

Learning Outcomes in Functional Academics of Children with Special Needs in Inclusive school and Special school

Rajiv Ranjan*, O.P. Meena** and Meenakshi Meena***

*D.E., RIE, NCERT, Ajmer Rajasthan

**DESM., RIE, NCERT, Ajmer Rajasthan

***D.E., RIE, NCERT, Ajmer Rajasthan

Abstract- *The objective of this study was to find out the learning outcomes in functional academics of CWSN in inclusive schools and special schools at primary level. In this descriptive survey research, purposive sampling technique was used for selection of CWSNs i.e. visual impairment, hearing impairment and intellectual disabilities. Out of 78 CWSNs, 39 CWSNs were selected from Varanasi and Lucknow district of Uttar Pradesh however 39 were from Ajmer and Jaipur district of Rajasthan. The age group of samples was between 7 to 12 years. A tool on Learning Outcomes in functional Academics for CWSNs was developed and the items were presented under three domains- Languages, Mathematics and Environmental Studies. Reliability was established with the other developed tool in the area of special/inclusive education. The data was collected from 12 schools of Rajasthan and 14 schools of Uttar Pradesh. One-way ANOVA and t test were conducted. The findings of the research study are presented with tables and graph. The two important findings of this project are the difference in total mean scores of CWSNs studying in Special and Inclusive schools is found statistically non-significant and the difference in mean scores achieved by the three groups (VI/HI/ID) was not significant in language and environmental science; however, the difference in total score of HI and ID was significant.*

Key words: Learning Outcomes, Functional Academics, Children with Special Needs, Inclusive and Special School

“Systems that are truly inclusive reduce drop-out rates and repetition of grades, and have higher average levels of achievement; compared to systems that are not inclusive. People who believe in inclusive education believe that the education system is the impediment to learning for a child, and that every child is capable of learning!”

India boasts one of the fastest growing economies in Asia. Despite such progress, 25% of the population lives below the poverty line, 40% of the population is illiterate and approximately 70% of the population live in rural areas and lack access to adequate medical care and support services. Furthermore, India is still very enveloped by cultural standards and norms that have

prevailed for hundreds of years. In a society of competing dualisms between rich and poor, urban and rural, developed and undeveloped, it is not hard to imagine the conditions and challenges that the most vulnerable members of society face. There are certainly many vulnerable groups present in India, but one of the easiest to forget are the 31 million individuals with intellectual disabilities (ID) in India (**WHO, 2004**).

Functional academic outcomes

The functional skills (outcomes) need to be chronologically age-appropriate and reflect student's strengths and individual life choices. The student's program must include functional skills from each of the four domains to ensure the student receives a well-rounded program. The level and depth of the skills within each of the four domains will depend on the student's identified strengths, needs, and goals.

The functional academics curriculum includes a range of areas namely:

- Pre-requisite concepts
- Maths
- Activities of daily living
- Reading
- Writing
- Communication
- Social and Emotional skills
- Community orientation
- Skill oriented activities
- Art and craft etc...

(<http://special.ed.about.com/od/glossary/g/Functional-Skills-Skills-Our-Students-Need-To-Gain-Independence.htm>- dated 9-12-16)

