SUMMARY, FINDINGS, CONCLUSIONS AND IMPLICATIONS OF THE STUDY

6.1 INTRODUCTION

Diversity has drawn a great deal of attention in the education sectors, especially in recent years. Present Classrooms are exemplified by student diversity. Diversity can broadly include race/ethnicity, sexual orientation, cultural, and disability backgrounds. Students may differ in, motivation, learning style, aptitude, cultural background, socio-economic status, and past learning experience. Ruddell (2005), points out that more and more schools contain students representing diverse needs. As students’ learning needs are becoming increasingly diverse, a new challenge is to look for ways that address their needs. Classrooms nowadays face many challenges on several fronts and dealing with classroom diversity is certainly one of them. Gunzenhauser (1996) says, on the cognitive domain, students range in intellectual and process capacity, and learning orientation. Along the emotional/behaviour domain, students could differ in the degree of maturity, conformity, self-esteem, and motivation. When extending further to the social aspects, the differences might include various social dimensions such as family issues or social engagement preferences.

As student learning needs are being recognised, a new challenge is to look for ways that address their needs. Assessment is one of the useful ways to help teachers deal with classroom diversity. Teachers can employ different assessment strategies to identify different learning needs and to improve teaching and learning process. This subsequently leads to a consideration of two critical issues, the first one being how teachers can plausibly identify classroom diversity and the second being how useful are the assessment strategies they use to cater for the identified diversity. Teachers use a number of assessment strategies to assist them in understanding students’ diverse needs and that they are more interested in identifying those students who need help academically rather than in the social and affective domains.
It is important to address student’s needs on the cognitive dimension because they help to meet the academic challenges. However, other needs also warrant attention. Students could differ tremendously in the affective and social dimensions, which may directly or indirectly affect the students’ academic performances. More thoughts should be given on how to identify the needs regarding all three dimensions, in particular those related to students’ social and personal qualities. More thoughts should also be given on how assessment strategies can be used more flexibly to address these diversities.

Students are unique in nature. Valencia (1997) says ‘Including a variety of types of assessments will ensure that students are provided with ample opportunities to demonstrate their abilities and that teachers have the information they need to construct a complete, balanced assessment of each student.’ There are certainly other forms of assessment strategies which could be used for providing individualized learning experiences. Cho and Forde (2002) suggest that assessment should incorporate performance-based methods. They carry on to say that assessment must be qualitative as well as quantitative. In addition to conventional assessment methods, they recommend the use of portfolios, group and individual projects, interviews and oral presentations, experiential and applied student work, and journals and other reflective formats.

The assessment strategies reported above are by no means exhaustive. To cater for diverse needs, assessment should be made more flexible. Consideration should be given to the diverse range of abilities, social identities and experiences of students. Making use of a wide range of assessment strategies can certainly allow a truer reflection of students’ abilities. Detection of abilities and disabilities of a child at an early stage can provide early intervention and training. Considering the above aspects a brief description of the study is given in the following sections.

6.2 NEED FOR THE STUDY

Education as human rights has been recognized and affirmed in various national and international conferences including Universal Declaration of Human Rights (Article 26), Convention on the Rights of the Child (Article 28), World Conference on Education for All (1990), the Salamanca Conference (1994) and World Education Forum (2000) where UNESCO, UNDP, UNICEF, UNFPA, World Bank, etc. and agencies and representatives
from all over the world gathered to review and analyse their efforts towards the goal of "Education for All". Consequently, Inclusive education is regarded as the only means to achieve the goal of "Education for All".

In Salamanca, Spain, 1994 more than 300 participants representing 92 governments and 25 international organizations met to further the objectives of "Education for All" by considering the fundamental policy shift required to promote the approach of 'Inclusive Education', mainly to enable schools to serve all children, particularly those with special educational needs. The Conference adopted the Salamanca Statement on Principles, Policy and Practice in Special Needs Education and a Framework for Action. The Salamanca Conference marked a turning point for millions of children who had long been deprived of education. It provided a unique opportunity to place special education within the wider framework of the "Education for All" (EFA) movement. The goal is nothing less than the inclusion of the world’s children in schools and the reform of the school system. This has led to the concept of "Inclusive School". The challenge confronting the concept of "Inclusive School" is that of developing a child-centred pedagogy capable of successfully educating all children, including those who have serious disadvantages and disabilities.

