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### Usage of electronic gadgets and language development of preschool children

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#### Abstract

Modern gadgets have lot of features and applications to entertain children. Young children are operating gadgets with ease and getting attracted towards them. The influence of gadgets on child's development remains a question mark for researchers. The purpose of this present paper is to study the usage of gadgets and language development of preschool children. The sample included 200 preschool children selected from private preschools of Hyderabad. The tests used in this study were taken from NCERT publications. Nine language development tests were administered individually on the sample. Cronbach's alpha reliability of the tool is  $\alpha = 0.86$ . The findings reveal that when the age increases, children scores on language tests have increased significantly. Girls scored higher on language development tests as compared to boys. Children with high gadget usage during working day scored higher in the *following directions test* and *action agent test* when compared with low gadget usage children. Similarly, children with high gadget usage scored higher on *following directions*, *following propositions*, *name and use of objects*, *action agent test*, *comprehension test*, *ability to give name, age, sex and address and indication of parts of the body* tests than children with low gadget usage during holiday. Hence it can be concluded that high gadget usage children scored higher on language development tests than low gadget usage children.

**Keywords:** Language development, electronic gadgets, screen time, preschool children, vocabulary

#### 1. Introduction

Preschool children's language skills are essential for their social interactions and academic success. During the early years of life, children learn to master in phonetics, vocabulary of words and grammar. Language enables children to express their needs with others and to participate in cultural learning in remarkable ways. Pre-literacy and literacy activities can help further children's language competencies in both the preschool years and later schooling. Noam Chomsky (1975) [4] believed that children are born with an inherited ability to learn any human language. He claims that certain linguistic structures which children use so accurately must be already imprinted on the child's mind. Chomsky mentioned that every child has a 'Language acquisition device' (LAD) which encodes the major principles of a language and its grammatical structures into the child's brain. Chomsky's theory applies to all languages as they all contain nouns, verbs, consonants and vowels and children appear to be 'hard-wired' to acquire the grammar.

Early learning is very critical in children's language development in both receptive and productive linguistic skills. Language acquisition through exposure is what is occurring in this stage of human life, where the language seeps into the child's mind unconsciously (Christakis, 2009) [5].

Usage of technology is an important aspect which influences language development of children. Krmar *et al.* (2007) [11]. stated that technology has become part of the child's immediate environment as well, and its influence on language is undeniably significant. Their study found that children can effectively learn vocabulary from videos associated with live social interactions.

The present paper deals with the usage of electronic gadgets by preschool children and its influence on their language development.

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## 2. Methodology

### 2.1 Sample

The study was conducted in the Hyderabad city, Telangana State. The sample comprised of 200 preschool children belong to 3 to 6 years age group selected from private preschools. Table 1 shows the background information of the sample as per their age and gender.

**Table 1:** Distribution of children as per their age and gender (N=200)

Age	Boys	Girls	Total
3-4 years	50	35	85
4-5 years	22	17	39
5-6 years	47	29	76
Total	119	81	200

The above table shows that there are 50 boys and 35 girls, total 85 children between 3 to 4 years age group. Twenty two boys and seventeen girls belong to 4 to 5 years age group. Among 5 to 6 year old children, 47 are boys and 29 are girls. All together, the sample consists of 119 boys and 81 girls.

### 2.2 Tool

The tests used in this study were taken from NCERT publications (1986). These language tests were adapted from Gesell Scale and modified to the Indian standards. In the present study, few modifications were done by reframing four questions to suit the current trend. These tests are primarily

meant for knowing the degree of understanding the child possesses at different age levels and level of abstraction that the child achieves. The nine tests included in the present study are-(i) Following directions (ii) Following prepositions (iii) Naming and identification of objects (iv) Naming and use of objects (v) Action agent test (vi) Comprehension test (vii) Ability to give one's name, age, sex and address (viii) Ability to distinguish right and left (ix) Indication of parts of the body. Cronbach's alpha reliability of the tool is  $\alpha = 0.86$ .

## 3. Results and Discussion

Social skills are essential for children's psychosocial well-being. Social skills will support children's positive behavioural, social and academic outcomes during later childhood (McCabe and Altamura, 2011) [12]. Specifically, young children's social skills are an important precursor in their development of school readiness and peer acceptance (Denham, 2006) [6]. Therefore, ensuring preschoolers have sufficient opportunities to develop and practice their social skills may establish a foundation for their long term health and well-being (Hinkley *et al*, 2018) [9].

### 3.1 Age and language development of preschool children

To assess language development of preschool children in the present study, nine language development tests were carried out and the obtained mean scores of 3-4 years, 4-5 years and 5-6 year old children are presented in the table 2.

