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SUMMARY

5.1 INTRODUCTION

Learning disability

The term learning disability means a severe discrepancy between ability and achievement of a child without any apparent cause. Some of these learning disabilities include difficulties in reading, writing, comprehension, spelling, thinking, arithmetic etc. Due to one or more of these difficulties learning process are severely hampered. Inspite of presence of adequate intelligence the child is not able to achieve.

The term learning disability was first coined by Kirk in 1963 and it refers to the children attending school who have trouble in learning despite the fact that they have no apparent physical, sensory, intellectual or emotional defect. Such children had for years been ignored, misdiagnosed or mistreated by terms such as hyperactivity, hyperkinetic syndrome, hyperactive child syndrome, minimal brain dysfunction, learning disorder, learning difficulty and minimum brain damage.

The American Special Education law, the Individuals with Disabilities Education Act (IDEA, 2002) defines a specific learning disability as:

‘...... a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell or do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia and developmental aphasia. However, learning disabilities do not include learning problems that are primarily the result of visual, hearing or motor disabilities of mental retardation of emotional disturbances or of environmental, cultural or economic disadvantage’

Language disability may be broadly classified into two categories (a) perceptual motor areas and (b) language areas.
Perceptual motor disability is further classified as aphasia, alexia, acalculia, apraxia and agraphia. Language disability can be classified as dyslexia, dysgraphia, dyscalculia, dysphasia, dyspraxia.

Dysphasia or language disorder relates to difficulty in expressing oneself, as well developed language not only means to establish effective communication among the individuals but also to pass the knowledge and ideas to one another. Any deficiency in language retards the learning process and achievement of the child.

Language disorder can be further classified as:
(a) Receptive Language Disorder, that is, the inability to understand verbal language. Due to this reading and writing comprehension abilities are severely affected.

Students with learning disability in reading comprehension may also struggle with basic reading skills such as decoding words, but comprehension is the greater weakness. They can read aloud with little or no difficulty pronouncing words, but they do not understand or remember what they've read. Reading aloud, their words and phrases are often read with no feeling, no change in tone, no logical phrasing and no rhythm or pace. They have difficulty in understanding the important ideas in reading passages. Their phrasing and fluency are often weak. They frequently avoid reading.
(b) Expressive Language Disorder: it is inability to communicate with others. Child may comprehend what he reads but fails to express it.

**Cognitive Approach to Learning Disability**

One important area of growth of a person is cognitive development. And in the cognitive perspective, education is looked upon as a process whereby students become better able to adaptively respond to their environment and to meet their own goals and needs. The cognitive approach focuses on (i) allowing the student to enter the educational process as an equal part (ii) developing of a non-competitive learning situation and (iii) breaking down of systematic pattern of previous failure.
Summary

Any intelligent task is characterized by advance planning, efficiency, economy, appropriate speed, adaptiveness, appropriateness for the context, insight, social value, judgment, focus etc. In children with LD one or more of these aspects break down. Cognitive disorders become more apparent as the child enters the school and face problem in structured learning. Difficulty in reading, writing, mathematical calculations, poor memory affects their performance. These disorders could be treated by the application of cognitive strategies. The cognitive strategies used by the investigator were:

- Self Instructional Technique
- Mediated Learning
- Reciprocal Teaching

Emotional Intelligence

Emotional intelligence refers to the capacity for recognizing the feeling and those of others, for motivating ourselves and for managing emotions well in us and in our relationships.

The term "emotional intelligence" was coined by Mayer and Salovey (1989). They defined it as "the ability to monitor one's own and others feelings and emotions, to discriminate among them and to use information to guide one's thinking and actions".

Anxiety

Anxiety is the sense of uneasiness that is experienced in the individual's relationships with other people (and in his / her relationship to their own conscience). In any situation where the person’s vanity is undetermined, fear arises. The conjunction of this fear with the vanity creates anxiety.

