Impact of Pedagogy Intervention for Reading and Writing Abilities on Pre School Students

Dr Veena Bhalerao[1] Prof Vishala Patnam[2]

Abstract: *The pedagogy intervention for reading and writing abilities brought about significant positive changes to the level of good and very good grades of preschool students in their Marathi alphabet & numbers and English alphabet & Arabic numbers as compared to their counterparts in the control group. Irrespective of their groups, the Marathi alphabet & numbers and English alphabet & Arabic numbers reading and writing abilities of the preschool students were significantly positively correlated with their intelligence quotient, child friendly environment in the classroom, maternal education, family size & income and family support extended to the child. The executed pedagogy intervention for reading and writing abilities of pre school students found to have significant impact in enhancing their reading and writing abilities of Marathi alphabet & numbers and English alphabet & Arabic numbers in addition to selected pictures reading and its awareness.*

I. Introduction

Children learn about reading from the time they are born, they learn about writing from infancy, as they watch adults and older siblings using writing as means of communication. The word writing and the way they sound actually helps children in beginning reading (Cynthia, 2010).However Kaul et al. (1993) found positive role of ECE in promoting cognitive and social skills and improved participation and learning achievements in primary classes and best advantage of schooling in the initial stages. Extensive research evidence shows the positive impact of early interventions and the long-term effects of early childhood education and links between the educational and care processes on children's development outcomes. Head Start revealed research reported that participation in the programme had a significant short-term positive impact on academic and social development of disadvantaged children (Mc Key et al. 1985; Lazar and Darlington 1982). Children who had attended Head Start showed larger gains on measures of social and cognitive functioning when compared with those who had no pre-school experience. Besides intellectual gains, these children remained in the mainstream education and had a positive view about themselves and their future (Barnett, 1990). ECE Perry Pre-school Project, now known as High/Scope study (Schweinhart etal1993) indicated that children who had attended High/Scope had higher educational attainment reading and writing, higher self esteem and lower anxiety than control group children. In comparison with the conventional nursery group, High/Scope children performed better on academic outcomes and quality of pre-school curriculum have a bearing on the learning.1 Assistant Professor, 2 Professor & Head (HD&FS) and Associate Dean & Principal, College of Home Science Marathwada Krishi Vidyapeeth, Parbhani 431402

Keeping in mind the importance of introducing pre reading and writing to preschoolers, a research was conducted with objective of studying impact of executing and assessing need based pedagogy intervention on the reading and writing abilities for the sample pre school students in both the control and experimental groups.

II. Methodology

The study was carried out on 87 preschool students (4-5 yrs old). Out of them 58 students were from Lab Pre Primary School MKV and 29 students from a randomly selected local preschool. The LPP school students were given planned pedagogy intervention for reading and writing abilities based on scientific, well proven methods and techniques in child education. This type of input was given as this group was considered as the experimental group. On the other hand, the local private preschool students (29) were exposed to conventional pedagogy methods and techniques, as this preschool was considered as the control group. The preschool curriculum of the control and experimental groups' was same for the period of 9 months except the adopted teaching methods and techniques. The major components of curriculum included of reading and writing Marathi alphabet (A-Dnya, 47), Marathi numbers (1-50), complete English alphabet (A-Z, 26), Arabic numbers (1-50), colourful digital pictures related to 4 topics i.e. domestic and wild animals (30), colours (10), shapes (10) and body parts (30). The sample students' reading and writing abilities were assessed by administering the preschool student assessment inventory developed by the investigators for grading their selected abilities on the four point scale i.e. very good, good, fair and poor. These grades were assigned the scores of 4, 3, 2 and 1 respectively. To study the impact of pedagogy of intervention for reading and writing abilities, the pre and post tests' grading of the students in the control and experimental groups were compared.

The recorded reading and writing abilities of the students were correlated with their selected personal and parental variables for identifying the influencing factors on these abilities of preschool students. The growth quotient (GQ) of these students was assessed by taking their anthropometric measurements as per the standard procedures. Their intelligence quotient (IQ) was assessed by administering two IQ tests i.e. Seguin form board test and modified RCPM test. The collected data was pooled and statistically analyzed.

III.   Findings

Majority of the preschool students were either first or middle born in the control and experimental groups. The sample was comprised of 41-55 per cent boys and the remaining were girls. Thirty four to 38 per cent preschool students assessed to have below average intelligence while the remaining was found to have average (32-37%) and above average intelligence (24-31 %). Thirty one to 43 per cent of the preschoolers found to have good growth quotient (GQ) while the remaining were found to have very good growth (GQ).

