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RESEARCH ARTICLE

Impact of Quality of ECCE Programs on Cognitive Development and School Readiness of Children.

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Abstract

The significance of Early Childhood Care and Education for human resource development has been globally recognized. There is a growing body of research evidence to prove that children who received quality early childhood education are not only more likely to be healthy and ready for formal education but also show better progress at the primary stage and thus it helps in reducing wastage and stagnation. The present study examined the effectiveness of ECE programs run by government (Aanganwadi) and Non-government organizations in terms of cognitive development and school readiness of children. The sample included six ECE centers of Jaipur city. Out of those six ECE centers, three were Aanganwadi center and three centers were run by NGOs. From each center 25% of children present in the class were included in the sample. The information were collected with the help of cognitive development tool developed by Dr. Hema Pandey and school readiness tool prepared by the World Bank and CECED department of Ambedkar university. The findings of the study shows that Aanganwadi run under ICDS program are lagging behind the ECE centers run by NGO's in terms of cognitive development and school readiness of children enrolled in it. Although the infrastructure facility were not found upto the mark in ECE centers run by non-government organization but the condition was found worse in government run Aanganwadi centers. They are not properly equipped to deal with the educational needs of preschool children. Moreover the ECCE personnel working in Aanganwadi lacked sufficient skills to deliver educational training to the enrolled children. To reap the maximum educational benefits of existing ECCE programmes the staff need to be trained along with boosting the infrastructure inputs.

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Introduction:-

The foundation of lifelong learning laid by remarkable transformation in the developmental areas of children has been corroborated through research evidences. The quality of environment provided during early years of life has a very important role to play in the process and pace of transformation in children. As they interact with the stimulating and enriched environment, they explore it, manipulate it and form new schemas by accommodating or assimilating the new information (Piaget, 1964). From the neuroscience point of view, the importance of enriched environment lies in the fact that, 80% of human brain develops by the age of four years and 90% by the age of six. 700 new synaptic connections formed every second during early childhood years through the interaction of genes and a child's environment and experiences, especially "serve and return" interaction with adults (National Scientific Council of the Developing Child, 2007). So to develop the full potential of brain the child requires a caring and stimulation environment. Early Childhood Education Programme is not only have positive implication from individual self growth point of view but it can reduce social inequality by compensating for vulnerability and disadvantages resulting from factors such as poverty, gender, race, caste and religion World Bank Report, (2007). Apart from this the fact cannot be denied that outcomes of primary education cannot be improved despite high investments unless the early childhood education that ensures preparedness is also improved. It has been found that

children who have undergone pre-primary education show better progress at the primary stage and thus it help in reducing wastage and stagnation.

Recognizing the importance of early Childhood education, the Government of India has made continuous effort in the form of a number of constitutional provisions, policies and programmes. The 86th constitutional amendment introduced two articles- Article 21 for right to free and compulsory education for 6-14 years old children and Article 45 to urge states to provide ECCE for all children until they complete the age of six years. The Right of Children to Free and Compulsory Education (RTE) Act 2010 did not recognized ECE as compulsory provision but urges states to provide free pre-school education for children above three years. The importance of early childhood education has also been acknowledged in 12th Five Year Plan and laid emphasis universalizing preschool education and improving school preparedness. Further the approval of National Early Childhood Care and Education policy, 2013 comprising of the National ECCE Policy, National Curriculum Framework for ECCE and Quality committed to universal access to quality early childhood education to all children under 6 years of age. The formulation of the National Policy on Early Childhood Care and Education, 2013 was followed by the development of a National Curriculum Framework and Quality Standards for ECCE. The Ministry of Women and Child Development, Government of India has initiated measures to enable all States/UTs to develop and pilot the implementation of the early childhood education curriculum in the ICDS context. The National ECCE Curriculum Framework is to promote quality and excellence in early childhood care and education by providing guidelines for child care and early educational practices. The framework is intended to be a guiding document for ECCE service providers across all regions. The Quality Standards Framework identifies the key principles, indicators and exemplary good practices required for assuring quality in ECCE services. It is a framework that assists the ECCE centers and service providers in developing and maintaining dynamic quality programmes that reflect the objectives, the programme standards and practices of the ECCE policy.