5.2 EMERGENCE OF THE PROBLEM

It has been found through researches that about 13-14% of the school population shows condition of learning disability. Majority of these learning disable students have a primary learning disability in reading and language processing. Some of the learning disabled show the symptoms of slow or inaccurate reading, poor spelling, poor writing, or mixing up similar words.
Summary

As high percentage of these learning disabled students have a primary learning disability in reading and language processing so the problem in language comprehension may affect the performance of the students in other subjects, such as, Science. Science as a discipline includes facts, concepts, explanation, interpretation, translation, reasoning, analysis and many higher order learning and thinking skills. Students face problems in these different areas of science. These areas relate to receptive and expressive part of language communication. The problems in these areas points towards learning disorder or learning disabilities.

It has also been found that emotional intelligence and anxiety affects the achievement of learning disabled students. Going through the related literature, the investigator found the studies showing different results related to emotional intelligence and anxiety. Gerber (2004), Barisonek (2006), Bradshaw (2008), Colston (2008), Izaguirre (2008) and Alvarez & Jose (2009), showed a no or a weak correlation between emotional intelligence and academic achievement. Cyr (2007) studied that there were no substantial evidence of emotional intelligence predicting success.


Afolabi, Ogunmwonyi & Okediji (2009) also studied that the interaction effect of emotional intelligence and need for achievement was not significant F(1, 106) = 2.15; N.S.


Pite (1996), Raju & Asfaw (2009) studied that test anxiety was found to be a non-predictor of achievement in the presence of other variables.
Summary

The prevalence of learning disability among the students and its presumed affect on science subject developed the interest of investigator in the topic. The contradictory studies about emotional intelligence and anxiety created further interest of investigator in the study. Thus the present study was undertaken. The investigator intended to study the effectiveness of cognitive strategies as remedial treatment on achievement of learning disabled students in relation to emotional intelligence and anxiety.

5.3 STATEMENT OF THE PROBLEM

Effectiveness of Cognitive Strategies as Remedial Treatment on Learning Disabled in Relation to Emotional Intelligence and Anxiety

5.4 OPERATIONAL DEFINITIONS

i. Learning disability: Learning Disability as measured by Swarup and Mehta in Diagnostic Test for Learning Disability (1993) in the area of visual and auditory perception (viz. eye & hand coordination, figure ground perception, figure constancy, position in space, spatial relations, auditory perception) and cognitive functions (memory, cognitive abilities, receptive language and expressive language).

ii. Emotional Intelligence: Emotional Intelligence as measured by Ankool Hyde, Sanjyote and Upinder in Emotional Intelligence Scale - EIS (2001). In this test emotional intelligence is defined as the abilities of a person with the characteristics- self awareness, empathy, self motivation, emotional stability, managing relations, integrity, self development, value orientation, commitment and altruistic behavior.

iii. Anxiety: Anxiety as measured by Singh & Gupta in Academic Anxiety Scale of Children (AASC) - 1986 and which relates to teacher, certain subjects like Mathematics, English etc.
5.5 OBJECTIVES OF THE STUDY

The objectives of the study were to:

- Diagnose the learning disabled in specific areas of comprehension in the subject of Science for class VII students.
- Construct and standardize an achievement test in Science for class VII students.
- Study the effect of three cognitive strategies as remedial treatment on achievement of learning disabled.
- Study the effect of emotional intelligence on the achievement of learning disabled students irrespective of the cognitive strategies given to them.
- Study the effect of anxiety on the achievement of learning disabled students irrespective of the cognitive strategies given to them.
- Ascertain the interaction among cognitive strategies, emotional intelligence and anxiety.

5.6 DELIMITATIONS OF THE STUDY

The study was delimited to:

- Students of Class VII studying in Government Model Schools of Chandigarh.
- A few topics of general science of class VII only.
- Three cognitive strategies, that is, Self Instructional Technique, Mediated Learning and Reciprocal Teaching.
- Comprehension problems in the subject of science of class VII.