The National Policy on Education of India in 1986 had included children with moderate disabilities as far as possible in the mainstream schools. In practice, children with multiple and severe disabilities have also been integrated into the UNICEF assisted "Project Integrated Education for the Disabled" (PIED). However, prior to any such integrated school programme, teachers training either as pre-service or in-service is highly recommended (Jangira 1995). In fact, the philosophy of "Education for All" or "Inclusive Education" implies improving the learning achievements of children through effective schools for all initiatives. The District Primary Education Programme (DPEP) funded by the World Bank in India has been running effectively in most of the states that in-service training for teachers is regarded as crucial to its success (Jangira, 1995).

Integration of disabled children with normal children provides least restrictive environment for the disabled children. This approach helps the disabled children to grow and develop like normal children. It promotes healthy social relationship between normal
and disabled children and provides equal educational opportunity. It enhances disabled children’s growth and development on par with their normal peers. Integration also leads to acceptance of disabled children in the society and prepare them to live independently. It reduces psychological problems of the disabled. Regular school teachers require multi-talents and play diversified roles to handle these children. The integration of students with special needs into the regular classes involve inclusive curriculum. Both the type of classroom learning environment created by the teacher and the instructional approach used, influence the development of self-management and independence in children. The teacher should use cognitive and metacognitive strategies in their instruction to deal children with learning disabilities and behaviour disorders. (Jayapradha, 2003)

Recognizing the mechanisms of mutual functioning of teachers on students' self perception and performance is extremely important for the success of mainstreaming of a student with special needs (Fulgosi-Masnjak, 2003). Enhancing the self-perception of students with special needs that are included in regular public secondary schools has a positive impact on their academic achievement as well as on their personal and social development. Factors that appear to influence the self-perception of students with special needs include the following severity or degree of disability, age of onset of disability, acceptance of the disability by parents, type of schooling (education) in regular school or special school, and special support, labelling, and identification group adherences (Jambor and Elliott, 2005).

The importance of self-perception for the growth and development for children has been demonstrated in studies showing how self-efficacy can enhance or impair the level of cognitive functioning and performance (Bandura, 1989). A child's expectations about his own capabilities determine his behaviour and influence his motivation, efforts, persistence regarding both the difficulty of the task and task efficacy.

It has been established by many researchers that self-perception is an important personality variable in the academic performance of an individual. The purpose of this study, therefore, is to examine the influence of self-perception on the academic performance of students with special needs in inclusive elementary schools. Further, in order to know the cognitive strengths and weaknesses of the normal as well as the special...
groups, teachers should be aware of the different assessment strategies for intervention and remediation. This helps them to know each individual student’s ability deficits and train them accordingly. In view of the above discussion the statement of the problem is as follows.

6.3 STATEMENT OF THE PROBLEM

In the present study the investigator was mainly interested in knowing how the cognitive processing, in children both normal and learning disabled, influences their achievement, how each child perceives his or her disabilities in their basic skills like reading, writing, mathematics etc. Do their perception and achievement go together? Considering the above aspects and discussion the study is entitled as-

“A STUDY ON COGNITIVE PROCESSING AND SELF-PERCEPTION OF DISABILITIES AND ITS EFFECT ON ACADEMIC ACHIEVEMENT AMONG CHILDREN OF ELEMENTARY INCLUSIVE SCHOOLS IN KERALA”

6.4 DEFINITION OF KEY TERMS USED IN THE STUDY

6.4.1 COGNITIVE PROCESSING

The media dictionary defines cognitive processing as the way in which a person changes external information into patterns of thought and how these are used to form judgements or choices.

Dictionary of Business and Management defines cognitive processes as the broad range of mental activities, including perception, learning, memory, thinking, information processing, and reasoning, that involves the interpretation of stimuli and the organisation of thoughts and ideas.