In India the ECCE services are provided through three channels - public, private and Non- governmental organizations. The Government of India runs the Integrated Child Development Services (ICDS) Scheme, which is one of the world's largest programs for early childhood development. This program is coordinated by the Ministry of Women and Child Development. The second major provider of ECCE is private preschools running under different nomenclatures such as nurseries, kindergartens, playschools, preparatory schools and pre-primary classes/sections in private schools. Besides this, several NGOs have been engaged in conducting small-scale innovative ECCE programmes focused on children of disadvantaged population groups (National EFA Review, 2014).

The expansion of ICDS contributed significantly to the increased coverage of ECCE services. The number of projects under the ICDS scheme has increased from 4,608 to 7,067 projects during the period 2001-02 to 2014-15. The number of Anganwadi Centres (AWCs) increased by 145 per cent (from 545,714 to 1,342,285 centres) during the period 2001-2002 to 2014-15. The total number of children of age 3-5+ years, who received pre-school education in Anganwadi Centres increased by 19.09 % (from 16.7 million to 34.9 million) during the period 2001-02 to 2014-15 (MWCD, Annual report 2014-15).

Government has approved the Strengthening and Restructuring of ICDS Scheme with an allocation of 1,23,580 crore during 12 Five Year Plan. The reforms include repositioning of AWS as "Vibrant Early Childhood Development Centre" to become the first village outpost for health, nutrition and early learning with adequate infrastructure and human resources. The transaction of the Annual curriculum will be supported by the use of PSE Kit containing local and culturally relevant play and learning materials. As per the restructured ICDS, norms for PSE kit have been revised from Rs.1000 per AWC per annum to Rs. 3,000 per AWC per annum.

ECCE services provided by Non-Governmental Organisations (NGOs) Pre-school education programmes are also run by national and local NGOs which get financial assistance from grant-in-aid schemes of the government and national and international aid agencies. The ECCE services provided by voluntary and non-governmental organizations (NGOs) play an important role in reaching children from socially and economically disadvantaged groups like tribal people, migrant labourers, slum dwellers and rural children in difficult circumstances.

Despite the recognition of the importance of ECE and continuous effort towards provision of quality pre-school education by the Government of India, there are still substantial numbers of children lacking preschool education. Although there is a significant increase in enrollment figure in elementary education but still dropout rate and

retention rate is a matter of concern. The level of learning is still very low among primary school-age children. Approximately 250 million children of this age group around the world are lacking in the skill of reading, writing and arithmetic (EFA Global Monitoring Report of UNESCO, 2012). The achievement survey carried out by NCERT & ASER (2005-2014), indicates the low level of learning among students of primary grades. A large number of students of grade I and II were found in lacking the basic competencies in reading, writing and arithmetic. The present scenario of early childhood education raises urgency towards developing adequate school readiness through good quality ECE programmes.

Objectives:-

1. To assess the extent of variations in quality of ECCE provisions offered by government and NGO sector.
2. To find out the difference in school readiness of children in ECCE centre run by government and NGO sector
3. To find out the difference in Cognitive development of children in ECCE centre run by government and NGO sector

Methodology:-

The present descriptive study was carried out in Jaipur city. The sample included six early childhood care and education centers. Out of them three Aanganwadi centers run under ICDS Program and other three centers run by Non-government Organizations were included in the sample by random sampling technique. From each center 15 children (total= 90 children) in the age group of 3 to 5 years were selected as the sample. All the information was collected from primary as well as secondary sources. The primary data was collected with the help of tools such as, to measure the cognitive development of children the tool developed by Dr. Hema Pandey was used. The level of school readiness of children was measured by the School Readiness Instrument (SRI), which had been developed and standardized by the World Bank (India). The instrument assesses the child on cognitive readiness in terms of pre-number and number concepts, reading readiness and sequential thinking, classification and language skills. The quality of early childhood care and education centre was measured by self constructed tool consisted of different components such as infrastructure, learning materials and equipments, teachers and staffs and teacher child interaction.