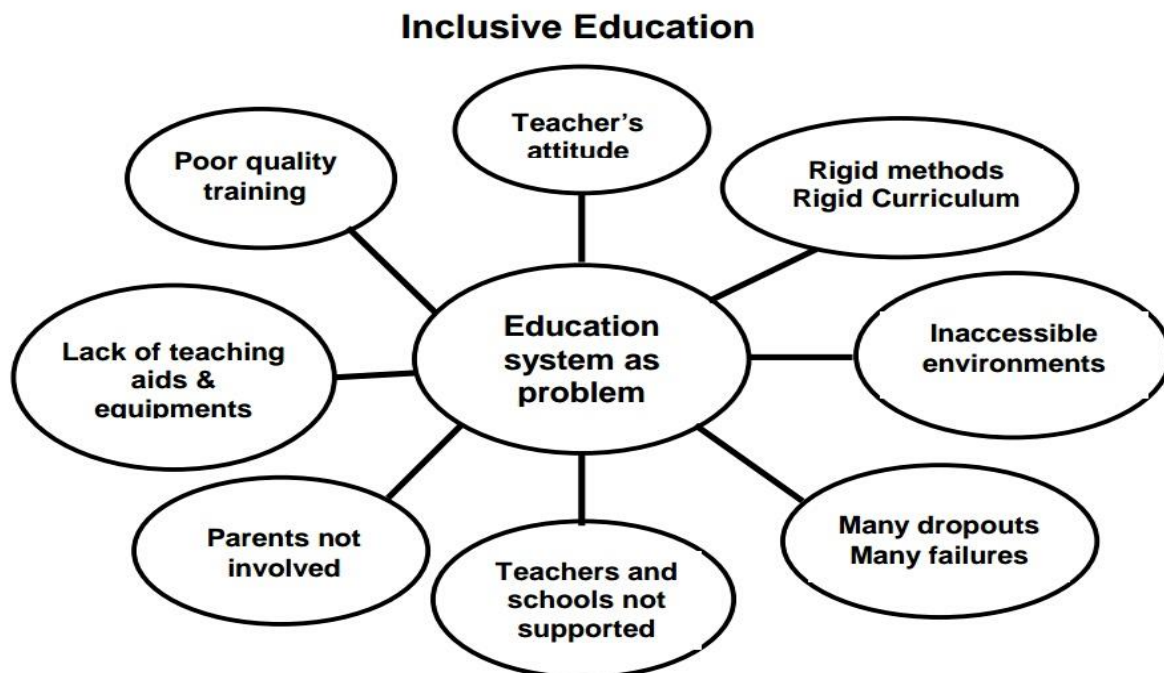
Outcomes of learning for CWSNs

- Bringing desirable changes in behaviour
- Attaining of teaching-learning objectives:
- Attaining of proper growth and development:
- Attaining a balance development of personality:
- Attaining proper adjustment:
- Realizing of the goals of life:

Inclusive Education

Inclusive education seeks to address the learning needs of everyone, children, youth and adults and focuses specifically on those who are vulnerable to marginalization and exclusion.

“According to National Curriculum Framework for School Education (NCFSE) “Segregation or isolation is good neither for learners with disabilities nor for general learners without disabilities. Societal requirement is that learners with special needs should be educated along with other learners in inclusive schools, which are cost effective and have sound pedagogical practices,” (NCERT, 2000). Inclusive education ensures that a school responds to the educational needs of children in the neighbourhood. It brings a school closer to the community (Jha, 2002). Inclusion offers the opportunity for students without SEN to learn to communicate, and deal effectively with a wide range of individuals. This also prepares them to fully participate in a pluralistic society when they are adults. (Ryndak and Alper, 1996).



Inclusive education is about restructuring the cultures, policies and practises in schools that they respond to the diversity of students in their locality.

Statement of the Problem

The present study is a comparative study on Learning Outcomes in Functional Academics of Children with Special Needs in Inclusive school and Special school

Objectives

- 1) To find out the learning outcomes in functional academics of CWSN in inclusive schools at primary level
- 2) To find out the learning outcomes in functional academics of CWSN in special schools at primary level

- 3) To compare the mean scores of learning outcomes in functional academics between CWSNs studying in inclusive schools and special school
- 4) To compare the mean scores of learning outcomes in three domains of functional academics (EVS, Language and Mathematics) of Children with Visual Impairment, Hearing Impairment and Intellectual Disabilities.

Research Hypothesis

- There is no statistically significant relationship between the mean scores of CWSNs studying at primary level in inclusive and special schools of Rajasthan and Uttar Pradesh.
- *There is no statistically significant relationship between the mean scores of CWSNs on learning outcome checklist in functional academics based on the category of disability (VI, HI, and ID)*
- *There is no statistically significant relationship between the mean scores of CWSNs in EVS, Language and Mathematics based on the type of school.*
- There is no statistically significant relationship between the mean scores of CWSNs studying in inclusive and special schools at primary level based on their gender
- There is no statistically significant relationship between the mean scores of CWSNs studying in inclusive and special schools at primary level based on the locality of their school
- There is no statistically significant relationship between the mean scores of CWSNs studying in inclusive and special schools at primary level based on their age group.

