International Journal for Innovative Engineering and Management Research
PEER REVIEWED OPEN ACCESS INTERNATIONAL JOURNAL
www.ijiemr.org

Intervention on Reduction of Academic Backwardness of Rural School Students

Neeta Babruwahan Gaikwad,
Senior Scientist HDFS, AICRP-Home Science & Associate Professor, Dept. of HDFS, College of Community Science, VNMKV, Parbhani, Maharashtra, India

Reshma Shaikh,
Senior Research Fellow, AICRP-Home Science, VNMKV, Parbhani, Maharashtra, India

Rupali Patange
Senior Research Fellow, AICRP-Home Science, VNMKV, Parbhani, Maharashtra, India

ABSTRACT

A sample of purposively selected 300 rural school students from operational villages of AICRP-Home Science namely Pokharni, Daithana, Dharmapuri and Takli (Kumbhkaran) of Parbhani district were selected and categorized on the basis of their academic grade cards issued by their respective schools. Further, these enrolled students were categorized based on the cut of points decided by Education Department (MS) i.e. D grade for 34-40% marks as poor and E grade for 21-34% marks as very poor grades. Out of 300 rural academically backward school students, 150 of them were considered as control group students (Gr I) and remaining of them as experimental group students (Gr II). Seventy-five girls and 75 boys were enrolled in both the groups, who were studying in 7^{th}, 8^{th} and 9^{th} std in the schools of Pokharni, Daithana, Takli and Dharmapuri of Parbhani district. The experimental groups' (Gr- II) sample were provided with intervention on reduction of academic backwardness of rural school students for a period of 9 months such as assignments on reading, writing and arithmetic lectures, workshops, play way method of study ,parents education, books exhibition and sale ,health check ups at free of cost ,health and hygiene etc.. After implementing the intervention all the sample academically backward school students in the control and experimental groups problem of their academic backwardness, GQ, IQ were reassessed for studying the effects of provided intervention. Intervention provided to the rural academic backwardness school

students was found to be significantly useful for reducing rural school student problems associated with their academic backwardness.

Objectives

1. To find out the problems of academic backwardness of enrolled rural school students
2. To implement the intervention for reducing academic backwardness of rural school students
3. To study the effects of implemented intervention for reducing academic backwardness of rural school

Introduction

In the present competitive society, the importance of academic achievements is stressed even before the child joins the school. Scholastic achievement has become an index of child's future Tiwari G et al.,(2016). Learning is not a unitary process involving teacher and student. The developmental process of the child plays an important role in the learning process. In an appropriately developing child with normal vision, hearing, adequate psychosocial stimulation and school exposure, the primary learning skills are attained during the primary school period. Academic achievement depends on the relationship and interplay of familial, psychological, educational, social and economic atmosphere in and around the child Rutter M (1985). Primary learning skills such as reading, writing, and arithmetic are important to a child's success in academics, social and economic development and future life Snow CE et al.,(1998) . However, learning

these skills is difficult for a group of children, and they experience significant delays in one or more academic areas. Salzinger S (1993) Evaluation and judgment of students' performance is largely based on the grades achieved by them. A significant percentage of students fail to make progress with traditional classroom instructions. It is called scholastic backwardness. Scholastic backwardness is defined as having the scholastic performance below two standard deviations from what is expected for that age and grade with normal intelligence, intact sensory functions and adequate opportunity to learn Neinstein SL (2003). It is a symptom which will be manifested as repeated failure in examinations and grade , Raghavan Jayaprakash (2024)

Methodology

A sample of purposively selected 300 rural school students from operational villages of AICRP-Home Science namely Pokharni, Daithana, Dharmapuri and Takli (Kumbhkaran) of Parbhani district were selected and categorized on the basis of their academic grade cards issued by their respective schools. Further these enrolled students were categorized based on the cut of points decided by Education Department (MS) i.e. D grade for 34-40% marks as poor and E grade for 21-34% marks as very poor grades. Out of 300 rural academically backward school students, 150 of them were considered as control group students (Gr I) and remaining of them as experimental group students (Gr II). Seventy-five girls and 75 boys were enrolled in both the groups, who were studying in 7^{th}, 8^{th} and 9^{th} std in the schools of Pokharni, Daithana, Takli and Dharmapuri of Parbhani district . Prior to the implementation, both the groups school students' Socio economic status was assessed by using Revised Socio economic status scale developed by Kuppuswamy. In addition to it their academic associated problems, home associated problems and health associated problems were assessed by using checklists on 'Problems associated with academic backwardness' developed by AICRP-HD. Their growth quotient (GQ) was assessed by considering their three anthropometric measurements i.e. height, weight and head circumference as per the standard procedure. Their intelligent

quotient (IQ) was assessed by administering Standard Progressive Matrics (SPM) developed by Ravens, J.H. Courl and J. Ravens.

