the experimental group students were grouped as

Group -1 Student whose sensory information does not reach the cortex.

Group -2 Students whose sensory information reached the cortex and the signals have been weekend and the learning process is incomplete.

Group -3 Students whose sensory stimuli reached the cortex but the learning process is in a distorted manner.

The investigator played a vital role in encouraging the students to do classroom activities with greater attention. The investigator focused on what children need to learn and what type of help required to enhance their ability to learn. It is a cognitive initiative by the researcher to bring awareness on brain function and brain based activities that helped them to retain the information successfully. The investigator selected the following techniques to strengthen the memory functions of the students.

- ✓ Understanding and Remembering

- ✓ Activation of Prior Knowledge
- ✓ Maintenance Rehearsal Versus Elaborate Rehearsal
- ✓ Multi-Sensory and Multi Format Instruction
- ✓ Interference&Metamemory
- ✓ Episodic and Semantic Memory Systems
- ✓ Perceptual and Conceptual Priming
- ✓ Encoding and Retrieval Practice
- ✓ Retrieval Cues and the Encoding Specificity Hypothesis

These techniques are classified into schema, implicit memory, explicit memory, sensory memory and cognitive scaffolding. The investigator introduced various cognitive activities like Mnemonics, Association, Chunking, etc. A particular task was introduced to the experimental group and they were encouraged to do the task. Based on the afore stated technology the experimental group was involved in carrying out different learning task for a period of eight weeks.

Brain based activities were given to standard VIII students in their subjects and the students carried out these activities in their classes. After the completing the treatment post -test was conducted and the data were scored for analysis.

STATISTICAL TECHNIQUES USED

The data were collected and the analysis of data was carried out in the following steps.

- ❖ Descriptive analysis
- ❖ Differential Analysis
- ❖ Regression Analysis

FINDINGS

- The experimental group Neurocognitive intervention strategies in pre-test mean score and the SD are 35.73 and 4.72 and the post-test mean score and SD are 56.40 and 8.80 respectively.
- The experimentalgroup Neurocognitive intervention strategies score in post-test is higher than the level of pre-test. It implied that the Neurocognitive intervention strategies (NCS) have influenced positively in the retaining capacity of the students.
- The experimental group of Academic achievement in pre-test mean score and the SD are 28.50 and 17.37 and the post- test mean score and SD are 49.74 and 15.63 respectively..

- The experimental group there is no mean difference between boys and Girls in their level of improvement in the retaining capacity through Neurocognitive intervention strategies.
- The levels of improvement in the retaining capacity through Neurocognitive intervention strategies in rural school children are greater than the urban school children in the experimental group.
- The experimental group levels of improvement in the retaining capacity through Neurocognitive intervention strategies in High School students of the experimental group are greater than the other two groups. Middle schools and High Schools are greater than the Hr. Sec. Schools.
- The levels of improvement in the retaining capacity through Neurocognitive intervention strategies in aided school children of the experimental group are greater than the government school children.
- Regression on the post-test scores of the male inferred that the every corresponding increase in the unit on retaining capacity through Neurocognition was contributed by the variables.
- The following regression equation has been formed to predict tested Neurocognitive intervention process in terms of the five variables.

$$Y = -1.054 + 0.260 x_3 + 0.241x_5 + 0.234 x_1 + 0.224 x_4 + 0.205x_2$$

Where

y = Post-test total of male.

x₃ = Schema ,

x₅ = Implicit Memory

,x₁ =Explicit Memory

x₄ =Cognitive Scaffolding

x₂ = Sensory Memory

Thus, the predictability on the teaching competence is mainly contributed by the dimensions, Schema, Implicit Memory and Explicit Memory in the order of weights.

- Regression on the post -test scores of the female showed that the every corresponding increase in the unit on retaining capacity through Neurocognition was contributed by the variables.
- The following regression equation has been formed to predict tested Neurocognitive intervention process in terms of the five variables.

$$Y = -1.054 + 0.229 x_3 + 0.229 x_4 + 0.220 x_2 + 0.216 x_5 + 0.211 x_1$$

Thus, the predictability on the teaching competence is mainly contributed by the dimensions, Schema, Cognitive Scaffolding and Sensory Memory in the order of weights.

EDUCATIONAL IMPLICATIONS

From the findings of the present study, the post -test mean score was increased by 56.04%.

- Knowing how the brain works best allows educators to create an environment that gives the student a higher probability of success in learning. Using the following brain-based learning principles can improve our students' performance in class.
- Students have different learning styles.
 - 50% are visual learners and prefer pictures, charts, and written text over lectures.
 - 30% are kinesthetic learners and need more tactile (hands-on) and movement-based activities.
 - 20% are auditory learners and do best when they talk about what they are learning.
- Teachers must make use of the classroom space to develop mindfulness of the students.
- Brain-based learning helps students relax in order to improve alertness.
- Stimulate skills to improve the experience.

