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ISSN 0019-561x
HALF-YEARLY JOURNAL OF EDUCATIONAL RESEARCH
INDIAN EDUCATIONAL REVIEW
Volume 51 Number 1 January 2013

CONTENTS

EDITORIAL

The approach paper to the twelfth Five Year Plan of India focuses on faster, sustainable and more inclusive growth. While the plan envisages education as the single most crucial tool to bring the desired transformations in the country, the education sector will have to gear up with a high momentum to reach all, retain all and prepare all to face the challenges at varied fronts. This calls for expanding the system without compromising, in fact upgrading, the quality. Education serves multiple objectives and the relative importance of each of these objectives can be very personal. The varied emphasis on the expected outcome is a result of the diverse economic, social, spiritual, cultural and political realities in an individual's life. Through education only one develops an individual identity. Thus, education has to meet individual's goals in life as well as national goals for development and social cohesion. Education is delivered by various modes and how we measure success in school is a predictive indicator of the future success in society and indeed, one could argue, discover and rediscover as to how the education system should be, how should it respond to the emerging needs and how should success be measured. We present the research initiatives of some more scholars in this issue of the journal.

The first paper assesses the modification of teaching behaviour through Micro teaching. In this paper Micro teaching comes as a remedy for the modification of teaching behaviour and in the results it is shown that teaching behaviour can be improved through Micro teaching. The paper from North East has once again raised the question of gender inequality existing in school education which needs to be addressed. The third paper examines the problems and prospects in localised learning in the contexts of rural school. The fourth paper examines Self-instructional material 'Nai Dishayan' A training module for capacity building of teachers in promoting Inclusive Education which is very useful to promote the Inclusive Education and will enhance the capacity of In-service teachers. The fifth paper is on Effect of Mastery learning strategy on achievement in English in relation to intelligence. Sixth paper reflects the study which aims to examine infrastructural and academic inputs being provided and the outcome of schooling in terms of achievement of scheduled caste students of Residential Schools of Madhya Pradesh. We have also included three research notes in this issue which aim to explore some additional dimensions. The first research note is on defence mechanism styles and personality types among adolescents which give an idea about the behavioural strategies adopted by an

individual to reduce anxiety and enhance one's sense of well being and second research note is on Effect of Parental support on curiosity of school going children. Third research note is a summary of a National Achievement Survey conducted by NCERT to find out the achievement level of students in language.

This issue also contains summaries of two research projects funded by NCERT under ERIC. These are:

1. Assessing The Effectiveness of Individualised Integrated Intervention Strategies to Turn Around Slow Learners: An Experimental Study
2. Participatory Learning and Action for Environmental Education

The Indian Educational Review focuses on enriching the discipline of education by disseminating findings of educational research, providing opportunities for exchanging research experience among fellow researchers, motivating young researchers and providing inputs to all those involved in policy making and planning. Contributions of academicians, researchers, research writers and institutions are cordially invited for the next issue. We welcome your suggestions for bringing improvement in the quality of journal.

Poonam Agrawal
Academic Editor

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Indian Educational Review aims to enhance the theory and practice of research in education. It is a journal of opinion and research in the field of education. Contributions may comprise scholarly discussion of new issues, reports of research, reviews of researches in particular field, reports of developments, and debate on educational research generally or on specific issues. Contributions are also invited reporting all kinds of empirical research in education, whether sociological, psychological, economic or organisational. The journal is intended to cover a wide range, including interdisciplinary studies.

In addition, the purpose of this journal is to provide a medium for dissemination of educational research and exchange of experiences among research workers, scholars, teacher-educators, teachers and others interested in educational research and related fields and professions.

Indian Educational Review is published half-yearly, in January and July by the National Council of Educational Research and Training (NCERT), New Delhi. The journal is indexed in *Indian Psychological Abstracts and Reviews, Sociological Abstracts and Contents Pages in Education (U.K.).*

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Research Papers

Modification of Teaching Behaviour through Micro Teaching

DR. SARFARAZ AHMAD* AND DR. AFROZ SULTANA**

ABSTRACT

Teacher education programme in India requires too much of improvement. Microteaching comes as remedy to the difficulties of teacher education programme. Present study aimed to study the modification of teaching behaviour of pupil teachers through micro-teaching approach. The sample consisted of 60 pupil teachers at teachers training colleges of Gorakhpur University. The testing of hypothesis is done by comparing the scores of the two group using the "t" test. Result indicated there is remarkable change in teaching behaviours of teachers through microteaching programme.

To improve the quality and efficiency of teaching is an important objective of Teacher Education. This objective is not properly realised in our country due to so many factors. Absence of adequate feedback, short coming in the way of modifying as well as improving teacher behaviour. A number of techniques have been developed and introduced during the last decade for providing feed back and modification of teachers' behaviour. These techniques are simulated social skill training, Team-Teaching, Flander's interaction analysis, personalised system of instruction etc. These are the innovations in Teachers education. Promotion of new idea or practice in education and teaching is known as innovation. Some other techniques are T-group, educational games etc., have been tried out innovations in teachers' education. Micro Teaching is one of these techniques.