To reduce problems associated with academic backwardness, the experimental group (Gr II) rural school students were provided intervention by including various types of need based lectures, workshops, reading, writing and arithmetic assignments and also they were encouraged to develop more interest in studies by providing interesting play

	Percentages of respondents n-300	

way methods of learning, insisted to complete academic tasks and also their routine. Besides these, the group discussions were organized with concern teachers and Headmasters of respective schools.

To reduce their home associated problems, parent education programmes such as home visits, lectures and workshops were organized. Books related to adolescents self care and mothers role in developing children i.e. Mazi Kalji Mich Ghenar, Saksham Aai Vhyacha Mala and Kautombic Natesambandh developed by Department of Human Development & Family Studies were exhibited and were sold to the mothers of academically backward school students of experimental group (Gr II).For reduction of their health associated problems, health check-ups at free of cost were organized in

	Control group students (Gr-1) n-150	Experimental group students (Gr-II) n-150	
Types of family			
Nuclear	64.66 (97)	66 (99)	1.30 NS
Joint	35.33(53)	34 (51)	1.38 NS
Sizes of Family			
Small (1-4)	12.6 (19)	14 (21)	0.10NS
Medium (5-8)	69.3 (104)	68 (102)	0.52NS
Large (>9)	18 (27)	18 (27)	0.13NS
Education of the sample			
7th	33.3 (50)	33.3 (50)	--
8th	33.3 (50)	33.3 (50)	--
9th	33.3 (50)	33.3 (50)	--
Gender			
Female	50 (75)	50 (75)	--
Male	50 (75)	50 (75)	--
Ordinal position			
First born	30.66 (46)	32 (48)	1.27 NS
Second born	48.66 (73)	48 (72)	0.67 NS
Third born	12 (18)	12 (18)	-
Forth born	8.66 (13)	8 (12)	0.72NS
Maternal education			
Just literates	62.66 (94)	60 (90)	0.46 NS
Primary educated	26.66 (40)	28 (42)	0.21 NS
High school educated	13.33 (20)	12 (18)	0.09 NS
Paternal education			
Just literates	60 (90)	58 (87)	0.44 NS
Primary educated	28 (42)	27.33 (41)	0.21 NS
High school educated	12.66 (19)	14.66 (22)	0.11 NS
Socio-economic status			
Low	94.66 (142)	95.33 (143)	0.44 NS
Middle	05.33 (8)	04.66 (7)	0.37 NS

collaboration with Primary Health Centers of respective villages and provided supplementary tablets like calcium, ferrous sulphate, multivitamins and B complex tablets to academically backward school students of experimental group (Gr II). Various lectures on significance of health care, hygiene, self care, balanced diet were organized with the help of experts.

On the other hand, the control group academically backward school students were not provided with above cited intervention except having their routine activities at their

International Journal for Innovative Engineering and Management Research
PEER REVIEWED OPEN ACCESS INTERNATIONAL JOURNAL
www.ijiemr.org

respective schools and homes. After implementing this intervention for a period of nine months, control group (Gr I) and experimental groups' (Gr II) academically backward rural school students' problems of their academic backwardness, growth quotient (GQ), intelligent quotient (IQ) were reassessed for studying the effects of intervention provided to academically backward rural school students of experimental group (Gr II). The collected data were pooled, tabulated, statistically analyzed and discussed.

Findings

Table1 Background variables of academically backward rural school students of control and experimental groups

Table 2 indicate comparison between academic grades of academically rural school students. Irrespective of the experimental groups about 41- 42% rural school students were found to be under the category of D grade. While remaining 57-58 per cent of them were recorded to be under the category of E grade. There was no significant differences were recorded with regard to the grades and percentages of marks of academically backward rural school students.

