

EVALUATING THE IMPACT OF CHILDHOOD ENVIRONMENT IN WORD RETRIEVAL

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Abstract

Language development is the process by which children understand and communicate language during early childhood. The ability to think and talk a right word as per the situation is word retrieval. The family structure and the linguistic ability of the children have a greater influence on the academic performance in joint families than in nuclear and orphanages. The main aim of the study is to find out the significant differences in word retrieval ability among children from different childhood environment aged from 5 to 7 years. Forty-five participants were taken for the study by administering ELLA naming subtest. They were grouped into three (G1-Joint family, G2-Nuclear family and G3-Orphanages) based on their childhood environment of development. Independent t test was carried out using SPSS version 23 to find the association between groups. An evident difference in word retrieval ability was noted between groups in terms of number of errors and reaction time. Thus, childhood environment has a significant impact on word retrieval abilities. This should be considered as an important factor during assessment and management of linguistic and academic problems in children.

Keywords: Word Retrieval, Word Finding, Nuclear, Joint, Orphanage, Rapid Naming And Environment.

Introduction:

Language is defined as a system of communication using sounds or symbols that enables us to express our feelings, thoughts, ideas, and experiences (Goldstein et al 2008). Language development is the process by which children understand and communicate using language during early childhood. From birth up to the age of five, children develop language at a very rapid pace. The stages of language development are universal among humans. However, the age and the pace at which a child reaches each milestone of language development vary greatly among children. Thus, language development in an individual child must be compared with norms rather than with other individual children. Development of

language reflects the interplay of factors like social, perceptual, conceptual, linguistic and cognitive processing.

Children will start language during their childhood from their parents. The language development will be initiated with this understanding and communicating in their mother tongue. The environment in which they are brought up plays a significant role in language development. Family plays a predominant role than their linguistic skills and early academic institutions. Grand parenting in a joint and extended families will encourage the children to speak earlier and clearly. The attitude of parents and grandparents determine the language development of children.

Word Retrieval and Family Structure:

The ability to think and talk a right word as per the situation is word retrieval. The word retrieval ability at the developmental stage in children undergoes a significant change. The psycholinguistic variables like word frequency and visual word recognition can influence word finding. The word retrieval ability depends upon language development which in turn depends on the environment.

Academic achievement is also predicted by the family structure. The family structure involves the association of parents with their children in both personal and school issues. This encourages children to improve academic performance as they can maintain a transparent and a positive relationship with their parents without hiding any happenings. This understanding between parents and children is possible in case of joint and extended families. Children should be encouraged to communicate in their comfortable language frequently with their parents. This will have a positive impact on linguistic ability of the children. Family structure was the single greatest predictor of linguistic and academic achievement. The extent to which parents discussed school issues and attended school functions also had a positive impact on adolescent academic achievement. The family structure and the linguistic ability of the children have a greater influence on the academic performance in joint families than in nuclear and orphanages.

Literature Review:

In simple terms the expressions “*word retrieval problem*” or “*word finding difficulty*” imply difficulty in retrieving the words person knows and understands and has used it correctly before. However, they have difficulty retrieving such known words at times.

Children with developmental language disorder (DLD) and adults with language disorders are frequently found to have word retrieval difficulties.

A Word Finding Difficulty can impact many aspects of a child's life. It can negatively affect a child's oral communication and academic learning (German, 2002). For this reason, SLPs find it important to target a child's retrieval of words. Spoken language provides the primary skills for the acquisition of reading and writing (ASHA, 2001).

In an investigation regarding children's word-finding skills in connected speech, it was found that productivity level and specific word-finding behaviors differentiated the groups (German D, 1987). A diagnostic model for the assessment of word finding includes variation in stimulus context (multiple naming sections); incorporates indices traditionally used to define word-finding problems in adults and children (accuracy, response time, response analysis and secondary characteristics); and provides for a comprehension assessment of naming errors (German D, 1989). Children with word-finding disorders did not differ from normal children in language productivity but manifested significantly more word-finding characteristics in their narratives (Diane J. German and IL Elaine Simon 1991).

Family learning can also provide a range of benefits for parents and children including improvements in reading, writing and numeracy as well as greater parental confidence in helping their child at home (Brookes et al 2003). The home environment is an important setting for the acquisition of literacy knowledge because children have unique literacy opportunities at home such as observing literacy activities of others, engaging in joint reading and writing activities with other people, and benefiting from teaching strategies used by family members (Crystal Carroll, 2013).

The quality of preschool classrooms moderated the association between home environment quality and children's language and early literacy skills, suggesting the positive cumulative effects of home environment and preschool quality. It further supports that the existence of a detrimental effect of low preschool quality on children's language and early literacy outcomes: positive associations among home environment quality and children's developmental outcomes were found to reduce substantially when children attended low-quality preschool classrooms (Ana Isabel Pinto, 2013).