6.4.2 PERCEPTION

Perception is the process by which an organism attains awareness or understanding of its environment by organizing and interpreting sensory information. All perception involves signals in the nervous system, which in turn result from physical stimulation of the sense organs (Wikipedia).
Perception is a central step in the processing of sensory/attention information. Information perceived through sensory systems is later transformed into higher-order codes for use by the various higher-order cognitive subsystems. Perceptual functions include activities such as awareness, recognition, discrimination, patterning and orientation (Lezak, 1995).

6.4.3 SELF PERCEPTION

According to Merriam Webster’s Learner’s Dictionary self-perception is the idea that you have about the kind of person you are. Self Perception is defined as an awareness of the characteristics that constitute one’s self; self-knowledge. (thefreedictionary.com)

6.4.4 DISABILITIES

A condition that damages or limits a person’s physical or mental abilities or it is the condition of being unable to do things in the normal way, the condition of being disabled (Merriam Webster’s Learner’s dictionary).

6.4.5 EFFECT

Effect is a change that results when something is done or happens; an event; condition, or state of affairs that is produced by a cause.

6.4.6 ACADEMIC

Academic relates to scholarly activities, especially those involving study within subject areas or disciplines (Dictionary of education).

6.4.7 ACHIEVEMENT

Achievement refers to the act of achieving something.

6.4.8 CHILDREN

6.4.9 ELEMENTARY

An elementary school is an institution where children receive the first stage of compulsory education known as elementary or primary education. Elementary school is the preferred term in some countries, particularly those in North America. Primary school is the preferred term in the United Kingdom, India, Ireland, Pakistan, Australia, Latin America, South Africa and New Zealand and in most publications of the United Nations Educational, Scientific, and Cultural Organization (UNESCO) (Wikipedia).

6.4.10 INCLUSIVE SCHOOLS

Inclusive schools are schools where the children with special needs are educated along with the normal children. (Wikipedia).

6.5 OPERATIONAL DEFINITIONS OF TERMS USED IN THE STUDY

Considering the conceptual framework, review of related studies and relevant literature of the present study certain concepts and terms used in the study need to be defined so as to operationalize the design of the investigation of the present study. The operational definitions of the concepts and terms used in the study are as follows-

6.5.1 COGNITIVE ASSESSMENT

A cognitive assessment is an examination conducted to determine an individual’s level of cognitive function. In cognitive assessment, the subject will be asked to complete a series of tasks which require cognitive skills. The cognitive assessment tests are broken up into several different components to test Planning, Attention and Simultaneous and Successive processing. Each section is scored separately, and the results are used to compare with those of other people who have taken the test to see where someone falls on a rubric of cognitive performance.

6.5.2 COGNITIVE PROCESSING

In the present study cognitive processing includes planning, attention, and simultaneous and successive processing. Planning is central to all activities. Attention is also very much necessary to do any task along with planning so that an individual can process the information simultaneously and successively.
6.5.2.1 Planning

Planning is a mental process by which an individual determines, selects, applies, and evaluates solutions to problems. The Planning Process provides the means to solve problems of varying complexity and involves process like attention, simultaneous and successive processing, and includes a knowledge base. It is central to all activities in which there are both intentionality and a need for some method to solve a problem. This process includes self-monitoring and impulse control as well as plan-generation.

6.5.2.2 Attention

Attention is a mental process by which an individual selectively focuses on particular stimuli while inhibiting responses to competing stimuli presented over time. It is a process involving the act of listening, looking at or concentrating on a topic, object or event for the attainment of a desired result. The Process of attention is assessed by the tasks that demand focused, selective, sustained, and effortful activity. It is carried out through cognitive abilities and helped by emotional and conative factors to select something out of the various stimuli present in one’s environment and then to bring it to the centre of one’s consciousness in order to perceive it clearly for deriving the desired ends.

6.5.2.3 Simultaneous processing

Simultaneous processing is a mental process by which an individual integrates separate stimuli into a single whole or group. The essential ingredient of simultaneous processing is that the person must see how all the separate elements are interrelated in a conceptual whole.

6.5.2.4 Successive processing

Successive processing is a mental process by which the individual integrates stimuli into specific serial and order based on relationship that forms a chain-like progression. In successive processing each element is only related to those that precede it, and these stimuli are not interrelated. It involves both the perception of stimuli in sequence and the formation of sounds and movements in order.