**Table 2:** Means, SDs and 't' values of 3-4, 4-5 and 5-6 year old children on language development tests

Language Development Tests	Age	N	Mean	SD	't' value	
Following directions	3 to 4	85	4.04	1.56	3-4 & 4-5	2.02*
	4 to 5	39	4.64	1.55	4-5 & 5-6	2.61**
	5 to 6	76	5.38	1.21	3-4 & 5-6	6.15**
Following propositions	3 to 4	85	3.45	1.24	3-4 & 4-5	2.10*
	4 to 5	39	3.99	1.38	4-5 & 5-6	2.05*
	5 to 6	76	4.53	1.22	3-4 & 5-6	5.57**
Naming and use of objects	3 to 4	85	7.20	1.42	3-4 & 4-5	1.47@
	4 to 5	39	7.56	1.21	4-5 & 5-6	1.96*
	5 to 6	76	7.95	0.22	3-4 & 5-6	4.78**
Naming and identification of objects	3 to 4	85	7.06	1.78	3-4 & 4-5	2.41*
	4 to 5	39	7.82	1.57	4-5 & 5-6	2.09*
	5 to 6	76	8.41	1.10	3-4 & 5-6	5.86**
Action agent test	3 to 4	85	7.79	2.37	3-4 & 4-5	1.09@
	4 to 5	39	8.31	2.50	4-5 & 5-6	2.72**
	5 to 6	76	9.47	1.31	3-4 & 5-6	5.67**
Comprehension test	3 to 4	85	7.25	4.57	3-4 & 4-5	2.92**
	4 to 5	39	9.92	4.80	4-5 & 5-6	3.47**
	5 to 6	76	12.93	3.52	3-4 & 5-6	8.89**
Ability to give name, age, sex and address	3 to 4	85	3.05	0.94	3-4 & 4-5	4.28**
	4 to 5	39	3.92	1.11	4-5 & 5-6	3.08**
	5 to 6	76	4.53	0.72	3-4 & 5-6	11.29**
Ability to distinguish AM, PM, Right and Left	3 to 4	85	3.33	1.37	3-4 & 4-5	1.18@
	4 to 5	39	3.64	1.37	4-5 & 5-6	3.20**
	5 to 6	76	4.42	0.94	3-4 & 5-6	5.93**
Indication of parts of the body	3 to 4	85	5.53	1.97	3-4 & 4-5	1.02@
	4 to 5	39	5.90	1.82	4-5 & 5-6	1.77@
	5 to 6	76	6.50	1.55	3-4 & 5-6	3.49**

\* Significant at 0.05 level \*\* Significant at 0.01 level @ Not Significant

From the above table it observed is that when the age increases, children scores on language tests have increased significantly. Out of 9 languages tests, 5-6 years age group children scored higher in all tests than 3-4 year old children. Among 9 language tests, 5-6 years age group children scored higher than 4-5 year old children on 8 language tests except indication of parts of the body test.

The findings also indicate that out of 9 language tests, 4-5

year age group children scored higher on 5 tests – following directions, following propositions, naming and identification of objects, comprehension test and ability to give name, age, sex and address test as compared to 3-4 year old children.

Hence it can be concluded from the above results that elder age group i.e. 5-6 years children have higher language skills than younger age groups i.e. 4-5 and 3-4 years. Likewise 4-5 year old children have shown better language skills than 3-4

year old children. Umek and Peklaj (2017) <sup>[13]</sup> findings from their meta-analysis indicated small gender differences in language ability which, however increased with children's increasing age.

### 3.2 Gender and language development of preschool children

Subsequently gender is another factor to study the influence

on language development. The findings of several studies on gender differences in language development suggest that girls develop language faster than boys. Erikson *et al* (2012) reported that girls are found to speak earlier, acquire the grammar of the language faster, use longer utterances and express a larger vocabulary throughout infancy, toddlerhood and early childhood. Table 3 shows mean scores of boys and girls on language development tests.

**Table 3:** Means, SDs and 't' values of boys and girls on language development tests

S. No	Language Tests	Boys (N=119)		Girls (N=81)		't' Value
		Mean	SD	Mean	SD	
1	Following directions	4.55	1.57	4.84	1.51	1.33@
2	Following propositions	3.83	1.35	4.22	1.33	2.02*
3	Naming and use of objects	7.52	1.18	7.60	1.03	0.53@
4	Naming and identification of objects	7.65	1.48	7.83	1.81	0.74@
5	Action agent test	8.39	2.35	8.73	1.93	1.10@
6	Comprehension test	9.41	4.88	10.81	5.01	1.96*
7	Ability to give name, age, sex and address	3.63	1.09	3.95	1.15	1.98*
8	Ability to distinguish AM, PM, Right and Left	3.67	1.37	4.05	1.22	2.04*
9	Indication of parts of the body	5.73	1.93	6.32	1.63	2.33*

\* Significant at 0.05 level

@ Not Significant

It is evident from the above table that out of 9 language tests, boys and girls differed significantly on 5 tests. Among all these five tests, girls scored higher on following propositions, comprehension test, ability to give name, age, sex and address, ability to distinguish AM, PM, Right and Left, indication of parts of the body tests than boys. Bornstein *et al.* (2004) <sup>[3]</sup> found in their study that, in the second through fifth year of age but not before or after, girls expressed higher language ability than boys of the same age. Umek and Peklaj (2017) <sup>[13]</sup> found that parents used more symbolic transformations when playing with girls than with

boys, thus providing more opportunities for the girls to engage in symbolic play, which is largely supported by the use of language and strongly related to more advanced language ability in children.