Table 2 illustrates the pedagogy intervention for Marathi alphabet & numbers and English alphabet & Arabic numbers reading. It was found that this intervention has brought about significant positive changes to the level of good and very good grades in a higher percentage (24-41%) of preschoolers. On the other hand in the control group, a higher percentage (13-55%) of the preschool students who were exposed to the conventional methods of teaching and techniques for reading Marathi alphabet & numbers and English alphabet & Arabic numbers, improved to the fair and good grades. However the reading ability outcome of these students through such conventional method found to be non significant even after receiving training for 9 months period, while the experimental group students' reading ability outcome found to be extraordinary as compared to their counterparts in the control group.

Similarly Sakamoto (1975) stated that Japanese parents read many picture books to their children and it resulted in highly regular phonetic writing of these children. It evidenced that letter writing ability of these children was based more on mode of spelling knowledge than a pure motoric ability and this linguistic skill influenced spelling outcomes of children.

Table 3 details the pedagogy intervention of writing Marathi alphabet & numbers and English alphabet & Arabic numbers brought about significant positive changes in 30-54 per cent preschool students to the level of good and very good grades in it. On the other hand in the control group , 10 - 62 per cent preschool students who were exposed to conventional methods of teaching and techniques for writing Marathi alphabet & numbers and English alphabet & Arabic numbers, improved it to fair and good grades. However the writing ability outcome of these students through such conventional method found to be non significant even after receiving training for 9 months period. The experimental group students' writing ability of Marathi alphabet & numbers outcome found to be extraordinary as compared to their counterparts in the control group.

The pedagogy intervention for picture reading of animals, colours, shapes, body parts and awareness brought significant positive changes in 18-63 per cent experimental group preschool students to the level of good and very good grades in it.

Laura etal (2005) studied 106 disadvantaged preschool children attending 23 classrooms serving for 30 weeks period wherein 14 classrooms used a print referencing style of story book reading while in 9 classrooms were considered as control group who were exposed to routine reading methods. The research showed larger gains on 3 standardized measures of print knowledge, alphabet and writing name when compared to control group preschoolers. The evidence based technique of teaching pupil in the classroom with use of print reference style was found to be more effective.

Table 5 shows that irrespective of their groups, the Marathi alphabet & numbers and English alphabet & Arabic numbers reading abilities of the preschool students were significantly positively correlated with their intelligence quotient, child friendly environment in the classroom, maternal education, family size & income and family support extended to the child. Irrespective of the groups of preschool students, the variables like growth quotient, intelligence quotient, child friendly classroom environment, family income, family support extended to child were significantly positively correlated to the preschool students' writing abilities of Marathi alphabet & numbers and English alphabet & Arabic numbers.

IV.   Conclusion

The executed pedagogy intervention for reading and writing abilities of pre school students found to have significant impact in enhancing their reading and writing abilities of Marathi alphabet & numbers and English alphabet & Arabic numbers in addition to selected pictures reading and its awareness.

Table 1 Background variables of pre school students

Background variables	Percentage of preschool students		Z values
	Control group (n-29)	Experimental group (n-58)	
Gender			
Male	55.17	41.37	1.24[NS]
Female	44.82	58.62	1.24[NS]
Ordinal position			
First	34.48	63.79	2.67**
Middle	44.82	3.44	4.32**
Last	20.68	32.75	1.24[NS]
Intelligence quotient & categories			
91-100 Below Average	37.93	34.48	0.27[NS]
101-110 Average	37.93	32.75	0.46[NS]
111-140 Above average	24.13	31.86	0.10[NS]
Growth quotient & categories			
> 85 Good	31.03	43.10	1.11[NS]
> 90 V. Good	68.96	56.89	1.0[NS]
Type of Family			
Nuclear	65.51	46.55	1.72[NS]
Joint	17.24	48.27	3.23**
Extended	17.24	5.17	1.59[NS]
Size of Family			
Small (Be lows)	51.72	46.55	0.44[NS]
Medium (6-8)	34.48	48.27	1.27[NS]
Large (above 8)	13.79	5.17	1.16[NS]
Monthly family income			
Below 10,000	48.27	39.65	0.79[NS]
10,000 - 35000	44.82	51.72	0.61[NS]
35,000 -50,000	6.89	8.62	0.35[NS]