Alwell and Cobb (2009) conducted a study on “Functional Life Skills Curricular Interventions for Youth with Disabilities”. The result shows that the literature on youth with disabilities in secondary school settings contains a number of effective interventions for teaching functional life skills. Some features of this literature are noteworthy like the majority of studies have been completed with youth with low-incidence disabilities and relatively few studies have been completed with students with high-incidence disabilities, despite the reported need (e.g., Cronin, 1996; Sitlington, 1996). Second, none of these studies were completed in general education and community settings. Third, like Nietupski and Hamre Nietupski (1997), we found that proportionately fewer life skills studies have been completed in recent years.

Bussing et. al. (2012) conducted a study on “Academic Outcome Trajectories of Students with ADHD: Does Exceptional Education Status Matter”. The purpose of the study was to investigate the relationship between academic performance in students with ADHD and students with subclinical ADHD.

It produces a meaningful voice in the world of silence, brings a ray of hope in the life of those who live in darkness. It also lends helping hands and understanding to those who need love and concern. It enables children with special needs to reach their potential and live with equality and dignity (**Maitra and Saxena, 2008**).

Lilian F., Dornelas, et. al. (2016) conducted a study on “Functional Outcome of School Children with History of Global Developmental Delay”. The result of this study shows that the global developmental delay can determine a wide range of possible outcomes. Some elements, such as mother’s age at birth, poor balance and need for assistance in cognitive and behavioral tasks in the school context, can be valuable in determining the developmental outcomes of school children diagnosed with “global development delay.”

Paul (2011) conducted a study on “Outcomes of Students with Disabilities in a Developing Country: Tobago”. The results show that comparisons with US datasets indicate that Tobago students with disabilities were performing at lower grade levels in academic areas than their US counterparts. Results also found that while Tobago youths with disabilities had fewer employment opportunities than US youths with disabilities, Tobago working youths with disabilities earned higher wages than those youths in the US.

Giesen et. al., (2012) conducted a study on “Academic supports, Cognitive Disability and Mathematics Achievement for Visually Impaired Youth: A Multilevel Modeling Approach”. Result shows that included children made slightly more progress in literacy skills than children attending special schools. No differences were found between the progress of the two groups in mathematics and adaptive behavior. This study concluded that Inclusive education is an appropriate educational option for primary pupils with Intellectual Disability.

Sunardi et al. (2011) conducted research describing the implementation process by focusing on the institutional management, student admission/identification/assessment, curriculum, instruction, evaluation, and external supports. The results showed, in terms of institutional management, that the majority of inclusive schools had developed strategic plans (for inclusion), legally appointed coordinators, involved related and relevant parties, and conducted regular coordination meetings. However, there were still many schools that had not restructured their school organizations. In terms of student admission/identification/assessment, 54 percent of schools set a quota for SEN students. Only 19 percent applied a selection process in student admission, half of which used different procedures for SEN candidates. Approximately 50 percent of inclusive schools had modified their curriculum, including a variety

Center for Educational Researches and Consulting Armenia (2013) conducted study which was carried out in 34 inclusive schools (IS) that operate in five target mazes (regions) of the Republic of Armenia (RA). They conclude that instead of inclusive education, there is a functioning model of integrated education in Armenia. Children with SEN are integrated into schools and get the same education as everybody else, but are differentiated by individualized curricula and dubbed with the derogatory label of the “inclusive kids”. Regarding overall inclusiveness, the general growth dynamics of IS and their funding channels remain uncertain. These conditions are not favorable for the IE system, leaving it unprepared for the shift to universal inclusion.

Research design

The present study researcher is a descriptive survey research for achieving the objectives of the study. “Descriptive research involves collecting data in order to test hypothesis or to answer questions concerning the current status of the subject of the study” (Gay, 1990).