Table 2 Comparison between academic grades of the academically backward rural school students

Academic Grades	Percentages of respondents n-300		Z values
	Control group students (Gr-I) n-150	Experimental group students (Gr-II) n-150	
D grade (34-40% marks)	41.33 (62)	42.66 (64)	0.27^{NS}
E grade (21-33% marks)	58.66 (88)	57.33 (86)	0.20^{NS}

Figures in parenthesis indicate percentages NS – Non significant

International Journal for Innovative Engineering and Management Research
PEER REVIEWED OPEN ACCESS INTERNATIONAL JOURNAL
www.ijiemr.org

The results of the study indicate from table 3 that the mean scores of the enlisted problems reported by the rural school students associated with their academic backwardness in both the experimental groups ranged between 13 $\pm$ 1.40 and 126 $\pm$ 1.28

International Journal for Innovative Engineering and Management Research
PEER REVIEWED OPEN ACCESS INTERNATIONAL JOURNAL
www.ijiemr.org

Table 3 Comparisons of the problems reported by the rural school students associated with their academic backwardness before and after implementation of intervention **n-300**

International Journal for Innovative Engineering and Management Research
PEER REVIEWED OPEN ACCESS INTERNATIONAL JOURNAL
www.ijiemr.org

Problems reported by the students associated with academic backwardness	Means of control group (Gr I) students (n-150)			Means of experimental group (Gr II) students (n-150)			Z values	
	Pre test Mean ± SD (a)	Post test Mean ± SD (b)	Z values	Pre test Mean ± SD (c)	Post test Mean ± SD (d)	Z values	a Vs c	b Vs d
In availability of remedial classes	126 ± 1.28	126 ± 1.28	--	126 ± 1.28	110 ± 1.31	1.17 NS	--	09.30**
Inability to complete academic tasks	117 ± 0.71	116 ± 0.71	0.61 NS	115 ± 0.72	88 ± 0.77	2.30*	1.31 NS	14.51**
Strong dislikes for few subjects	117 ± 1.15	116 ± 1.15	0.45 NS	116 ± 1.15	110± 1.16	0.46 NS	0.66 NS	04.38**
Poor attention span & comprehension	116 ± 0.45	116 ± 0.45	--	115±0.46	101 ± 0.51	1.12 NS	0.66 NS	08.69**
Irregular study habits	114 ± 0.54	112 ± 0.54	1.30 NS	112± o.55	82 ± 0.61	2.66**	1.30 NS	15.30**
Inability to grasp the teachings in classrooms	107 ± 0.88	105 ± 0.88	1.30 NS	106 ± 0.88	98± 0.89	0.68 NS	0.66 NS	05.49**
Dislike toward studies	103 ± 0.82	102 ± 0.82	0.54 NS	102± 0.82	83 ± 0.84	1.78NS	0.66 NS	10.72**
Boring teaching methods	103 ± 0.95	103 ± 0.95	--	102 ± 8.41	97 ± 0.96	0.43 NS	0.66 NS	03.76**
Feel study as burden	102 ± 0.69	102 ± 0.69	--	102 ± 0.69	85 ± 0.72	1.58 NS	--	09.43**
Slow writing speed	95 ± 0.45	95 ± 0.45	--	95± 0.49	60 ± 0.50	3.85**	--	14.66**
Feel some subjects are tough	102 ± 1.25	102 ± 1.25	--	101 ± 1.25	97 ± 1.26	0.35 NS	0.66 NS	03.16**
Inability to write answers in the exams	101 ± 0.46	101 ± 0.46	--	102 ± 0.46	95 ± 0.48	0.61 NS	0.67 NS	03.76**
Poor relationships with classmates	80 ± 0.57	79 ± 0.57	0.90 NS	81 ± 0.57	56 ± 0.56	3.16**	0.67 NS	11.09**
Improper voice of teachers	74 ± 1.13	74 ± 1.13	--	74 ± 1.13	50 ± 1.13	3.3	--	10.00**
Biased teachers	49 ± 1.05	49 ± 1.05	--	48 ± 1.05	48± 1.05	NS	0.65 NS	00.65 NS
Noisy surrounding in schools	25 ± 1.49	25 ± 1.49	--	25 ± 1.49	25 ± 1.49	--	--	--
Inability to read text on writing boards	13 ± 1.40	13 ± 1.40	--	19 ± 1.39	11 ± 1.49	4.69**	1.11 NS	05.96**

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

International Journal for Innovative Engineering and Management Research
PEER REVIEWED OPEN ACCESS INTERNATIONAL JOURNAL
www.ijiemr.org

Home associated problems	Control Group (n-150)			Experimental Group (n-150)			Z values	
	Pre test Mean ± SD (a)	Post test Mean ± SD (b)	Z values	Pre test Mean ± SD (c)	Post test Mean ± SD (d)	Z values	a Vs c	b Vs d

Table 4 Comparisons of home associated problems reported by the rural school students for having backwardness before and after implementation of intervention n- 300

International Journal for Innovative Engineering and Management Research
PEER REVIEWED OPEN ACCESS INTERNATIONAL JOURNAL
www.ijiemr.org