6.5.3 ACADEMIC ACHIEVEMENT

Academic achievement measures an individual’s current level of competence, knowledge, skill and understanding capabilities in a particular cognitive domain. It refers
to children’s scores in their academic subjects. In the present study, terminal examination and continuous evaluation marks in all the subjects of the elementary school children are considered as their academic achievement.

6.5.4 CHILDREN

In this study children refers to young person’s studying in six and seventh grades of elementary school.

6.5.5 DISABILITIES

In this study disabilities refers to in particular learning disabilities namely impairment in reading, writing, speaking, listening, reasoning and mathematical abilities.

6.5.6 SELF PERCEPTION

Self-perception refers to perception of oneself. In the present study self-perception of children’s learning disabilities are assessed to know how they perceive their disabilities.

6.5.7 LEARNING DISABILITY

Heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning or mathematical abilities. These disorders are intrinsic to the individual, presumed to be due to central nervous system dysfunction and may occur across the life span.

6.6 VARIABLES USED IN THE STUDY

The variables considered in the present study are as follows-

- The independent variable considered for the present study is Cognitive processing i.e. Planning, Attention, simultaneous and successive processing and Self-perception of disabilities of elementary inclusive school children.
- The dependent variable of the present study is Academic achievement of the elementary inclusive school children.
- The intervening variables used in the study are sex, age, class, medium, type of school, school locale, etc.
6.7 GENERAL OBJECTIVES OF THE STUDY

Considering the problem under study, the following general objectives are formulated.

- To construct and validate a tool on cognitive processing based on PASS model
- To construct and validate a tool based on Self-Perception of learning disabilities
- To study the influence of Cognitive processing and self-perception of learning disabilities on achievement.
- To group the normal school children based on their performance on the cognitive processing and self-perception of learning disabilities.

6.8 SPECIFIC OBJECTIVES OF THE STUDY

From the above stated general objectives the following specific objectives are framed for the present study-

- To find out the dimensions of cognitive processing and self-perception of learning disabilities among the elementary inclusive school children.
- To bring out the descriptive typology of the elementary inclusive school children based on their cognitive processing and self-perception of learning disabilities.
- To ascertain the relationship between achievement, cognitive processing and self-perception of learning disabilities among the elementary inclusive school children.
- To study the difference in achievement between the high and low groups on cognitive processing and Self-perception of learning disabilities among the elementary inclusive school children.

6.9 HYPOTHESES OF THE STUDY

To examine the general and specific objectives listed above the following hypotheses are put forth for the present study-

Hypothesis 1  There will be patterns of clustering of relationships among cognitive processing of elementary inclusive school children.

Hypothesis 2  There will be patterns of clustering of relationships among the self perception of disabilities of elementary inclusive school children.
Hypothesis 3  Different groups based on the cognitive processing will emerge from the elementary inclusive school children.

Hypothesis 4  Different groups based on the self perception of disabilities will emerge from the elementary inclusive school children.

Hypothesis 5  There will be significant relationship between cognitive processing and achievement of elementary inclusive school children.

Hypothesis 6  There will be significant relationship between self perception of disabilities and achievement of elementary inclusive school children.

Hypothesis 7  There will be significant mean score difference in achievement between the high and low groups in the factors that emerged in cognitive processing among the elementary inclusive school children.

Hypothesis 8  There will be significant mean score difference in achievement between the high and low groups in the factors that emerged from self-perception of disabilities among the elementary inclusive school children.

Hypothesis 9  There will be significant mean score difference in achievement scores between the high and low groups based on cluster analysis in cognitive processing among the elementary inclusive school children.

Hypothesis 10  There will be significant mean score difference in achievement scores between the high and low groups based on cluster analysis in self-perception of disabilities among the elementary inclusive school children.

6.10 METHODOLOGY IN BRIEF

6.10.1 DESCRIPTIVE RESEARCH

The aim of descriptive research is to describe the state of affairs, as it exists. The main drawback of this type is that the researcher may not have control over the variables. In social sciences research, this type of research is often termed as Ex-Post Facto studies. This research mostly uses survey methods including comparative and correlation analysis. However, the researcher does not have any control over the variables, but they try to find out the causes.
The Survey method gathers data from a relatively large number of cases at a particular time; it is essentially cross-sectional. For the present study the investigator used normative survey method to gather data from the elementary school children.