For the effective administration of the tools, a well planned time schedule was prepared by the investigator in consultation with his supervising teacher. Accordingly, the Heads of the six early childhood centers were contacted in person and the administration schedule and nature of the tools were briefly described to them and the days of administration of the test were fixed according to their convenience. On the very first day of visit, a good rapport with children was established prior to the testing. Before administering the testing, the child was seated comfortably. All the testing materials were arranged systematically in order to avoid destruction and to make the presentation easier during the process of testing. Both the tools were administered orally in a room with the help of teachers to ensure privacy of the administration of the test. There was no time limit. Each child was given sufficient time to complete all the test items. Test scored were recorded simultaneously on the score cards. The tool for recording quality of the center was filled by the researcher through observing the activities and classroom interaction of the centre for three consecutive days. The data obtained was tabulated analyses with the help of SPSS version 20

Analysis and Discussion:-

Table No. 1 Mean and SD value of quality of Aanganwadi centre and early childhood center run by NGOs

	Aanganwadi Center		ECE center run by NGOs	
	Mean	SD	Mean	SD
Physical facility	3.33	0.57	16.6	1.15
Teaching Learning Materials	14.6	4.04	24f.6	0.58
Teaching learning Methods	11	3.00	13.66	0.57

The above table no. 1 indicates that Aanganwadi centers are lagging behind the ECE center run by NGOs in physical facility, teaching learning materials and teaching methods. The physical facilities such as proper building, indoor and outdoor space, water and toilet facility and lighting and ventilation in Aanganwadi iwas found in a pathetic condition (mean= 3.33, SD=0.57). 90 percent of Aanganwadi taken into sample are running in one room

that too is on rent. In this condition, the facility for sufficient outdoor and indoor space cannot be imagined. However, ECE centre run by NGOs have pucca building with sufficient number of classrooms and indoor space (Mean=16.6, SD=1.15). Separate toilets for boys and girls and availability of drinking water were found missing in both type of centers.

As far as availability of teaching learning materials and furniture is concerned, Aanganwadi centers were having negligible quantity of materials (Mean_{Aang}= 14.6.). Moreover, of those scarce learning materials, most of them were not in a proper condition and they were poorly maintained and broken. However in case of ECE center run by NGOs, it cannot be said that they have adequate amount of indoor and outdoor teaching learning materials but they were found better than Aanganwadi center in this regard (Mean_{NGO}= 24.6.). This may be because during summer and winter holidays the NGOs taken into the sample, run workshops for making teaching learning materials from indigenous materials. The information regarding teaching methods followed in the ECE classrooms was obtained through observation by the researcher. It can be seen from the data calculated that teaching methodology followed in ECE center run by NGOs (mean= 13.3) were better than that of Aanganwadi center (mean= 11.0). There was complete lack of child centeredness, logical flow in teaching, examples from day-to-day life and individual attention to each child from teacher's side. It may be because of the lack of sufficient training and skills among Aanganwadi teachers. The information obtained from the neighbors of the Aanganwadi center revealed that the centre incharge remains absent for most of the working days and send some of her relative to take care of children at the center. This raises a question on supervision and monitoring system of ICDS project. The teaching strategies followed by Aanganwadi teachers were found very poor during observation. In ECE center run by NGOs the teachers were found to follow the logical sequence in their teaching. They were quoting examples from children's day to day life and allowing them sufficient time to respond. Although they were not professionally trained in ECCE but most of them were qualified with Bachelors in Education.

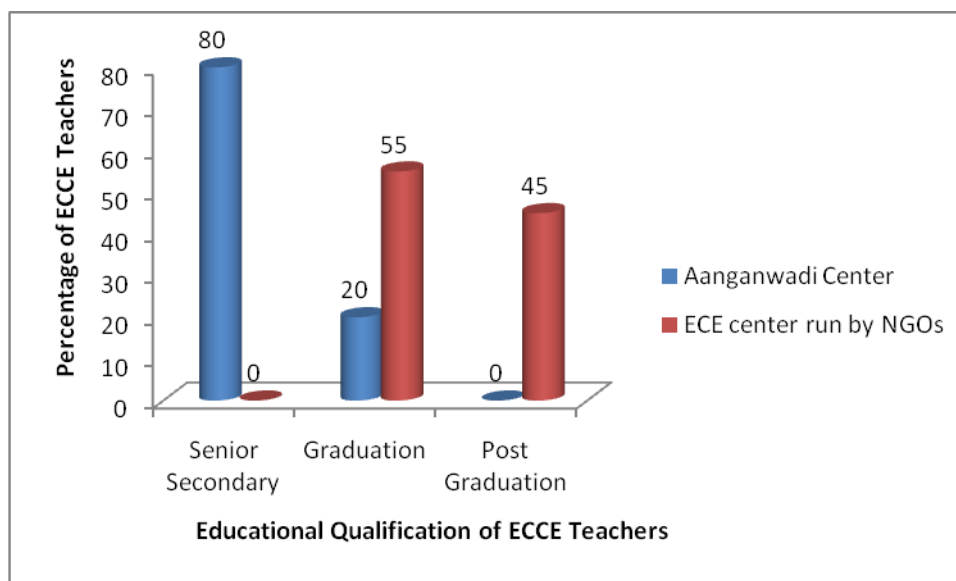


Figure No. 1:- Percentile distribution of Educational and professional qualification of ECE teachers