As it is clear that in a descriptive study, researcher does not manipulate the variables, subject or the sample to any experimental treatment or arrange for events to happen, but the events are purely observed, described and analysed. The descriptive research helps us to describe a situation or phenomena (Christensen-1997).

Sample of the study

A sample is the part of total population. It can be individualized element or group of element selected from the population as it is a subset of, so it is also called representative of the population and suitable for research in terms of cost, convenience or time.

The sampling is defined as the process of selecting a number of individual for study a way that the individuals represent the large group from which they were selected (Gay and Airasian, 2009).

The sample of the study was the children with Special Needs in Inclusive schools and special schools at primary level. The total numbers of CWSN were 78 which will be further divided as 39 CWSN from Uttar Pradesh and 39 from Rajasthan. The age group of sample was between the 7 to 12 years. The sample from the Uttar Pradesh was selected from the two blocks of Lucknow and Varanasi. The sample from Rajasthan was selected from two blocks of Ajmer and Jaipur.

Sampling Technique

Purposive sampling method was used for selection of sample. The eligibility criteria for the selection of sample were as follows:

Inclusion Criteria for children with ID between ages 7-12 years

- Children with Mild and Moderate Intellectual Disability.

- Children with Intellectual Disability with associated conditions such as Down syndrome, Autism and Mild Sensory Problems.

Exclusion Criteria:

- Children with Severe and Profound Intellectual Disability.
- Children with Intellectual Disability having Multiple Disabilities.

Instrument for data collection

It was found that the various tools used for the assessment of learning outcomes of CWSNs are following:

1. Functional Assessment Checklist for Programming
2. Madras Developmental Programming System.
3. Behavioural Assessment Scale for Indian Children (MR)
4. Upanayana checklist.
5. Others (self-developed/framed checklist used by various organizations like AIISH, Mysore, NIHH, NIVH, Composite Regional Centres for PWD and NGOs).

The tool had been given to 8 professionals having a Post graduate and/or doctoral degree as well as working experience of more than 3 years in the field of disability rehabilitation. Six of them responded/ personally explained about changes need to be carried out in the existing tool. As per the suggestions received from various professionals, changes carried out in the tool, based on the professional's comments

Pilot study was conducted with six subjects (two each from the VI, HI and ID). (Correlation) was found 0.86. This indicates the validity of the items in the developed tool.

Procedure of data collection

During theoretical sampling researchers take one step at a time with data collection, followed by analysis, followed by more data collection again until a category reaches the point of "saturation", the concept which is explained in terms of "when no new data are emerging" (Corbin and Strauss, 2008).

The SSA office at Jaipur (Siksha Shankul) and at Lucknow extended their complete support in this regard. Regional Institute of Education, Ajmer sent the formal letter about- a) permission regarding data collection and b) List of inclusive and special school available at Jaipur, Ajmer, Varanasi and Lucknow. Shiksha shankul, Jaipur has provided the list of schools having CWSNs of different categories admitted. Viklang Kalyan Vibhag, Lucknow has also provided the list of schools. The data had been collected in 12 schools of Rajasthan and 14 schools of Uttar Pradesh.

Methods of data collection or administration of instrument

- The methods used for the data collection was individual assessment as required by the particular item, observation in individual and group situation, interview with the teacher and collection of information through anecdotes/work samples.
- The actual time allotted for the conducting assessment and recording the outcome/response varied child to child and also as per the demand of the activity.
- The class teachers were informed about the data collection well in advance and the team entered the school/classroom as per the suitable/convenient time given by principal/in-charge/class teacher.

Recording of responses/filling of data sheets

Responses were recorded manually by the researcher but wherever it was required and consent was given, teacher's agreement was also taken. 78 copies of the data recording sheets were made. Each recording sheet also contained the space for writing qualitative description of participants.

The reason behind not using video camera for all the sessions and for all the activity was-Most of the teachers and parents did not agree on the use of video camera for recording the responses of their children.