6.11 SAMPLE FOR THE STUDY

The stratified random sampling method was adopted by the investigator to select the ten inclusive upper primary schools in Kasaragod district which included the government, aided and unaided. Here, at first the investigator divided the wider population into inclusive schools and special schools. Considering only the inclusive schools stratified into homogenous groups of government, aided and unaided elementary schools and the subjects were selected then randomly. Data for the present study was collected from sixth and seventh graders of upper primary schools of Kasaragod district in Kerala. The sample size in the present study is 100.

6.12 TOOLS USED IN THE STUDY

The result of any scientific investigation depends upon the tools used in the study. To arrive at logical conclusions, reliable and valid tools play a vital role. There are many standardised tools available which may vary in design, administration and interpretation. Depending on the nature of the study, a researcher can make use of standardised tools or they can develop their own tools. Considering the nature and purpose of the study, the investigator decided to construct tools for the present study. Taking the objectives of the study into consideration the investigator has developed the following tools for the study-

- Cognitive Assessment Test Battery (CATB) constructed and standardised by investigator (Appendix B)
- Children’s Learning Disability Perception Inventory (CLDPI) constructed and standardised by investigator (Appendix C)
- Personal Proforma developed by the investigator (Appendix A)

6.13 SCORING PROCEDURE

Scoring procedure of CATB - For the purpose of statistical analysis, the collected data need to be quantified. To quantify the data the following scoring procedure was
adopted. The scoring procedure of CATB was done manually as it was a paper pencil test. In each subtest, correct response was scored ‘1’ and incorrect ‘0’.

Scoring Procedure of CLDPI -This inventory consisted of two responses namely Yes/ No. An Item is to be scored ‘1’ if ‘Yes’ and ‘0’ if ‘No’.

6.14 DATA COLLECTION PROCEDURE

The investigator got the prior permission from the school heads before the data collection. Next in each school the class teachers of 6th and 7th grade were consulted and students were chosen randomly. Data collection for the present study was done in different phases. They are-

**Phase I** The CATB was first administered to the students individually. Before administering the test a brief orientation to the test was given. Also the maximum time limit for each test was specified at the beginning of the test.

**Phase II** The Personal Proforma and the Children’s Self Perception inventory were administered to the subjects. Clear cut instructions regarding answering the inventory were given to them. They were asked to answer them truthfully.

**Phase III** The investigator also collected one Terminal exam grades and two continuous evaluation grades of the students in all the subjects and it was converted to concerned percentage standards set by them. Averages of the three were taken as the achievement scores. The terminal exam and continuous evaluation grades were collected from the concerned teachers of all the subjects.

6.15 STATISTICAL TECHNIQUES USED

The statistical analyses used for the present study are Factor Analysis, Cluster analysis, Correlation and ‘t’ test. Factor Analysis was employed to condense, simplify a large number of observed variables and to see the relationships between them. Cluster analysis was used to identify similar entities from the characteristics they possess. It identified and classified objects or variables so that each object is very similar to the others in its cluster with respect to some predetermined selection criteria. The degree of relationship or association between the two variables is found using bivariate correlation. ‘t’ test was employed for judging the significance of difference between two mean scores.
6.16 MAJOR FINDINGS OF THE STUDY

The major findings evolved from the present study are as follows

The main analysis of the data focused on Factor Analysis and Cluster analysis. Factor analysis was employed with the principle component analysis and varimax rotation to see the patterns of clustering of relationships among cognitive processing and self-perception of learning disabilities of elementary inclusive school children. It was found that there is significant clustering of variables in cognitive processing and self-perception of learning disabilities of elementary inclusive school children, viz., hypothesis 1 and hypothesis 2. A four factor solution emerged in both the cognitive processing and self-perception of learning disabilities among the elementary inclusive school children. The four factors in cognitive processing were named as ‘mental processing’, ‘simultaneous and successive processing’, ‘planning’ and ‘attention’. The four factors that emerged in self-perception of disabilities were named as ‘skill of cognition’, ‘skill of processing’, ‘skill of expression’, skill of memory’. Moreover Factor 1, 2, 3 and 4 in self-perception of learning disabilities are related with Factor 1, 2, 3, and 4 of cognitive processing of elementary school children i.e., ‘mental processing’ is related with ‘skill of cognition’; ‘simultaneous and successive processing’ with ‘skill of processing’; ‘Planning’ with ‘Skill of expression’; and ‘Attention’ with ‘skill of memory’.