5.7 HYPOTHESES OF THE STUDY

The study was conducted to test the following hypotheses:

- There is no significant difference in the achievement of learning disabled students exposed to three cognitive strategies.
Summary

- There is no significant difference in the achievement of learning disabled students with high and low Emotional Intelligence irrespective of cognitive strategies.
- There is no significant difference in the achievement of learning disabled students with high and low Anxiety levels irrespective of cognitive strategies.

Interactional Hypotheses

First Order Interaction

- There is no significant interaction between cognitive strategies and emotional intelligence on academic achievement of learning disabled students.
- There is no significant interaction between cognitive strategies and anxiety on academic achievement of learning disabled students.
- There is no significant interaction between emotional intelligence and anxiety on academic achievement of learning disabled students.

Second Order Interaction

- There is no significant interaction among emotional Intelligence and anxiety and cognitive strategies on academic achievement of learning disabled students.

5.8 DESIGN OF THE STUDY

The present study aims to study the ‘effectiveness of cognitive strategies as remedial treatment on learning disabled in relation to emotional intelligence and anxiety’ through pre-test, post-test 3x2x2 factorial design. In this study pre-test post-test experimental design was used. Emotional Intelligence and Anxiety (studied at two levels) each were taken as independent or classifying variables. The groups under high and low emotional intelligence and high and low anxiety were classified on the basis
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of median. Cognitive strategies were taken as treatment variable and achievement in related topics of class VII in the subject of Science as dependent variable.

After identifying the learning disabled students from the various schools of Chandigarh, the identified sample was divided into three groups. Each group was taught through a different intervention strategy. One group was given the treatment through Self Monitoring, second group through Mediated Learning and third group through, Reciprocal teaching. The gain achievement scores from pre and post achievement test were subjected to statistical treatment as per the statistical design drawn for the study. Conclusions were drawn on the basis of descriptive and inferential statistics.

5.9 SAMPLE OF THE STUDY

The population of the study was class VII students studying in various schools of Chandigarh. A sample of 479 students of Class VII was taken from different Government Model Senior Secondary Schools of Chandigarh for identifying learning disabled students. After diagnosing learning disabled students, the sample of 96 learning disabled students from the selected schools were divided into three different groups of 32 each. Each group was subjected to a separate cognitive strategy. Another sample of 100 normal students was taken for development and standardization of achievement test.

5.10.1 TOOLS USED FOR IDENTIFICATION OF LEARNING DISABLED STUDENTS

Following tools were used for the identification of learning disabled students of class VII.

- Previous Academic Records of sample students for segregating the students. It includes total marks and marks secured in the subject of Science and English in previous year final examination.
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- Teacher Made Referral Form (Appendix-II) for class VII students for taking the views of the teacher regarding the sample students.
- Draw-A-Man test for Indian Children (2006) developed by Dr. Pramila Phatak, Child Development Unit, M.S. University, Baroda for IQ testing of students.
- Diagnostic Test of Learning Disability (DTLD-1993) by Swarup and Mehta for identifying learning disabled student from the sample.
- Schonell's Spelling Age Test by Fred J. Schonell, 1932 for judging the spelling age of the sample.
- Schonell's Reading Age Test by Fred J. Schonell, 1971 for judging the reading age of the sample.
- Teacher made Diagnostic test of Comprehension in the subject of Science for identifying problems of class VII students in the subject.

5.10.2 TOOLS USED FOR THE STUDY

Following tools were used to see the effectiveness of the cognitive strategies used in the study:

- Achievement Test constructed and standardized by the investigator was used as pre test and posttest (Appendix-I).
- Emotional Intelligence Scale (EIS) developed by Anukool Hyde, Sanjyot Lelthe and Upinder Dhar, 2001 was used to determine EI score.
- Academic Anxiety Scale for Children (1986) developed by Dr. A.K. Singh and Dr. A. Sen Gupta to determine the anxiety level of the Learning disabled students.
- Learning material for imparting Instruction through three cognitive strategies was developed by the investigator (Appendix-IV).
5.11 PROCEDURE AND DATA COLLECTION

The study was conducted in four phases. In the first phase, identification of learning disabled students was done using various identification instruments from the total sample taken for the study.