Need for the study:

Over the past few decades, literatures provide strong evidences on the impact of childhood environment on language abilities and language acquisition. A study from the National Institute of Child Health and Human Development (NICHD) found that children in

high-quality childcare environments have larger vocabularies and more complex language skills than children in lower-quality situations. In addition, language-based interactions appear to increase a child's capacity to learn.¹⁰ The results support the fact that children with a nourishing infant-caregiver interaction performs better in language as well as academic task. As word retrieval is a key ability needed for fluent communication it also has a significant effect on academic skills like reading and writing. Even though language as a whole is addressed in the literature, specific abilities contributing to the linguistic achievement like word retrieval are the less researched areas. To remediate the linguistic issues, specific abilities should be given importance and hence the current study focused on evaluating the effect of childhood environment in word retrieval.

Objective of the study:

The main aim of the study is to find out the significant differences in word retrieval ability among children aged from 5 to 7 years developed in different childhood environmental setup.

Method of the study:

Participants:

45 participants were selected for the study between the age ranges of 5 to 7 years. They were grouped into 3 based on their childhood environment of development. G1 consists of 15 children brought up in joint family (inclusive of grandparents, aunts, uncles, cousins, nephews, nieces and/or siblings-in-law), G2 consists of 15 children from nuclear family (inclusive of parents and their siblings) and G3 consists of 15 children from orphanage (residential institutions for orphans).

Tests Administered:

The rapid naming subtest from Emerging Literacy and Language Assessment (ELLA) was administered to check the word retrieval abilities of the participants. It consisted of three tasks; colour naming, object naming and colour/object naming. Children with no speech and language delay, significant pre-natal, peri-natal and post-natal history are included in this study. In order to exclude children with language development delay and other developmental issues Assessment of Language Development (ALD) were administered for the children before giving them the rapid naming test.

Method:

Initially, the participants were checked for speech and language delays using the ALD. The children whose receptive and expressive language scores are greater than or equal to 42 were eligible to undergo the rapid naming subtest from ELLA. The three tasks (colour naming, object naming and colour/object naming) were given to the participants. The total time taken to complete each task (reaction time) and the number of errors committed in each task were noted down. Three groups were compared and analyzed on the basis number of errors and reaction time. Independent t test was carried out using SPSS version 23 to find the association between groups.

Findings and Discussion:

The ELLA subtest consisting of colour naming, object naming, and combined task were administered among the children of three groups. The reaction time taken, and the errors committed by them are recorded by the researcher and tabulated. The recordings are also tested to know their association by using independent t test.

Table No 1 Reaction Time Taken By Children Among Groups

Reaction time (in seconds)	Groups									Total
	G1T1	G1T2	G1T3	G2T1	G2T2	G2T3	G3T1	G3T2	G3T3	
Slight (1.46-2.00)	0	0	0	0	0	3	0	0	0	3
Minimal (1.31-1.45)	0	0	0	0	0	1	0	0	1	2
Mild (1.16-1.30)	0	0	7	0	0	9	0	1	4	21
Moderate (1.00-1.15)	0	0	8	2	0	2	0	0	8	20
Fair (0.46-1.00)	4	2	0	4	9	0	5	0	2	26
Quite (0.31-0.45)	8	11	0	9	4	0	7	12	0	51
Profound (<0.30)	3	2	0	0	2	0	3	2	0	12
Total	15	15	15	15	15	15	15	15	15	135

Source: Primary data

Note: G1= Joint family, G2=Nuclear family and G3=Orphanage
 T1= Colour naming, T2= Object naming and T3=Combined task

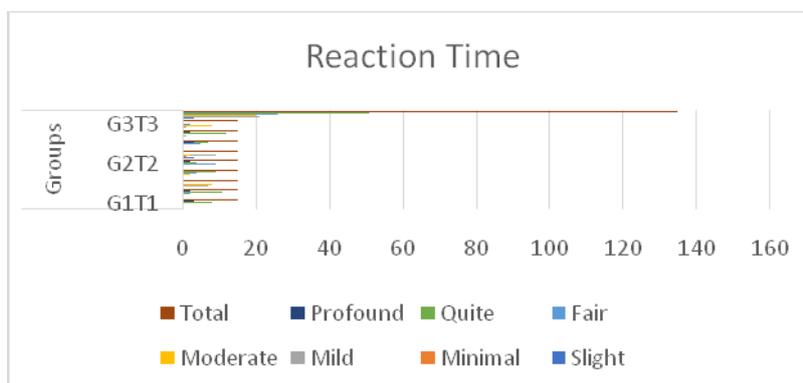


Fig No 1 Reaction Time Taken By Children Among Groups

ELLA test has been administered with the children from joint family, nuclear family and orphanages and the primary data was collected. The above graph depicts the reaction time taken by children for naming the colours and objects and the time taken for combined task. In colours and objects naming tests, there has no significant difference among three groups as they found it to be simple tasks. All three environments play an equal role in upbringing the children and they also found easy in identifying the colours and objects. As combined task is a quite complex, significant difference has been noted among three groups. Children from joint family had performed better while comparing with nuclear family and orphanages. This is because of the opportunity available in a joint family for a mutual, reciprocated and simultaneous interaction for the children. The parental and caregiver interaction is high in case of joint families and the children are exposed to a situation where they have to interact with all age groups and multiple characters simultaneously. This simultaneous and reciprocated communication in joint families helps the children to manage faster lexical access from different categories. Children from joint family get involved in various communication situations with variety of linguistic contents. This aids them in faster switching from one category to other during the combined retrieval task. The individual tasks namely, colour and object naming can be easily performed by children of any environment as it will not involve conflict in accessing different category names. The children from nuclear families, especially with dual income, children are exposed only to the electronic gadgets like computer and laptop and not to the parental interaction. This forms the main reason for the difficulty faced by the children in performing the combined task. In case of orphanages, the degree of caregiver interaction is obviously low and this hinders them in performing the combined task. The less frequency of lexical exposure also acts as a key factor in children from orphanages.