To find out the homogenous groups within cognitive processing and self-perception of learning disabilities of elementary inclusive school children, hierarchical cluster analysis was employed which arrived at two cluster profile in each, i.e. cognitive processing and self perception of learning disabilities of elementary inclusive school children. There emerged significant groups from cognitive processing and self-perception of learning disabilities. The two cluster profile solution suggests two homogenous groups in cognitive processing i.e. high and low in cognitive processing and high and low in self-perception. Different homogeneous groups based on the cognitive processing and self-perception of learning disabilities emerged from the elementary school children (hypothesis 3 and hypothesis 4).

Further analysis using the bivariate correlation yielded that cognitive processing is positively related with academic achievement and self-perception of learning disabilities.
is negatively related with academic achievement. Children with high cognitive processing ability have higher academic achievement than the lower groups on cognitive processing. So there is significant positive relationship between the factors that emerged from cognitive processing and achievement as stated in hypothesis 5. Further findings reveal that when the self-perception of learning disabilities in children increases their achievement decreases and vice versa as stated in hypothesis 6, that there is significant negative relationship between the factors that emerged from self-perception of learning disabilities in children and academic achievement.

Findings of the ‘t’ test suggest that there is significant mean score difference in academic achievement between the high and low groups in (factors) that emerged from cognitive processing and self-perception of learning disabilities among the elementary inclusive school children as in hypothesis 7 and 8. Based on the cluster two group profile solution i.e. high and low groups in cognitive processing and high and low in self-perception of learning disabilities yielded that the two groups differ significantly in academic achievement (hypothesis 9 and 10).

1.17 DISCUSSIONS

First major issue examined in the present study is whether there are patterns of clustering of relationships in Cognitive Processing and Self-Perception of Learning Disabilities among the inclusive elementary school children. From the present study four factors emerged in Cognitive Processing among the inclusive elementary school children. The four factors are ‘mental processing’, ‘Planning’, ‘Attention’, and ‘Simultaneous and Successive processing’. This finding supports the general conclusion based on the literature (Das et al., 1994). The first factor, as primary factor ‘mental processing’ includes all the elements namely Planning, Attention, and Simultaneous and Successive processing. The three other factors are Planning, Attention, Simultaneous and Successive processing which is stated in different studies by (Das et al., 1994).

The second important result of the study is the findings of two profile clusters which appeared to characterize the cognitive processing in elementary inclusive sample clustered into two groups one with high profile of cognitive processing 52 subjects and the other low on cognitive processing 48 subjects. Moreover the two cluster solutions in
self-perception of learning disabilities yielded two subgroups with 50 subjects in each. This finding supports the findings of Daley (1997) whose study yielded two profile solutions, which suggested the presence of a subgroup that was high functioning and had attention disorders and a lower functioning more disturbed subgroup. Statistically significant difference was found between the achievements of subgroups in cognitive processing i.e. children with high cognitive processing i.e. Planning, Attention, Simultaneous and Successive processing differed in their achievement significantly when compared to the low Cognitive Processing group, in this study which is against the findings of the study of Daley (1997).

The correlation of academic achievement with the factors that emerged from cognitive processing reveals that there is significant positive correlation between academic achievement and the factors that emerged from cognitive processing which supports the Cosden et al. (1999), study on self-understanding and self-esteem in children with LD, where they examined the relationship between cognitive test and achievement test scores and self-perception. Using a correlational analysis the association between cognition and achievement scores and students responses on the self-perception of learning disabilities and self-esteem scales were assessed. Results revealed that cognitive test scores were positively correlated with achievement scores. Students who had higher tested cognitive abilities and academic achievement also felt better about their disability. Achievement was related to self-perception of learning disabled.