No support from family in studies	135 ± 0.72	135 ± 0.72	--	135± 0.72	95 ± 0.83	37.98**	--	37.98**
Uneducated parents	125 ± 0.83	125 ± 0.83	--	125± 0.83	125± 0.83	--	--	--
Heavy responsibilities of domestic chores	116 ± 0.49	114 ± 0.50	1.31 NS	115± 0.49	97 ± 0.55	14.24**	0.66 NS	13.33**
Improper facilities for studies at home	111 ± 0.55	111 ± 0.55	--	110± 0.56	95 ± 0.59	11.59**	0.66 NS	12.47**
No value and motivation for education in family	108 ± 0.62	108 ± 0.62	--	108± 0.62	80 ± 0.66	25.26**	--	25.26**
Non conducive home environment	105 ± 0.45	105 ± 0.45	--	104± 0.46	70 ± 0.50	33.79**	0.66 NS	35.12**
Responsibilities for caring younger siblings	104 ± 0.68	104 ± 0.68	--	104± 0.68	100 ± 0.69	2.77**	--	2.77**
Involvement in work with family members for earning	94 ± 0.49	94 ± 0.49	--	94± 0.49	80 ± 0.51	10.79**	--	10.98**
Interruptions in studies due to parental occupation	90 ± 0.52	90 ± 0.52	--	90± 0.52	85 ± 0.53	3.53**	--	3.53**
Conflicts in family	85 ± 0.98	85 ± 0.98	--	85± 0.98	80± 0.98	3.54**	--	3.54**
Disinterest of parents in child studies	76 ± 0.79	76 ± 0.79	--	75± 0.79	30 ± 0.75	76.17**	0.65 NS	78.91**
Ill health of family members	50 ± 1.06	50 ± 1.06	--	48± 1.05	48± 1.05	1.38 NS	--	1.38 NS

**- Significant at 0.01 level NS – Non significant

Table 5 Comparisons of health associated problems reported by the rural school students for having backwardness before and

International Journal for Innovative Engineering and Management Research
PEER REVIEWED OPEN ACCESS INTERNATIONAL JOURNAL
www.ijiemr.org

Health associated problems	Control Group (n-150)			Experimental Group (n-150)			Z values	
	Pre test Mean ± SD (a)	Post test Mean ± SD (b)	Z values	Pre test Mean ± SD (c)	Post test Mean ± SD (d)	Z values	a Vs c	b Vs d
General weakness	95 ± 0.59	95 ± 0.59	0.66 NS	95± 0.59	40± 0.58	15.26**	0.65 NS	85.54**
Abdominal pain	67 ± 0.57	67 ± 0.57	--	65± 0.57	30± 0.50	10.61**	1.37 NS	55.88**
Headache	40 ± 0.49	40 ± 0.49	--	40± 0.49	15± 0.38	6.04**	--	45.96**

after implementation of intervention

n-300

International Journal for Innovative Engineering and Management Research
PEER REVIEWED OPEN ACCESS INTERNATIONAL JOURNAL
www.ijiemr.org

Cough and cold	31 ± 0.82	31 ± 0.82	--	31± 0.82	20± 0.79	4.65**	--	11.52**
Food aversion due to ill health	35 ± 0.69	35 ± 0.69	0.64 NS	35± 0.69	20± 0.65	5.61**	0.64 NS	16.12**
Creation of health problems due to long school distance	120 ± 0.70	120 ± 0.70	--	120± 0.70	95± 0.76	13.17**	--	21.08**
Fatigue	48 ± 0.48	48 ± 0.48	--	47± 0.48	21± 0.37	7.58**	0.68 NS	42.02**
Feel stress	42 ± 0.45	42 ± 0.45	--	41± 0.44	20± 0.34	6.69**	0.68 NS	31.44**

**- Significant at 0.01 level NS – Non significant

prior to initiation of the intervention. After receiving intervention for a period of 9 months, the enlisted problems reported by the experimental group (Gr II) rural school students were reduced in the range between 11 $\pm$ 1.49 and 110 $\pm$ 16. Whereas after post testing no drastic changes were recorded with regard to the enlisted problems reported by the control group students associated with their academic backwardness on the whole, highly significant differences were recorded in reducing the enlisted problems reported by the experimental group students except with respect to having biased teachers and noisy surroundings in schools.

Overall the mean scores of home associated problems reported by the rural school students associated with their academic backwardness in both the experimental groups ranged between 48 $\pm$ 1.05 and 135 $\pm$ 0.72 before the initiation of intervention. After providing intervention for a period of 9 months the mean scores of health associated problems were found to be reduced in the range between 30 $\pm$ 0.75 and 125 $\pm$ 0.83 in the experimental groups. There were no reduction in reported problems found by control group students. Highly significant differences were recorded in reducing the enlisted problems reported by the experimental group students except with regard to uneducated parents and ill health of family members.