RECOMMENDATIONS

- Central and State Governments have taken a number of initiatives to improve the learning process, retention and achievement of children. There is a need to introduce this technique to students to improve their learning process.
- Theoretical aspects of Neurocognitive strategies can be introduced as a unit of the core subject in the teacher education curriculum (core subject-teaching-learning process).

- Awareness programmes on Neuro Cognitive Strategies is recommended in AWPB of the year 2014-2015 for administrators.
- The practical inputs regarding Neurocognition should be taken up through subject specific programmes such as lesson plan writing, observation classes and practice teaching for DTEd students in Sivagangai district.
- The same can be tried at various levels and also in in-service teacher training programmes

SUGGESTIONS FOR FURTHER RESEARCH

- The present study was confined to the sample, of elementary students, Sivagangai district. It is suggested that the above study may be undertaken with secondary and higher secondary school students.
- The present investigation was carried out to find out the role of neurocognitive intervention strategies on improving retaining capacity of the students. It could be replicated with other variables such as retrieval capacity, creativity ability etc. And also, it could be replicated with other variables namely personality, motivation and emotion of learning etc.,
- The present investigation was carried out to find out the role of neurocognitive intervention strategies in improving retaining capacity of the students. It is suggested that the above study may be conducted for B.Ed, trainees.
- The study may be carried out to compare the impact of neurocognitive intervention strategies on hyperactivity disorder students.

Effectiveness of Constructivist Learning Cards in enhancing reading skills in English at Elementary level

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Need for the Study

The prime duty of the teacher is not to impart textual information but to sensitize child and kindle the curiosity of the child. Therefore, it is imperative on the part of the teacher to deviate from the conventional method of imparting the textual content in a classroom. Annual Status Educational Report (ASER2014) stated that the students at elementary level encounter difficulties in reading. The methods and approaches in English Language teaching and learning must be interactive, child centered, and need based in order to create interest among the students. Constructivist learning cards enrich the student's performance in reading. So the investigator has taken an attempt to study the effect of Constructivist Learning cards in enhancing reading skills in English at elementary level

OBJECTIVES

- To design Constructivist Learning Cards to enhance the reading skill in English for STD VI students.
- To implement constructivist learning cards to enhance the reading skill in English for VI STD students.
- To find out the effectiveness of constructivist learning cards in enhancing the reading skill in English for STD VI students.

METHODOLOGY

The present study is based on Parallel group Experiment design. The investigator conducted pre- test for both control group and experimental groups and assessed the reading skills among the students. The investigator identified reading difficulties among the experimental group students. The investigator prepared and implemented Constructivist Learning Cards to the experimental group students for 30 days. Then the investigator conducted post- test for both control group and experiment group and assessed the reading skills among the students.

SAMPLE

The sample was selected by Purposive and Random sampling technique. The sample collected from selected 5 schools in sakottai block. 10 Students from each school studying in standard VI at upper primary level were selected, five students for control group and five student for experimental group, totally 50 students were taken for the study.

TOOL

The investigator used two types of tools to assess the reading skills of the students. The first type of tool was Observation schedule and the second type of tool was Questionnaire developed by the investigator with various components to assess the reading skill. Observation schedule was for assessing oral reading skills. Questionnaire was for assessing comprehensive reading skills.

INTERVENTION PROCESS

- The investigator prepared learning cards in the perspectives of Constructivism.

- Constructivism states that learning environments and tasks are relevant , realistic, and contextualised.
- Teachers were encouraged to play the role of facilitators to ensure learner-centered teaching learning processes. Learning process should be active and constructive. Learning needs be flexible, scaffolding, practical, and based on prior knowledge.
- Learner builds knowledge with the help of the activities. Learning occurs through interactions.
- Based on the above constructivist principles the investigator prepared Constructivist learning cards to enhance reading skills among the students of Std VI.
- Constructivist learning cards consist of ten sets of cards. Consonant sound card, Vowel sound card, Word making card, Sentence making card, Word stress, Sentence stress card and Story cards.
- Each card has activities for the students to enhance their reading skills. For example, in the Story cards the story was given to the students in a jumbled order. The students were asked to rearrange the jumbled sentences into a story.
- Students were asked to draw a story map and summarising a story. They answered the questions given in the cards. The questions were based on skimming, scanning, vocabulary, inferencing and understanding skills of the students.

Other cards were focused on to enhance oral reading skills in English among the Std VI students. The intervention was carried out 30 days.

STATISTICAL TECHNIQUE

The data collected were analyzed by using descriptive and inferential analysis. The statistical technique- 't' test was employed for analysis and interpretation of data.

FINDINGS OF THE STUDY

The scores secured by the students collected by the investigator are computed for analysis. The relevant data collected and analysed as follows.

