ISBN 978-81-928985-0-6

# REDEFINING EDUCATIONAL PRACTICES INTEGRATING INDIAN EPISTEMOLOGY AND MODERN COGNITIVE NEUROSCIENCES

## COMPENDIUM OF PAPERS

Presented at the ICSSR Sponsored International Seminar organised by NVKSD College of Education, Attoor, Kanyakumari District in connection with the 13th Annual Convention of Council for Teacher Education (CTE), Kerala State Centre from January 7 – 9, 2015

*Published by*
NVKS PUBLICATIONS
ATTOOR, KANYAKUMARI DISTRICT.
2015

# CONTENTS

## III. Neuro psychological aspects of learning

## IV. Designing Brain Compatible Learning Environments

# Helping children with cognitive disabilities

**Dr. S. Praveen Kumar**
*Assistant Professor in Mathematics,*
*N.V.K.S.D. College of Education, Attoor, Kanyakumari District*

**Abstract**

Children with multifarious abilities or disabilities can be found in most schools. Some of the learners achieve well and yet some may face problems in learning the academic skills such as listening, speaking, reading, writing or arithmetic. It is necessary to emphasise the significance of academic skills for the cognitive development of the learners. There are different kinds of disabilities that occur in learners such as Learning Disorders, Autism, ADHD etc. Individuals with disabilities require help to develop their cognitive abilities through early intervention and specialized approaches to teaching. This paper highlights the importance of acquisition of academic skills and also the need of researches in cognitive disabilities and cognitive neuroscience.

## Introduction

The basic skills that are needed for learning include the various skills such as listening, speaking, reading, writing and arithmetic which are essential to lead a successful life in the society. Learners with multifarious abilities or disabilities can be found in most schools. Some of the learners achieve well and yet some others may face problems in learning such as difficulties in listening, speaking, reading, writing or communication skills. It is a great challenge on the part of teachers to deal with those children with learning difficulties through the use of innovative educational strategies.

## Cognitive Disabilities

Individuals with cognitive disabilities are of average or above average intelligence, yet often they are treated as "stupid". In many cases they work much harder than their peers to achieve the same results, yet they are sometimes seen as "lazy" or getting "special treatment". (http://www.muhlenberg.edu/careercenter/emplguide/cognitive.html).

## Different kinds of cognitive disabilities

The following are the different kinds of cognitive disabilities that occur in students.

## Learning disabilities

The National Joint Committee of Learning Disabilities defines learning disability as a generic term that refers to a heterogeneous group of disorders which is manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning or mathematical abilities (Reddy, 2006: 12). A learning disability is found across all ages and in all socio-economic classes. Learning disabilities may affect individuals differently at different stages of life – early childhood, elementary school years, adolescence and adulthood (Ysseldyke & Algozzine, 2007).

## Cerebral Palsy

Cerebral Palsy is a condition that disables children. It affects each child differently. Along with motor movements, sometimes speech, vision, hearing and intelligence also get affected (Mohanty, 2013).

## Mental retardation

Mental retardation is defined as a condition of arrested or incomplete development of mind existing before the age of 18 years, whether arising from inherent causes or included by disease or injury. (Mangal, 2007). It can occur as a result of head injury, an illness or because of a congenital or genetic abnormality. Generally persons are considered to be retarded when they have significantly low intellectual functioning with IQ scores below 70 versus the average IQ of 90-110. Retarded children are impaired in their ability to adapt to the environment and usually experience failure. (Tileson, 2004: 56).

## Autism

Autism is a complex neurological disorder that is characterized by impairments in communication/language, behaviour and social interaction. It is a spectrum of disorders which comprises Asperger's Syndrome, Pervasive Developmental Delay and Childhood Disintegrative Disorder. According to the Center for Disease Control and Prevention, the number of children diagnosed with autism spectrum disorders is 1 in 110 (Ennis-Cole, 2012).

**Attention Deficit Hyperactivity Disorder**

ADHD refers to a family of related chronic neurological disorders that interfere with an individual's ability to regulate activity level, inhibit behaviour and attend to tasks in developmentally appropriate ways. Inability in exercising self-control may give birth to three major problems particularly related to inattention, hyperactivity and impulsivity, the very hallmarks or symptoms of ADHD (Mangal, 2007).

**Treating cognitive disabilities**

The tools of cognitive neuroscience offer various possibilities to education, including the early diagnosis of special educational needs, the monitoring and comparison of the effects of different kinds of educational input on learning, an increased understanding of individual differences in learning and the best ways to suit input to the learner (Begum & Vakkil, 2009).

Some of the cognitive disabilities can be treated but not cured. Educating the children with cognitive disabilities is really challenging because of their characteristics like hyperactiveness, poor attention span, speech and communication problems and so on. Early intervention services have a significant impact on the impaired children, making a difference in each and every child irrespective of their handicapping condition. They can be remedial or preventive in nature – remediation existing developmental problems or preventing their occurence (Reddy & Poornima, 2008).

Some slow learners may not be ready to learn because of the cognitive differences or may not have developed the appropriate problem-solving strategies to interpret complex tasks. It is necessary that teachers must identify the cognitive capabilities and limits of individuals at various points in development. Varying teaching strategies to address all channels promote learning, no matter what students' preferences of cognitive styles are (Saravanabhavan, 2009).

Various innovative educational strategies may help special learners to overcome their learning problems. Whole Brain Teaching is one such strategy in which student's whole brain is involved in learning and there is not any mental area left over for challenging behaviour. In this method, lessons are taught in such a way that engages students in seeing, hearing, doing, speaking, doing, feeling etc. A significant quantity of modern brain research demonstrates that one learns best by seeing, saying, hearing, doing and feeling (Hameed & Arif, 2013).

**Conclusion**

Individuals with cognitive disabilities require special help to develop their abilities through early intervention strategies and specialized approaches to teaching. Rehabilitation programmes have to be planned for these children according to the nature of dysfunction.

## References


Begum, A. Jahitha. & Vakkil, M. (2009). Contribution of Cognitive Neuroscience Research to Inclusive Population. *Proceedings of the International Conference on Education, Research and innovations for inclusive societies*, School of Education and HRD, Dravidian University, Kuppam, A.P.State.

Ennis-Cole, Demetria. (2012). Teaching students with Autism Spectrum Disorders: Technology, Curriculum and Common Sense. *i-manager's Journal of Educational Psychology, 5*(3), 52-61.

Hameed, A. & Arif, P. K. (2013). Whole Brain Teaching for Inclusive Classrooms. *Proceedings of the UGC National Seminar on Learning Disability: No child left behind*, St. Thomas College of Education, Pala, Kerala.

Mangal, S. K. (2007). *Educating exceptional children: An introduction to special education.* New Delhi: Prentice Hall of India.

Mohanty, Namita. (2007). *Psychological Disorders: Text and Cases.* New Delhi: Neelkamal Publications.

Reddy, G.L., & Poornima, R. (2008). Early Intervention – An elixir of special children. *Research and Reflections on Education,* 6(1), 2-4.

Saravanabhavan, Sheila. (2009). Instructional Considerations for Slow Learners. *Edutracks, 8(10)*, 13-15.

Ysseldyke, James., & Algozinne, Bcb. (2006). *Special Education.* New Delhi: Kanishka Publishers.

Tileson, Donna Walker. (2004). *What Every Teacher Should Know About Special Learners.* California: Sage Publications.