### 3.3 Usage of electronic gadgets and language development of preschool children

In order to understand the influence of electronic gadgets on preschool children during working day and holiday, means, SDs and 't' values are carried out and the results are presented in table 4 and 5.

**Table 4:** Means, SDs and 't' values on language development tests of low and high gadget usage children during working day

S. No	Language tests	Low gadget usage children (N=95)		High gadget usage children (N=40)		't' Value
		Mean	SD	Mean	SD	
1	Following directions	4.38	1.61	4.98	1.48	2.08*
2	Following propositions	3.94	1.34	3.90	1.50	0.13@
3	Naming and use of objects	7.51	1.08	7.40	1.45	0.41@
4	Naming and identification of objects	7.72	1.70	7.60	1.52	0.39@
5	Action agent test	7.40	3.26	8.55	1.81	2.09*
6	Comprehension test	9.67	5.00	10.25	5.35	0.58@
7	Ability to give name, age, sex and address	3.80	1.08	3.73	1.20	0.34@
8	Ability to distinguish AM, PM, Right and Left	3.92	1.23	3.55	1.66	1.25@
9	Indication of parts of the body	6.00	1.86	5.68	1.99	0.88@

\* Significant at 0.05 level

@ Not Significant

The findings reveals that out of 9 language tests, children with low gadgets usage and high gadget usage during working day differed significantly on two tests. Children with high gadget usage during working day scored higher in the *following directions test* and *action agent test* when compared with low gadget usage children.

Some studies revealed that children watching interactive and educational content would enhance their language

development. Anderson *et al* (2001) study found that watching educational programs designed to engage children, like Sesame Street, can have a beneficial effect for preschool-age children because they can comprehend and learn from such programs. Means, SDs and t values on language development tests of low gadget usage and high gadget usage children during holiday is presented in table 5.

**Table 5:** Means, SDs and ‘t’ values on language development tests of low and high gadget usage children during holiday

S. No	Language tests	Low gadget usage children (N=58)		High gadget usage children (N=78)		‘t’ Value
		Mean	SD	Mean	SD	
1	Following directions	4.22	1.72	4.78	1.47	1.99*
2	Following propositions	3.60	1.31	4.10	1.31	2.20*
3	Naming and use of objects	7.22	1.36	7.69	1.00	2.21*
4	Naming and identification of objects	7.50	1.97	7.81	1.25	1.05@
5	Action agent test	8.07	2.51	8.88	2.10	1.99*
6	Comprehension test	8.72	5.63	10.58	4.94	2.00*
7	Ability to give name, age, sex and address	3.52	1.13	3.91	1.11	2.02*
8	Ability to distinguish AM, PM, Right and Left	3.69	1.31	3.78	1.45	0.39@
9	Indication of parts of the body	5.48	2.01	6.19	1.75	2.14*

\* Significant at 0.05 level

@ Not Significant

It is evident from the above table that out of 9 language tests, the two groups differed significantly on 7 tests. Among these seven tests, children with high gadget usage scored higher on language tests than children with low gadget usage during holiday. These 7 tests include following directions, following propositions, name and use of objects, action agent test, comprehension test, ability to give name, age, sex and address and indication of parts of the body.

Thus from the above data it is apparent that gadget usage is helpful for children’s language development. In a study, Gibbons (2009) [8] mentioned that ‘children with many reading experiences from various media and from environments where the parents were involved in their reading activities, have a higher phonological consciousness, broader knowledge of letters, and a more extensive vocabulary compared to children who do not get this support’. So the role of parents is a key factor for the language acquisition of children.

Honig (2007) [10] stated that caregivers and teachers are crucial supporters for oral language flowering. Since the social context is so critical for rich oral language acquisition, parents and teachers need to become aware of their own understandings about how language is organized and what the different aspects of language are. These meta-linguistic skills permit talk about all rules, aspects and stages of language development.

Barr *et al* (2008) [2] found that parents who scaffolded their infants’ television viewing experience by asking questions and commenting, had children who were more likely to pay attention and interact with the program. Over time, it was speculated that children would internalize these interactions and engender a cognitively active viewing approach to television which lead to better narrative comprehension.

#### 4. Conclusion

It can be concluded from the present section that when the age increases, language development of 3 to 6 year old children has been increased significantly. Preschool girls scored higher on all language tests as compared to boys. The results found that children with high gadget usage scored higher on language development tests than children with low gadget usage. Thus it can be assumed that gadget usage create positive impact on language development of children. When children watch different educational programs, videos, rhymes etc they will pick up new vocabulary and improve their language skills.

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