In Cosden et al. (1999) study on factor analysis of items on the self-perception of learning disabilities did not yield useful factor scores, which is against the findings of the present study that items on self-perception of learning disabilities yielded a four factor solution. Present study result also supports Heyman’s (1990) findings of a relationship between self-perception of a learning disabled and academic achievement and general self-concept. In addition it supports this study by suggesting that students with a less negative view of their disability that is students who report that their disability is delimited, malleable and non-stigmatizing, experience less serious achievement problem in some areas, have higher self-perceptions of their ability and academic competence, feel more socially accepted, and perceive more support from their parents and classmates.

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Study by Rothmen and Cosden (1995) revealed that children with less negative perceptions of their LD had higher maths achievement scores. Also they perceived more positive global self-concept, more intellectual and behavioural competence and more social acceptance which supports the findings of the bivariate correlation of the present study that self-perception of learning disability is negatively correlated with academic achievement i.e. when self-perception of learning disabilities increases academic achievement decreases and vice versa.

According to Kcoomok and Cosden (1994) students who have fewer areas of academic difficulty or less severe cognitive achievement discrepancies, tend to have more positive self-perceptions than do students with more severe academic problems, which supports the present study. That is, children with less severe learning disability feel better about their academic abilities and about themselves than do students with more severe disabilities.

In another study, Hagborg (1996) compared the academic test scores of students with learning disabilities who had positive or negative perception of their academic competence. No differences were found in standardized test scores, or classroom grades, between these two groups of students. What distinguished the two groups was a tendency for those with positive perception of their academic skills to report greater efficacy for their school performance, better attitudes toward school and higher self esteem, which is in favour of the findings of the present study.

6.18 CONCLUSION

The multivariate approach to the concept of cognitive processing enabled the investigator to bring out the underlying constructs of cognitive processing by using factor analysis. This approach helped the investigator to summarize the underlying dimensions in the structure of the raw datamatrix. As a result it was possible to obtain four independent factors representing the construct of cognitive processing. These four factors have been named accordingly taking into account the loadings of the variable in each factor. These four independent factors have also brought out the significant relationships with most of the chosen variables of the present study.

The respondent’s cognitive processing skills fall under four dimensions - namely ‘Mental processing’, ‘Planning’, ‘Attention’, and ‘Simultaneous and Successive
processing’. There was positive loading in all the four independent factors, which implies that the variables were positively associated with each other. It thus proves the theory put forth by Das and his Colleagues (1994b) that cognitive processing involves four tasks namely Planning, Attention, Simultaneous and Successive Processing.

It is seen that the four independent factor solution of self-perception of disabilities that the first factor which is a general factor items loaded were related to Reading, writing, arithmetic, organisation, memory etc. named as ‘skill of cognition’. Next three factors were specific factors related to ‘skill of processing’, ‘skill of expression’ and ‘skill of memory’. All the items in each of the independent factors were loaded positively which implies that there were positive association between the items. Hence there are patterns of clustering in self perception of learning disabilities of elementary school children. More over Factor 1,2,3 and 4 in self-perception of disabilities is related with Factor 1,2,3, and 4 of cognitive processing of elementary school children i.e., ‘mental processing’ is related with ‘skill of cognition’; ‘simultaneous and successive processing’ with ‘skill of processing’; ‘Planning’ with ‘Skill of expression’; and ‘Attention’ with ‘skill of memory’. This study thus goes along with the theory suggested by Das and his colleague (1994b) that is cognitive processing has four components namely Planning, Attention, Simultaneous and Successive Processing.

Bivariate correlation of cognitive processing (factors) and academic achievement yielded a significant positive relationship between the two. As cognitive processing ability of a child increases his/ her academic achievement also increases. In terms of the factors we can say that as Planning, Attention and Simultaneous and Successive Processing ability of a child increases his/ her academic achievement increases. Considering the self-perception of learning disability (factors), it had significant negative relationship with academic achievement. Here low perceivers of learning disability were good achievers than the high perceivers.

There was significant mean score difference in academic achievement between the low and the high groups in cognitive processing and self-perception of learning disability based on factors and clusters. The academic achievement of high group in cognitive processing ability was high when compared to the other. In the self-perception of learning
disability the group with high perception had low academic achievement and the group with low perception had higher academic achievement. It can be generalised from this that as self perception of learning disabilities increases the academic achievement decreases and vice versa. As cognitive processing ability increases the academic achievement increases and the low processing ability group has low academic achievement.