Concept of Micro-Teaching – Microteaching is a new design for teacher education which provides trainees with information about their performance immediately after completion of their lesson. It is

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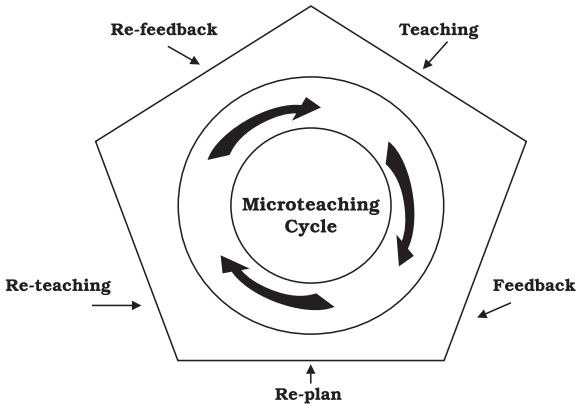
a laboratory technique of teaching in which the complexities of normal classroom teaching are simplified. It is scaled down with respect to teaching complexity also. Teaching is considered to be made up of a number of teaching skill and each teaching skill is a set of related teaching behaviours which tend to facilitate pupil's learning. Such skills can be defined, practiced, controlled, observed and evaluated. The student teacher (Micro-teacher) gives a short lesson based on a single teaching skill (Micro-lesson). This lesson is recorded, observed and followed by immediate feedback by the observer. This lesson is re-planned in the light of the feedback received and re-taught generally to a different set of pupils. This is followed by re-feedback from the same observers. This completes one microteaching cycle. It can be represented as:



Core Teaching Skills : NCERT in its publication core teaching skills (1982) has laid stress 19th teaching skills but it is not possible to train all the pupil teachers in all these skills in any training programme because of the constraint of time. Therefore a set of teaching skills which cut across the subject has been identified. They can be very useful for every teacher. The set of these skills are known as core teaching skills.

1. Introducing a Lesson
2. Questioning
3. Probing Question
4. Reinforcement
5. Increasing Pupil's Participation
6. Experimentation

The Department of Teacher Education in the National Council of Educational Research and Training (NCERT) designed a project to study the effectiveness of micro-teaching in 1975 in collaboration with the center of Advanced Study in Education (CASE), Baroda. Research and training programme, for teacher educators were also

initiated in collaboration with the department of education, university of Indore in 1979. Instructional material on micro teaching developed by Passi (1976), Singh (1976, 1979) and Jangira (1978) was used for the training of teacher educators.

The term modification of teaching or teacher behaviour refers to the attempts or measures adopted for bringing desirable improvement or modification in the existing entry behaviour of a teacher for helping them to attain the desired terminal behaviour in order to exercise his professional duties as effectively as possible. It can be properly modified through the adoption of a variety of techniques including the most commonly used techniques such as micro teaching.

N.C.T.E. has given equal weight to micro teaching. Parallel to macro teaching seeing its utility and importance in the present curriculum of B.Ed. probably essential changes can be brought in the teaching behaviour of pupil teacher by following the practice of microteaching. Teaching of pupil teacher is affected with micro teaching to a large extent. The gist of its research paper is to know how much micro teaching influences the teaching behaviour of pupil teacher.

Objectives: The objectives of the study are as follows:

1. To study the modification of teaching behaviour of pupil teachers through micro-teaching approach.
2. To study the modification of teaching behaviour of pupil teacher through microteaching approach between first teaching session and fifth teaching session (on evaluation sheet) with respect to core teaching skills.

Hypothesis: The following null hypothesis are formulated:

1. There is no significant difference in teaching behaviour (on evaluation sheet) of pupil-teachers of first teaching session and fifth teaching session with respect to core teaching skills (Introducing a lesson, Questioning, Probing Question, Reinforcement, Increasing Pupils Participation and Experimentation)

Research Design

Single group pre-test and post test type design selected for the study. The mean scores of first and final tests are compared to ascertain what difference, if any, the exposure to X (teaching through Micro-teaching Cycle) has made. An appropriate statistical technique has been used to ascertain whether the difference is statistically

significant or not. Line paradigm for designed single groups is given below:

Paradigm for the design: Single group Design

Pre-test	*Independent Variable*	*Post-test*
T_1	X	T_2
Mean of the first Observation	Treatment through Micro-teaching Cycle	Mean of the final Observation

Sample: A sample of 60 pupil-teachers have been selected randomly out of 150 students studied at Teachers-training colleges of Gorakhpur University. These 60 pupil-teachers are divided into six groups as is evident from the Table-1.