Edu. level of parents	Fathers (29) (a)	Mothers (29) (b)	Fathers (57) (c)	Mothers (58) (d)	aVs c	bVs d
School educated	37.93	79.31	24.56	55.17	2.86 **	4.25**
Graduates	44.82	13.79	43.58	34.48	0.82[NS]	3.43**
Post graduates	6.89	4.72	31.57	10.34	4.72**	1.66[NS]
Occupation of parents						
Home makers	-	86.20	-	84.48	-	-
Employed	55.17	13.79	63.15	12.06	5.82 **	4.64 **
Business	44.82	-	36.84	3.44	4.67**	-

NS – Non Significant   * - significant at P < 0.05 level   **- significant at P < 0.01 level

Table 2 Comparison between   reading ability grades of preschool students of the control and experimental groups

Reading of students and its grading	Percentages of preschool students						Z values	
	Control group (n-29)			Experimental group (n-58)				
	Pre test (a)	Post test (b)	Z values aVs b	Pre test (c)	Post test (d)	Z values c Vs d	a Vs c	bVs d
Marathi alphabet								
Very good	10.34	17.24	0.78[NS]	5.17	41.03	5.09 **	3.63**	2.52*
Good	24.13	41.37	1.40[NS]	15.51	36.20	2.67**	1.18[NS]	0.45[NS]
Fair	31.03	27.58	0.33[NS]	29.31	18.13	1.40[NS]	1.30[NS]	0.93[NS]
Poor	34.48	13.79	1.94[NS]	50	4.62	6.52 **	3.27**	1.33[NS]

	Pre test (a)	Post test (b)	Z values aVs b	Pre test (c)	Post test (d)	Z values c Vs d	a Vs c	bVs d
Marathi numbers								
Very good	6.89	13.79	**0.91** NS	10.34	38.96	**3.73****	**4.12** **	**2.80****
Good	10.34	20.68	**1.00** NS	29.31	32.75	**0.35** NS	**2.65** **	**1.24** NS
Fair	31.03	44.82	**1.00** NS	27.58	21.37	**0.75** NS	**0.98** NS	**2.15***
Poor	51.72	20.68	**2.60***	32.75	6.89	**3.78****	**4.59** **	**1.74** NS
English alphabet								
Very good	6.89	10.34	**0.56** NS	12.06	40.51	**3.62****	**4.35** NS	**3.52****
Good	20.68	13.79	**0.72** NS	34.48	32.75	**0.22** NS	**1.24** NS	**2.17***
Fair	34.48	55.17	**1.64** NS	15.51	16.20	**0.14** NS	**1.79** NS	**3.74****
Poor	37.93	20.68	**1.46** NS	37.93	10.51	**3.61****	**2.75** NS	**1.18** NS
Arabic numbers								
Very good	13.79	17.24	**0.42** NS	18.96	34.13	**1.99** *	**2.38***	**1.81** NS
Good	13.79	27.58	**1.35** NS	24.13	24.13	**-**	**1.31** NS	**0.30** NS
Fair	41.37	37.93	**0.31** NS	25.86	26.20	**0.12** NS	**1.38** NS	**1.03** NS
Poor	31.03	17.24	**1.26** NS	31.03	15.51	**2.08***	**1.68** NS	**0.23** NS

NS – Non Significant   * - significant at P < 0.05 level   **- significant at P < 0.01 level

Table 3 Comparison between writing ability grades of pre school students of the control and experimental groups

Writing of students and its grading	Percentages of preschool students						Z values	
	Control group (n-29)			Experimental group (n-58)				
	Pre test (a)	Post test (b)	Z values aVs b	Pre test (c)	Post test (d)	Z values c Vs d	a Vs c	bVs d
Marathi alphabet								
Very good	13.79	27.58	**1.33** NS	10.34	30.51	**2.78****	**0.40** NS	**0.29** NS
Good	17.24	31.03	**1.26** NS	17.24	54.31	**4.51****	**-**	**2.13***
Fair	31.03	27.58	**0.33** NS	18.96	8.96	**1.61** NS	**1.30** NS	**2.11***
Poor	37.93	13.79	**2.19 ****	53.44	5.34	**6.71 ****	**1.44** NS	**1.16** NS
Marathi numbers								
Very good	6.89	20.68	**1.62** NS	15.51	47.06	**3.97****	**1.39** NS	**2.72****
Good	31.03	62.06	**2.48 ***	18.96	38.24	**2.46***	**1.30** NS	**2.17***
Fair	37.93	10.34	**2.55***	27.58	10.51	**2.41***	**0.93** NS	**-**
Poor	24.13	6.89	**1.98** NS	37.93	5.17	**4.60****	**1.28** NS	**0.19** NS
English alphabet								
Very good	17.24	44.82	**2.33 ***	8.62	47.58	**5.22****	**1.14** NS	**0.25** NS
Good	27.58	34.48	**0.58** NS	12.06	41.72	**3.74****	**1.61** NS	**0.64** NS
Fair	24.13	13.79	**1.08** NS	32.75	7.24	**3.58 ****	**0.79** NS	**0.84** NS
Poor	31.03	6.89	**2.58***	46.55	3.44	**6.21****	**1.38** NS	**0.06** NS
Arabic numbers								
Very good	6.89	37.98	**3.10****	12.06	47.75	**4.47****	**0.97** NS	**0.90** NS
Good	13.79	44.82	**2.78****	15.51	40.00	**3.14****	**0.25** NS	**0.35** NS
Fair	34.48	10.34	**2.30***	31.03	5.34	**3.87***	**0.28** NS	**0.79** NS
Poor	44.82	6.89	**3.71****	41.37	6.89	**4.88****	**0.26** NS	**-**