6.19 IMPLICATIONS OF THE STUDY

The findings of the present study have several implications for working with learning disabled and the normal as well as for future research in integrating cognitive aspects in inclusive assessments.

It throws light on the various Cognitive processes namely Planning, Attention, Simultaneous and Successive processing. It focuses on a child’s ability in performing a task namely –planning the task, paying attention to it, simultaneous and successive processing of information to bring out the result.

Knowing the multidimensionality of cognitive processing and the various dimensions it is easier for the teachers to develop remediation programs based on each dimension namely Planning, Attention, Simultaneous and Successive processing. A brain based training can be given to boost up the cognitive processing ability of students so that they can attain certain level of achievement.

PASS scale represents a child’s cognitive functioning and are used in identification of specific strengths and weaknesses in cognitive processing. CATB is an individually administered test battery. It is easier for the teachers to diagnose the strengths and weakness of each pupil i.e. differential diagnosis and train them accordingly by adopting various strategies like multi-sensory approach, cognitive approach, cooperative learning approach, individualised education programs etc.

The information from this can be used for knowing children’s cognitive performance, for diagnosis and intervention. It finds its application in special education field where early identification of children with special needs and their intervention is possible. It can be used to draw the ability achievement comparison in children. As an individualized assessment it can be used in determination of discrepancies, eligibility, re-evaluation and instructional planning.
The present study also throws light on self-perception of learning disabilities of elementary inclusive school children i.e. how it is related to their achievement. So teachers can think of increasing the self-perception of low perceivers and thereby increase their achievement. Working with students with special needs demanded that one should know that these individuals are susceptible to low self-confidence, self-esteem, high frustration level, anxiety, depression and despair.

The physical presence of children with special needs in the classroom (physical integration) does not by itself ensure a child's progress and development, unless functional and social integration are also provided. In creating mainstreaming learning environment, teachers should establish a partnership with special educators in making the necessary adaptations to the curriculum and teaching strategies in a manner that will allow for learning in such a diverse group of learners.

6.20 LIMITATIONS OF THE STUDY

Every Research has its own limitations. This study has also certain limitations. The limitations of the present study are

- This study is confined to 6th and 7th graders only. Only two grades could be covered within this stipulated time. That is to say, for the present study the investigator did not consider other graders.
- The investigator could not cover the whole of Kerala state.
- Only Government, Aided and Private schools were considered for this study.
- Sample size was restricted to 100 as there were 12 tests to be administered to each individual separately.
- The investigator could cover only ten schools in this study due to time factor in administering the tests.
- In the sentence question test the scoring was such that if the answer to the question is one word or a sentence and if the subject answered it correctly, a credit of 1 was given. If the answer was partially right no credit was given.
- The reliability coefficients were found subtest wise and some of the subtests had sub sections in them; part by part reliability was not computed.
6.21 SUGGESTIONS FOR FURTHER RESEARCH

The present study paves the way for undertaking various innovative researchers in the field of cognitive psychology.

- The same study can be extended to another geographical region so as to generalise the findings of the present study or compare with other region.
- Similar study can be done by considering different variables into account.
- The study focuses only on cognitive processing and self-perception of learning disabilities of elementary inclusive school children. Different samples can be taken and studied namely primary, high school and higher secondary.
- The variables considered for the present study are cognitive processing and self-perception of learning disabilities and academic achievement. Certain other variables can be integrated into this study and researched on.
- Present study concentrated only on two grades i.e. sixth and seven grades. Same study can be extended to other grades.
- A comparative study can be done by extending this study to special groups and normal groups of population and by considering different subgroups of special children.

The present field of research opens a new path for future researches and will certainly contribute to assessment in inclusive classrooms. Integration of cognitive approaches in the assessment of special children and normals will open up new challenges in this area of research. It will certainly make the teachers reflect on the assessment strategies they can make use of in the inclusive classrooms. The present piece of research shows how cognitive psychology can be incorporated in the assessment of inclusive classroom children.