The above figure no. 1 indicates that among Aanganwadi teachers, 80 percent of them were having educational qualification upto senior secondary level and only 20 percent of them were Graduate. However in case of ECE center run by NGOs, 55 percent teachers were found graduate and 45 percent were post graduate. Beside this 88 percent of teachers of ECE center run by NGOs were having the professional qualification of B.Ed. It may be because of the presence of primary classes in NGOs run centers. As far as professional qualification of Aanganwadi teacher is concerned none of them were having any professional qualification either in ECCE or in Education.

Table No.2:- Mean SD and t value of cognitive development of children of Aanganwadi centre and early childhood center run by NGOs

The above table no 2 shows that there is a significant difference ($t=12.86$) in cognitive development of children in Aanganwadi center and ECE center run by NGOs. The mean value shows that the cognitive development of children

Types of Preschool	N	Mean	Std. Deviation	t value
Aanganwadi Center	45	60.62	17.14	12.86*
Center run by NGOs	45	101.22	12.42	

of ECE center run by NGOs (mean= 101.22) is far better than the cognitive development of children of Aanganwadi center (mean=60.62). This may be because of the skilled teachers and better teaching methodology followed in the ECE centre run by NGOs. The children of ECE centre run by NGOs were found doing better in conceptual skill, comprehension, memory, problem solving, visual perception and object vocabulary. The poor performance of Aanganwadi children may be contributed to absenteeism of teacher as well as of children, poor teaching methods followed by the teachers and lack of basic physical facilities and learning materials. There may be some other factors such as socio economic background of families from which children are coming and education level of parents.

It has also been found in the study of CECED department of Ambedkar University (2013) that ECE centers run by NGOs demonstrate a greater focus on cognitive development in their curriculum as compared to the Aanganwadis. Both types of ECCE centers (Aanganwadis and ECE centers run by NGOs) were observed to be focusing primarily on formal teaching of the 3 r's through the rote method, with very few activities conducted for concept formation and skill development. In none of the Aanganwadis, there was any activity that ensured opportunity to all children to learn.

Table No. 3:- Cognitive Development score (in %) obtained by children of Aanganwadi centre and early childhood center run by NGOs

Score	Aanganwadi Center	ECE center run by NGOs
Low (35-74)	86.6	2.22
Average (75-115)	13.3	73.3
High (116-155)	0	24.4

Table no.3 shows the percentage of low, average and high achievers in cognitive development score of children of Aanganwadi center and ECE center run by NGOs. It can be seen from the table that 86.6 percent of children of Aanganwadi were found to achieve low cognitive development score. Only 13.3 percent children achieved average score in cognitive development. On the other hand, 73.3 percent of children of ECE centre run by NGOs achieved average score and 24.4 percent of children scored high in cognitive development assessment.

Table No. 4:- Mean SD and t value of school readiness of children of Aanganwadi centre and early childhood center run by NGOs

Types of school	N	Mean	Std. Deviation	T
Aanganwadi	45	10.82	3.256	9.16*
ECE center run by NGO	45	24.44	9.421	

The above table no. 4 indicates the difference in school readiness level of children of Aanganwadi and ECE centre run by NGOs. The value of t was found significant ($t=9.16$), that means, there is a significant difference in the level of school readiness of children of Aanganwadi and ECE centre run by NGOs. The mean value shows that children of ECE centre run by NGOs ($m=24.4$) are more ready for formal education system as compared to children of Aanganwadi. Children of Bodhshala and Prayas preschool (NGOs run ECE centre taken into the sample) were found to be better in pre-number concept, space concept and concept of sequencing, classification, reading, pattern making and sentence formation. These all concepts make the child ready for formal education system and helps the child to understand the further concepts in a better way.

Although children in the early childhood age group are not expected to be exposed to formal reading, writing and number, it was observed that in almost all Aanganwadi centers taken into the sample, all children irrespective of age were exposed to formal education through rote memorization. Activities like copying from the blackboard, charts or text- book were observed. Possibly parental pressures may be responsible for these mixed priorities, as reflected in their curriculum. However 75 percent of ECE centers run by NGOs were observed to conduct readiness activities for children.