NS – Non Significant   * - significant at P < 0.05 level   **- significant at P < 0.01 level

Table 4 Comparison between picture reading ability and awareness grades of preschool students of the control and experimental groups

Topics dealt	Percentages of preschool students						Z values	
	Control group (n-29)			Experimental group (n-58)				
	Pre test (a)	Post test (b)	Z values aVs b	Pre test (c)	Post test (d)	Z values c Vs d	a Vs c	bVs d
Animals (55)								
Very good	6.89	10.30	0.64 NS	6.89	63.79	12.92**	-	7.76**
Good	13.70	41.32	3.17 NS	32.75	18.96	1.61 NS	2.48*	2.05**
Fair	41.30	13.71	2.16 NS	22.41	12.06	1.29*	1.69 NS	0.13 NS
Poor	37.91	34.43	0.23 NS	37.93	5.17	3.57**	-	2.69 **
Colours (20)								
Very good	6.89	17.25	1.70 NS	5.17	37.93	7.90 **	0.18 NS	2.34 *
Good	13.71	24.13	1.24 NS	25.86	29.31	0.49 NS	1.56 NS	0.51 NS
Fair	37.32	24.13	1.02 NS	43.10	24.13	2.06 *	0.54 NS	-
Poor	41.37	34.48	0.54 NS	25.86	8.62	2.11*	1.43 NS	2.41**
Shapes (22)								
Very good	17.25	20.63	0.30 NS	5.17	50.00	11.11**	1.40 NS	3.29**
Good	20.63	20.63	-	31.03	20.68	1.28 NS	1.20 NS	-
Fair	24.12	31.03	0.62 NS	34.48	12.06	2.50 NS	1.02 NS	1.80 NS
Poor	37.32	27.58	0.78 NS	29.31	17.24	1.42 NS	0.72 NS	0. 09 NS
Body parts (40)								
Very good	10.32	17.23	0.88 NS	10.34	46.55	6.46 NS	-	3.39**
Good	17.25	37.91	2.02*	20.68	25.86	0.67 NS	0.35 NS	1.09**
Fair	37.91	20.63	1.34 NS	50.00	20.68	3.23 NS	1.18 NS	-
Poor	34.42	24.10	0.80 NS	18.96	6.89	1.68 NS	1.48 NS	1.85 NS

NS – Non Significant * - significant at P < 0.05 level **- significant at P < 0.01 l
The numbers in the parenthesis of the first column indicate the number of questions asked to the students on that topic.

Table 5 Correlation between reading and writing abilities of the control and experimental group preschool students   and their selected background

Background variables of students	Reading ability		Writing ability	
	Control group students (n-29)	Experimental group students (n-58)	Control group students (n-29)	Experimental group students (n-58)
About students				
Chronological age	0.13 NS	0.15 NS	0.26 NS	0.05 NS
Growth quotient (GQ)	0.24 NS	-0.05 NS	0.11 NS	0.38**
Intelligence quotient (IQ)	0.69**	0.35**	0.90**	0.25**
Childs' social behavior	0.12 NS	0.21 NS	-0.20 NS	0.25**
Child friendly classroom environment	-0.02 NS	0.36**	0.21 NS	0.32**
About parents				
Maternal education	0.19 NS	0.25*	0.25 NS	0.20 NS
Paternal education	-0.10 NS	0.07 NS	0.14 NS	0.02 NS
Family Size	0.21 NS	-0.25*	0.15 NS	-0.12 NS
Family monthly income	0.30 NS	0.29**	0.35*	0.06 NS
Family support to the child	0.14 NS	0.26*	0.44**	0.23 NS

NS – Non significant   * - significant at P < 0.05 level   **- significant at P < 0.01 level

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