- The pre test Mean score and SD of control group students in oral reading skills is 14.84 and 1.77. The post test mean and SD is 15.00 and 3.16. This proved that traditional way of reading strategies has very less (ie 0.16) improvement in the control group students.
- The pre - test Mean score and SD of Experimental group students in oral reading skills is 15.36 and 3.46 and post- test mean score and SD is test Mean score and SD is 36.72 and 5.22. It showed that the post- test score is greater than pre- test score. This proved that the constructivist cards enhance the oral reading skills in English among the std VI students.
- The post- test Mean score and SD of control group is 15.00 and 3.16 and the experimental group students in the post -test level is 36.72 and 5.22 respectively. Mean of the experimental group students are greater than control group students. It is implied that the traditional way of reading strategies has less significant in improving oral reading skills in English among the control group students . Constructivist learning cards enhance the oral reading skills among the experimental group students after treatment .This showed constructivist learning methodology enhance the reading skills among sixth std students.
- The pre - test Mean score SD of control group students is 9.64 and 1.75. The post -test Mean and SD is 9.12 and 1.45. This proved that there is no more improvement in the comprehensive reading skill of the control group students.
- The pre- test Mean score and SD of Experimental group students are 8.96 and 1.24 and post- test mean score and SD is 16.24 and 2.16. It showed that the post- test score is greater than pre test score. This proved that

constructivist cards enhance the comprehensive reading skills in English among the std VI students.

- The pre- test Mean score and SD of Experimental group students are 8.96 and 1.24 and post- test mean score and SD is 16.24 and 2.16. It showed that the post- test score is greater than pre- test score. This proved that constructivist cards enhance the comprehensive reading skills in English among the std VI students.
- The pre- test Mean score and SD of control group students is 9.64 and 1.75. The pre- test Mean score and SD of experimental group students is 8.96 and 1.24 at pre- test stage.
- The post- test mean score and SD of control group and experimental group students in comprehensive reading skills in post- test. The Mean and SD of experimental group students is greater than control group students. It is implied that the experimental group improved the comprehensive reading skills in English. Constructivist learning cards enhance the comprehensive reading skills among the experimental group students at post-test. The obtained 't' value (1.024) is greater than the table value at 0.01 level of significance between the pre and post of control group. Hence there is no significant mean difference between pre-test and post-test scores of control group in English oral reading skill. Hence the hypothesis was accepted.
- The obtained t' value (7.748) is greater than the table value at 0.01 level of significance. The post-test is greater than the pre-test score. Hence there is a significant difference between pre-test and post-test scores of experimental group in English oral reading skill. It explored that the constructivist learning cards enhance the oral reading skill among students.
- The obtained 't' value (13.562) is greater than the table value at 0.01 level of significance between the post- test of control group and experimental group. Hence there is a significant mean difference between post-test of control group and experimental group in English oral reading skill.

- The obtained t' value (14.510) is greater than the table value at 0.01 level of significance. The post-test score is greater than the pre-test score. Hence there is a significant difference between pre-test and post-test scores of experimental group in English oral reading skill. It evidenced that the constructivist learning cards enhance the oral reading skill among students.
- The obtained t' value (0.642) is greater than the table value at 0.01 level of significance between the pre test of control group and experimental group. Hence there is no significant mean difference between pre-test of control group and experimental group in English comprehensive reading skill.

The obtained t' value (28.954) is greater than the table value at 0.01 level of significance between the post- test of control group and experimental group. Hence there is a significant mean difference between post-test of control group and experimental group in English comprehensive reading skill.

IMPLICATIONS OF THE STUDY

- Constructivist learning cards are useful for the teachers to enhance students reading skills in English.
- It is helpful for the students to create interest in reading.
- It reduces the difficulties in reading English faced by the students.
- It is helpful for the teachers to enhance skimming, scanning skills of the students.
- It encourages the students to read English more.
- It increases the other language skills such as writing, listening and speaking among the students. It motivates the students to learn English in an interesting way.
- It increases the achievement of the students in English.

- It gives ideas to the teacher to design various kinds of activities enhance reading skills among the students. It enhances the students self-confidence in reading English.

RECOMMENDATIONS

- It is suggested to conduct a workshop for the teachers to develop Constructivist Learning Cards relevant to their classroom needs.
- It is suggested that the training may be given to the English language teachers to utilise the constructivist learning cards for the students in order to enhance their reading skills.
- It is suggested that the cards may be given to the students studying at various classes.
- It is suggested that the cards may be given to the struggling readers.
- It is suggested that separate reading session may arranged in the schools for the students for practising with the cards.
- It is suggested that training may be given to the DIET students to utilise the cards for the students in order to enhance their reading skills.
- It is suggested that the cards may be displayed in the English Language Lab.