Data Analysis and Interpretation

For data recording, researcher had prepared 78 data sheets (one for each participant). There were 55 items in each data sheets. There were 13 items in language, 23 items in mathematics and 19 items in EVS. On every session, as per the activities and number of participants, data sheets were filled by the researchers; however at the end of the session (while filling of the responses in data sheet), teacher's views were also collected. Some of the parents of children with Intellectual Disabilities were also present in school premises and wherever required, parental views on competencies on particular item were also collected. As the data recording was completed, the response elicited against 55 items were quantified based on following criteria-

- If the CWSNs were unable to perform the activity/totally dependent then zero (0) score was allotted to them for the particular item.
- For the item where CWSNs were partially clear/partially dependent or which was lacking quality, only one (1) score was allotted.
- When CWSNs were independent in the item or their response had clarity and contained quality as expected against particular stimuli, maximum score three (2) was allotted.

It is to be noted that based on the above criteria, maximum score of one participant can be 110 (55x2), since the number of participants were 78, hence the maximum total score of the group can be 8580 (110x78).

As the data with the response from 78 participants was available, it was fed in Microsoft Office Excel worksheets. With the help of Statistical Package for Social Sciences (SPSS), one way ANOVA and t test was conducted. The ANOVA tables are developed and based on t-value the hypothesis is tested.

Table-1: Mean scores of different groups (HI/VI/MR) on learning outcomes checklist on functional academics and results of one way ANOVA

Subjects	Groups					
	HI		VI		ID	
	Mean	S.D	Mean	S.D	Mean	S.D
LANG	20.346	2.814	17.423	4.805	18.000	4.000
MATHS	35.962	9.329	33.385	10.731	27.308	11.883
EVS	30.308	8.452	27.500	9.175	28.500	6.617
Total	86.615	19.309	78.308	23.116	73.808	21.722
	F value				Sig.	
Test statistics	F (Language)= 1.616				0.206	NS
	F (Mathematics)= 4.302				0.017	S*
	F (EVS)=0.834				0.438	NS
	F (Total)= 2.186				0.119	NS

S*= Significant; NS-Non-significant;

Overall mean values in different groups with different superscripts are not significant except in Mathematics as indicated by Scheffe's Post hoc test.

The above one way ANOVA table present that the difference in scores of the three groups (VI/HI/ID) is statistically significant in Mathematics, however it is non-significant for Language and EVS. Further, as per ANOVA table, the difference in total mean of the three groups is non-significant. Hence the hypothesis – “*there is no statistically significant difference in the scores of CWSNs belonging to VI, HI, and ID group on learning outcome checklist in functional academics*” is rejected in case of Mathematics.

Table-2: Post Hoc Tests (Multiple comparisons between the groups (VI/HI/ID))

Subjects	(I) DISABILITY	(J) DISABILITY	Mean Difference (I- J)	Sig.	
LANG	VI	HI	-2.000	.156	
		ID	.308	.826	
	HI	VI	2.000	.156	
		ID	2.308	.102	
	ID	VI	-.308	.826	
		HI	-2.308	.102	
MATHS	VI	HI	-2.654	.383	
		ID	6.000	.051	
	HI	VI	2.654	.383	
		ID	8.654*	.005	*HS P< 0.05
	ID	VI	-6.000	.051	
		HI	-8.654*	.005	*HS P< 0.05
EVS	VI	HI	-2.962	.205	
		ID	-1.115	.632	
	HI	VI	2.962	.205	
		ID	1.846	.428	
	ID	VI	1.115	.632	
		HI	-1.846	.428	
TOTAL	VI	HI	-7.615	.220	
		ID	5.192	.402	
	HI	VI	7.615	.220	
		ID	12.808*	.041	*S P< 0.05
	ID	VI	-5.192	.402	
		HI	-12.808*	.041	

N=78, *S=Significant, *HS= Highly significant

From the above Post-Hoc table; it can be interpreted that the difference in mean scores achieved by the three groups (VI/HI/ID) is not significant in case of language and environmental science; *however the difference in mean scores of HI and ID in mathematics is highly significant.* Further the difference in total score of HI and ID is also significant. As we know that children with intellectual disabilities has problem in understanding the arithmetical concepts due to sub

average intelligence, it can be easily understood that children with ID perform poor on Mathematics domain of learning outcome checklist.