The identified sample students were then divided into three groups so that pre-test post-test experimental design could be employed on the sample. In the second phase, achievement pre-test, emotional intelligence scale and anxiety scale were given to the sample.

In the third phase, the three groups were given instructions using three strategies, namely, self instructional technique, mediated learning and reciprocal teaching.

And finally, in the fourth phase, achievement post-test was given to the sample. The raw score collected from pre and post achievement test was used to calculate gain scores. Various statistical techniques were applied on the gain scores to get the desired results.

5.12 STATISTICAL DESIGN

The data collected was subjected to analysis through descriptive and inferential statistics. Descriptive statistics such as mean, median, mode, standard deviation, skewness and kurtosis were computed to study the nature and distribution of data. ANOVA (3 x 2x 2) and t-test as inferential statistics were used to test the hypotheses.

5.13 RESULTS AND CONCLUSIONS

The following conclusions were drawn from the results of the present study:

- Cognitive strategies were found effective in improving the mean achievement scores of learning disabled students.
**Summary**

- The students who were given interventions through self instructional technique and mediated learning strategies scored significantly higher than those taught through reciprocal teaching.
- No significant difference has been found in the mean achievement scores of the students exposed to self instructional technique and mediated learning strategies.
- Emotional intelligence is found to be a redundant factor as far as achievement of learning disabled students is concerned.
- Students with high anxiety levels were found to score low as compared to those with low anxiety levels.
- Cognitive strategies and emotional intelligence were not found to show any significant interaction which could affect the achievement of students with learning disabilities.
- Cognitive strategies and anxiety were not found to show any significant interaction which could affect the achievement of students with learning disabilities.
- Anxiety and emotional intelligence were not found to show any significant interaction which could affect the achievement of students with learning disabilities.
- Cognitive strategies, emotional intelligence and anxiety were not found to show any significant interaction which could affect the achievement of students with learning disabilities.

**5.14 EDUCATIONAL IMPLICATIONS**

The present study has wide educational implications.

- There are number of learning problems which a child faces in the classroom. This led him to lose interest in the subject, score low marks and develop fear for the subject. The researcher has emphasized on identification of the learning disabled students which will help diagnose the problem and then provide appropriate remedial treatment.
Summary

• The results of this study raises the hopes of parents and teachers as it emphasizes on the effectiveness of cognitive intervention strategies to improve the achievement level of the learning disabled students.

• Mediated learning can be useful in remediating comprehension problems of learning disabled students. This strategy can help the teacher assume the role of mediator rather than a normal teacher.

• Self learning technique can also help in improving the achievement level of the learning disabled students.

• The researcher specially emphasised on learning problems in science subject for learning disabled students. It is because of problem in comprehension that learning disabled students score low in science subject. Proper remediation will help solve the problem.

• The study shows that Emotional intelligence does not play any role in the achievement of learning disabled students. So there is no need to emphasize on this factor.

• Anxiety is yet another variable which need to be controlled for better achievement in different subjects. Thus it is important for the teachers and parents to keep the anxiety level low of such students so that their achievement level can be improved.

5.15 SUGGESTIONS FOR FURTHER RESEARCH

Based on the conclusions drawn from the present study, the following suggestions may be considered for further research:

• The present study was limited to class vii students in the subject of science only. Similar studies should be conducted on other classes and for other subjects.

• The present study focuses on improving comprehension to improve achievement in science. Other aspects of science, such as, numerical, problem solving etc. can also be taken for the study.
Summary

- Co relational studies related to achievement scores in science and language comprehension of learning disabled students can also be conducted.

- The studies for the remediation of different combinations of learning disabilities, such as, language disorders with dyscalculia can also be conducted.