Table No 2 Errors Committed By Children Among Groups

Errors Committed	Groups									Total
	G1T1	G1T2	G1T3	G2T1	G2T2	G2T3	G3T1	G3T2	G3T3	
Poor (8-9)	0	0	0	0	0	3	0	0	0	3
Borderline (6-7)	0	0	0	0	3	3	0	0	0	6
Satisfactory (4-5)	2	0	0	3	3	4	0	0	5	17
Good (2-3)	7	5	7	9	8	3	3	3	7	52
Outstanding (0-1)	6	10	8	3	1	2	12	12	3	57
Total	15	15	15	15	15	15	15	15	15	135

Source: Primary data

Note: G1= Joint family, G2=Nuclear family and G3=Orphanage

T1= Colour naming, T2= Object naming and T3=Combined task

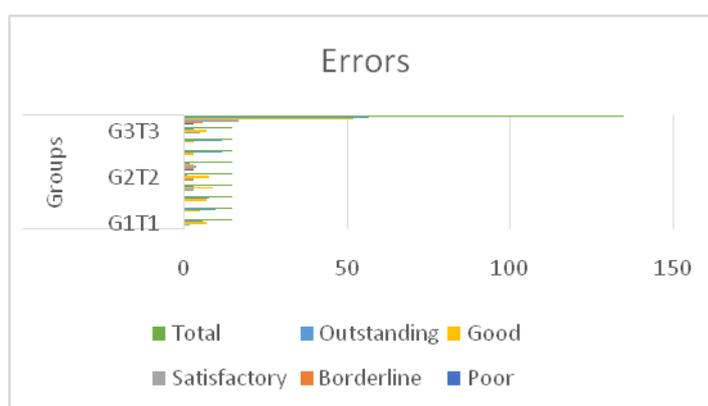


Fig No 2 Errors Committed By Children Among Groups

The above graph depicts the errors committed by children for naming the colours and objects and in combined task. It is evident that in case of colours and objects naming tests, there has no much difference among groups. As they are individual tasks, they are able to perform well with minimal errors. But in case of combined task, the children from nuclear family had performed poorer while comparing with other two groups. Thus, it is clear that the children from nuclear families are not mostly socially disconnected either with their grandparents or with their relatives. This social isolation makes them difficult to handle the situations of multitasking. The absence of social interaction is considered as the most important drawback of nuclear families and orphanages. The children from joint families will have a high degree of social inclusion, thereby develop a better communicative and interactive skills.

The number of errors and reaction time were compared between groups using independent t test. The following null hypothesis is framed to find out the association among groups.

H₀: Children among different groups do not differ towards reaction time and errors committed.

Table No 3 Association Between Groups- Independent Sample T -Test

Task	Group	Reaction time		Errors committed	
		P Value	Result	P Value	Result
Colour Naming	G1G2	0.355	Accepted	0.253	Accepted
	G2G3	0.668	Accepted	0.588	Accepted
	G1G3	0.638	Accepted	0.024	Rejected
Object Naming	G1G2	0.017	Rejected	0.012	Rejected
	G2G3	0.269	Accepted	0.002	Rejected
	G1G3	0.600	Accepted	0.116	Accepted
Combined task	G1G2	0.099	Accepted	0.005	Rejected
	G2G3	0.497	Accepted	0.029	Rejected
	G1G3	0.318	Accepted	0.490	Accepted

Source: Primary data (at 5% level of significance)

Note: G1= Joint family, G2=Nuclear family and G3=Orphanage

The result shows a significant difference in number of errors rather than reaction time. Significant difference was observed in G1& G3 in colour naming task. No significant difference was there between G1 & G2 as well as G2 & G3 in colour naming task. Even though there is no significant difference, G1 performed better than G2. On comparison between G2 & G3, lesser number of errors was seen in G3 because they have an opportunity to interact with other children of same age group. This peer group encourages the orphans to develop word retrievability. In object naming and combined task significant difference was seen between G1&G2 & G2&G3. While comparing the reaction time between groups, significant difference was seen only between G1G2 in object naming. Though there is no significant difference across groups, G1 performed better than G2 because they are exposed to an environment in which opportunities for interaction with their parents and grandparents are high. Due to less opportunity for interaction with others excepting their parents and siblings, G2 performs poor than G1.

Conclusion:

An evident difference in word retrieval ability was noted between groups in terms of number of errors and reaction time. Hence it can be concluded that childhood environment has a significant impact on word retrieval abilities. This should be considered as an important factor during assessment and management of linguistic and academic problems in children.

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