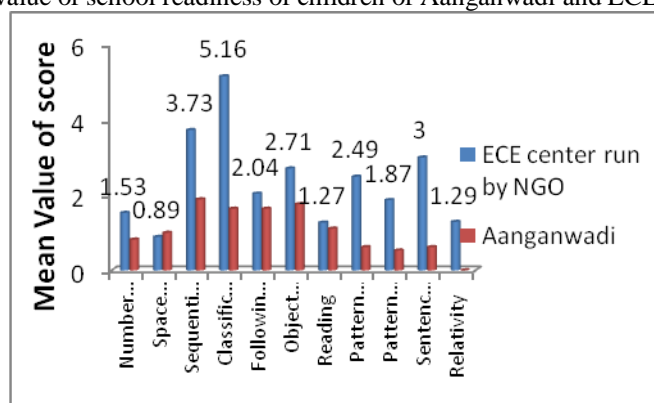
Table No. 5:- School readiness score (in %) obtained by children of Aanganwadi centre and early childhood center run by NGOs

Score	Aanganwadi Center	ECE center run by NGOs
Low (1-14)	88.9	17.8
Average (15-28)	11.1	35.6
High (29-42)	Nil	46.7

As the table no 5 indicates, a major percentage of Aanganwadi children (88.9%) performed low in school readiness test. Only 11.1 % children scored average on school readiness test. However approximately half of the children of ECE centre run by NGOs (46.7%) scored high and 35.6 % of children scored average on school readiness test.

Table No. 6:- Mean SD and t value of various dimensions of school readiness of children of Aanganwadi centre and early childhood center run by NGOs

Dimensions of school readiness	Types of school	Mean	Std. Deviation	T
Pre-number Concept	Aanganwadi	.82	.614	5.14*
	ECE center run by NGO	1.53	.694	
Space concept	Aanganwadi	1.00	.000	2.34*
	ECE center run by NGO	.89	.318	
Sequential thinking	Aanganwadi	1.89	1.613	4.57*
	ECE center run by NGO	3.73	2.168	
Classification	Aanganwadi	1.64	1.368	5.99*
	ECE center run by NGO	5.16	3.680	
Following instruction	Aanganwadi	1.64	1.151	1.15
	ECE center run by NGO	2.04	2.022	
Number/Objects matching	Aanganwadi	1.76	.957	4.95*
	ECE center run by NGO	2.71	.869	
Reading readiness	Aanganwadi	1.11	.318	1.90*
	ECE center run by NGO	1.27	.447	
Pattern making (A)	Aanganwadi	.62	1.466	5.11*
	ECE center run by NGO	2.49	1.961	
Pattern making (B)	Aanganwadi	.53	1.375	3.66*
	ECE center run by NGO	1.87	2.018	
Sentence Making	Aanganwadi	.62	.535	7.62*
	ECE center run by NGO	3.00	2.023	
Relative comparisons	Aanganwadi	.00	.000	8.93*
	ECE center run by NGO	1.29	.968	

Figure 2:- Mean value of school readiness of children of Aanganwadi and ECE center run by NGOs

The above table no. 6 as well as figure no 2. shows the significant difference in almost all the areas of school readiness of children of Aanganwadi and centre run by NGOs except the concept of space in which the children of NGOs run center performed little better than Aanganwadi center.

Conclusion:-

The preceding discussion highlights the wide range that is evident in quality of ECE services, cognitive development and level of school readiness of children of Aanganwadi centers run under ICDS Programme and ECE centers run by Non Government Organizations. As far as Anganwadis are concerned, significant inputs in education infrastructure and staff training are required to boost the educational benefits of existing ECCE programmes. Special focus must be given to employing dedicated educational staff. The educational experiences provided in ECE centers run by NGOs is able to demonstrate relatively “good practice” in low- cost settings but they are few and available to a very small number of children of specific communities. The teaching methods of these ECE centers of NGOs are predominated with formal teaching and rote memorization. This prepares the children for formal education but completely disregard the developmental needs and interest of children in this stage of childhood. Appropriate interventions need to be formulated and implemented to remove the quality-related deficiencies in ECCE services. Linking ICDS (Aanganwadi) with schools can help in maximizing the impact of the scheme by making it a part in the implementation of the Right to Education (RTE) Act.

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