It is not easy to get CWSNs in regular school, however presently both the government (Uttarpradesh and Rajasthan) has started giving emphasis on the education of CWSNs. Finally there were 62 students are from government and 16 were from private schools.

Table-3: Comparison of mean score based on type of school (Government/Private)

Subjects	Type of school	N	Mean	Levene's Test for Equality of Variances		t-test for Equality of Means			
				F	Sig.	t	df	Sig.	
LANG.	Govt.	62	19.18	.218	.642	1.049	76	.297	NS
	Private	16	17.69						
MATHS	Govt.	62	33.55	.868	.354	2.123	76	.037	S* P<0.05
	Private	16	26.94						
EVS	Govt.	62	29.02	.888	.349	.566	76	.573	NS
	Private	16	27.69						
TOTAL	Govt.	62	81.74	.066	.798	1.503	76	.137	NS
	Private	16	72.31						

*S=Significant, *HS= highly significant

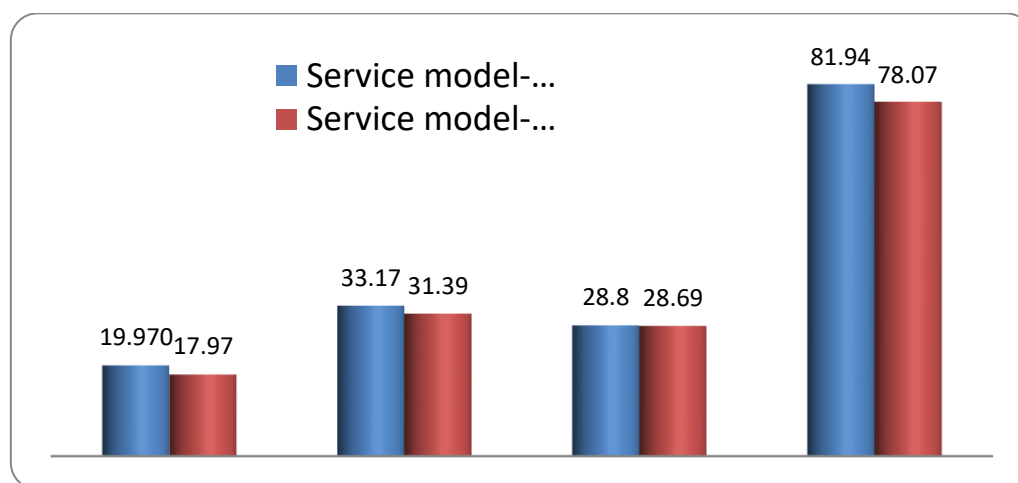
The above table presents that although the difference in mean scores of the students of the three groups (VI/HI/ID) studying at government and private schools is statistically non-significant in case of language and EVS but it is statistically significant in case of Mathematics. Further the difference in total mean of the students of groups (VI/HI/ID) studying at government and private schools are also statistically non-significant. Hence it can be presented that the null hypothesis –There is no statistically significant relationship between the mean scores of CWSNs studying in government and private schools is rejected in case of Mathematics subject. It can be concluded that other than mathematics, the mean scores of CWSNs studying in government and non-government schools is statistically non-significant.

Table-4: Comparison of mean score based on the type of service model for CWSNs (Inclusive /Special)

Subjects	Service model	N	Mean	Levene's Test for Equality of Variances		t-test for Equality of Means			
				F	Sig.	t	df	Sig.	
LANG.	Special	43	17.98	0.128	0.722	-1.752	76	0.084	NS
	Inclusive	35	19.97						
MATHS	Special	43	31.40	14.538	0.000	-0.685	76	0.496	NS
	Inclusive	35	33.17						
EVS	Special	43	28.70	0.002	0.965	-0.054	76	0.957	NS
	Inclusive	35	28.80						
TOTAL	Special	43	78.07	5.189	0.026	-0.752	76	0.454	NS
	Inclusive	35	81.94						

S*= Significant; NS-Non-significant;

After analysis it is found that total mean scores of the CWSNs studying in special school is 78.07 and in inclusive school is 81.94. The t value 0.752 is found statistically non-significant. When we have a look on the total mean scores of Special and Inclusive schools for Environmental science, it is almost equal (28.70 and 28.80 respectively).