It is clear from table 5 that, the mean scores of the health problems reported by the rural school students associated with their academic backwardness in both the experimental groups ranged between 31 $\pm$ 0.82 and 120 $\pm$ 0.70 before the initiation of intervention. After implementing intervention, the mean scores of the health problems reported by the rural school students associated with their academic backwardness were observed to be reduced in the ranged between 20 $\pm$ 0.34 and 95 $\pm$ 0.76 in the experimental groups. The finding indicate that long duration intervention helps in highly significantly reducing health associated problems of experimental group (Gr-II) academically backward school students. No reduction were found in health associated problems of control group (Gr-I) students.

International Journal for Innovative Engineering and Management Research
PEER REVIEWED OPEN ACCESS INTERNATIONAL JOURNAL
www.ijiemr.org

Table 6 reveals about comparison of control and experimental groups academically backward rural school students based on their growth quotient irrespective of the experimental groups about 75-76 per cent of the rural school students were categorized

International Journal for Innovative Engineering and Management Research
PEER REVIEWED OPEN ACCESS INTERNATIONAL JOURNAL
www.ijiemr.org

in the ranged of 80-85 growth quotient i. e. fair growth followed by the respondents in good (10-11 %), poor (10 % each) and very good (2-3 %) categories before the initiation of the intervention. However, no significant differences were recorded with regard to their growth quotient after providing intervention for a period of 9 month to the experimental group rural school students.

Table 6 Comparison of control and experimental groups academically backward rural school students based on their growth quotient

Categories & GQ ranges	Percentages of respondents (n-300)					
	Control group students (Gr-I) n-150			Experimental group students (Gr-II) n-150		
	Pre test	Post test	Z values	Pre test	Post test	Z values
Very good (90-95)	02.66 (4)	03.33 (5)	0.71 NS	03.33 (5)	05.33 (8)	0.54 NS
Good (85-90)	11.33 (17)	14.66(22)	0.75 NS	10.6 (16)	16.66 (25)	0.61 NS
Fair (80-85)	76 (114)	72.66 (109)	01.00 NS	75.33 (113)	68.66 (103)	1.09 NS
Poor (below 80)	10 (15)	09.33 (14)	01.07 NS	10.6 (16)	09.33 (14)	1.14 NS

Figures in parenthesis indicate percentages NS – Non significant

Table 7 denotes about comparison of control and experimental groups academically backward rural school students based on their intelligence quotient. Irrespective of the experimental groups it was recorded that considerably a higher (84%) percentage categorized of the academic backward rural students were as below normal with regarded to their intelligence quotient while remaining 15-16 % of them were assessed to be in the normal categories of intelligence quotient before the implementation of intervention. However, no significant differences were recorded with regard to their intelligent quotient after providing intervention for a period of 9 month to the experimental group rural school students.

International Journal for Innovative Engineering and Management Research
PEER REVIEWED OPEN ACCESS INTERNATIONAL JOURNAL
www.ijiemr.org

Table 7 Comparison of control and experimental groups academically backward rural school students based on their intelligence quotient

Categories & IQ ranges	Percentages of respondents (n-300)					
	Control group students (Gr-I) n-150			Experimental group students (Gr-II) n-150		
	Pre test	Post test	Z values	Pre test	Post test	Z values
Normal (101-110)	15.33 (23)	16.66 (25)	0.60 NS	16.0 (24)	17.37 (26)	0.91 NS
Below normal (90-100)	84.66 (127)	83.33 (125)	1.01 NS	84 (126)	82.66 (124)	0.01 NS

Figures in parenthesis indicate percentages NS – Non significant

Conclusion

Intervention provided to the rural academic backwardness school students was found to be significantly useful for reducing rural school student problems associated with their academic backwardness.

References

Jain, Babita & Kumar, A. (2025). A STUDY OF THE RELATIONSHIP BETWEEN EMOTIONAL MATURITY AND ACADEMIC ACHIEVEMENT OF SECONDARY SCHOOL STUDENTS OF DEHRADUN DISTRICT. 13. 198-204.

Jayaprakash, Raghavan & Rajamohanan, K. (2017). Maanasa: An early individualized remedial educational intervention model for scholastic backwardness among upper primary students. Indian Journal of Child Health. 04. 140-144. 10.32677/IJCH.2017.v04.i02.008.