Although the scores of CWSNs studying in two different available service models is statistically non-significant but it is important to consider that the mean scores of CWSNs studying in Inclusive schools is comparatively better than the scores of CWSNs studying in Special schools in all the three domains of learning outcome checklist. Hence, there are two important outcome of this study are reflected from the above table-

- The difference in total mean scores of CWSNs studying in Special and Inclusive schools is found statistically non-significant. Hence the hypothesis- there is no statistically significant relationship between the mean scores of CWSNs studying in inclusive and special schools at primary level is accepted.
- The mean scores of CWSNs studying in Inclusive schools are comparatively better than the scores of CWSNs studying in Special schools in all the three domains of learning outcome checklist. Hence the role of inclusive education for CWSNs has emerged to be very significant in present scenario.

Major Findings and Discussion

- 1) The difference in total mean scores of CWSNs studying in Special and Inclusive schools is found statistically non-significant. Hence the hypothesis- there is no statistically significant relationship between the mean scores of CWSNs studying in inclusive and special schools at primary level is accepted.
- 2) The mean scores of CWSNs studying in Inclusive schools are comparatively better than the scores of CWSNs studying in special schools in all the three domains of learning outcomes, although this difference is statistically non-significant.
- 3) The differences in total mean score of the three groups (VI, HI, MR) are significant. Hence the hypothesis – “there is no statistically significant difference in the mean scores of CWSNs belonging to VI, HI, and ID group on learning outcome checklist in functional academics is rejected in Mathematics, however it is accepted for EVS and language.
- 4) The difference in total score of HI and ID is significant. As we know that children with intellectual disabilities has problem in understanding the arithmetical concepts due to sub-average intelligence. It is understood that children with ID perform poor on Mathematics domain of learning outcome checklist.
- 5) It is not easy to get CWSNs in regular school, however presently both the government (Uttarpradesh and Rajasthan) has started giving emphasis on the education of CWSNs. With the help of authorities (Shiksha Shankul of Rajasthan and SSA as well as department of disability welfare of U.P.), researcher received the list of schools which helped to pinpoint and then to identify the required population of this project. The effort was made to keep maximum number of samples studying in government schools; however the contribution of special school cannot be ignored. Finally there were 62 students are from government and 16 were from private schools.

- 6) There is no statistically significant relationship between the mean scores of CWSNs studying in government and private schools are rejected in case of Mathematics. The mean scores of CWSNs studying in government and non-government schools are statistically non-significant in EVS and language.



(A child with Intellectual Disabilities is not able to engaged himself for musical chair game in inclusive classroom without physical prompt from teacher)

The performance of the children belonging to three different groups (VI/HI/ID) varies significantly in Mathematics compare to other two subjects (Language and EVS). Hence proper strategies need to be identified for teaching Mathematics to children with

various disabilities and it must be very clear for children with ID. One way ANOVA table presented that the difference in scores of the three groups (VI/HI/ID) is statistically significant in Mathematics; however it is non-significant for Language and EVS. Further, as per ANOVA table, the difference in total mean of the three groups is non-significant.

Many teachers in the field also reported that – “Inclusion of children with HI and VI is not a big issue but how can you expect from us to include children with Intellectual Disabilities.” Some teachers did not have material for assessment and teaching. Hence Inclusive Education in true sense needs to be done with lots of research, development and continuous feedback from parents.

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- (The study is the part of the project carried out in the year 2016-17 under PAC programme. The complete study can be accessed from DE/DEE, Regional Institute of Education, NCERT, Ajmer)**