Table 1 Structure of the Sample

S.No.	*Microteaching Skill*	*Group*	*Pupil-Teacher*
1.	Introducing a lesson	First	10
2.	Questioning	Second	10
3.	Probing question	Third	10
4.	Reinforcement	Fourth	10
5.	Increasing students participation	Fifth	10
6.	Experimentation	Sixth	10
	Total	6	60

Tool

Evaluation sheets for core teaching skills

For observing the above six core teaching skills rating type evaluation proforma is used. This is developed at the **Centre of Advanced Study in Education, Baroda.** This rating type evaluation proforma is used by expert after the lesson

Procedure: The five B.Ed. trainees and one investigator for one skill have been observed through this procedure. The investigator acts as supervisor sits in the rear of the classroom. The trainee starts teaching his micro-lesson. When he has taught his lesson for six minutes, his teaching behaviour related to the various aspects of the skill was carefully examined by rating type observations performa. The investigetor gives five attempts to B.Ed. trainee for modification of teaching behaviour.

Statistical Technique: In the present study the data were given the following statistical treatment:

1. Mean of difference (M_D)
2. Standard deviation of difference ($S.D_D$)
3. Standard error of difference ($S,E\ M_D$)
4. 'T' test

Analysis and Interpretation: The skill wise study of the pupil teachers has been presented in table no. 2. Each skill has equal size of sample i.e. 10 pupil teachers in each skill. Core teaching skills have been presented for the purpose of the study.

Table 2
Skill-wise't' - values

S.N.	*Skills*	*No. of pupil teachers*	M_D	SD_D	SEM_D	*t-value*
1	Introducing a lesson	10	26	6.79	2.77	9.38**
2	Questioning	10	17.75	6.03	2.13	8.33**
3	Probing Question	10	24	6.78	3.03	7.92**
4	Reinforcement	10	12	16.22	5.41	2.21
5	Increasing pupil's	10	23	29.35	11.98	1.92
6	Experimentation participation	10	25	1.41	.705	35.46**

* Significant at 0.05 level
** Significant at 0.01 level

The first skill is introducing the lesson for which the means of difference, standard deviation of difference and standard error of mean of difference are 26, 6.79 and 2.77 respectively. After computation of the value of 't' comes out 9.38 which is significant at both the levels i.e. 0.05 level and 0.01 level after getting feedback. It means that there is a significant change in the behaviour of teachers towards this skill due to the awareness of pupil teachers towards the introducing of the lesson.

The second skill presented on the above table is questioning. It also includes 10 teachers. Here mean of difference, standard deviation of difference and standard error of mean of difference are 17.75, 6.03 and 2.13 respectively. The computed 't' value comes out 8.33 which is significant at both the level i.e. 0.05 level and 0.01 level after getting feedback. It means that there is significant change in the behaviour of teachers towards this skill due to the awareness of pupil teachers towards the question and questioning technique.

The third skill is probing questioning. For this skill the value of mean of difference, the standard deviation of difference are 24, 6.78, 3.03 and 't' value comes out 7.42. this value of 't' is significant at both the levels i.e. 0.05 level and 0.01 level after getting feedback. It means that there is a significant change in the behaviour of teachers towards this skill due to the awareness of pupil teachers towards the probing questioning technique.

The fourth skill is reinforcement. For this skill the value of mean of difference, standard deviation of difference, standard error of mean of difference for these teachers are 12, 16.22 and 5.41 and finally 't' value comes 2.21 which is not significant at any level i.e. 0.05 level and 0.01 level. It means that there is no remarkable change have taken place in the behaviour of teachers on the skill of reinforcement. The reason behind it is that the pupil teachers are trained in such a manner that they know quite well about the skill reinforcement. So the change on this skill, after feedback does not come significant.

The fifth skill is increasing pupil's participation. For this skill the value of mean of difference, the standard deviation of difference and standard error of mean of difference are 23, 29.35 and 11.98 respectively. The computed 't' value is 1.92 which is not significant at any level i.e. 0.05 level and 0.01 level. This shows that teachers are not aware towards the skill of increasing pupil's participation before starting the microteaching cycle as well as after completion of microteaching cycle.

The sixth and last skill is skill of experimentation which covers the behaviour of 10 teachers. The values of mean of difference, standard deviation of difference, standard error of mean of difference for these teachers are 25, 1.41, .705. After calculating the value of 't' it comes out 35.46 which is very high and significant at 0.05 level as well as 0.01 level. It also concludes that there is a very clear cut and notable change has taken place in the behaviour of teachers on the skill. The main reason of this major change is unawareness of use of experimentation before the practice teaching but after starting practice teaching each and every pupil teacher has used very commonly skill of experimentation. So after getting feedback from the investigator who is also a supervisor, the measurable changes have taken place on this skill.

Findings

1. There is significant difference for the skill of introducing a lesson of pupil teachers between first teach session and fifth teach session.

2. There is significant difference for the skill of questioning of pupil teachers between first teach session and fifth teach session.
3. There is significant difference for the skill of probing question of pupil teachers between first teach session and fifth teach session.
4. There is no significant difference for the skill of re-inforcement of pupil teachers between first teach session and fifth teach session.
5. There is no significant difference for the skill of increasing pupils participation of pupil teachers between first teach session and fifth teach session.
6. There is significant difference for the skill of experimentation of pupil teachers between first teach session and fifth teach session.

Conclusion

The teaching behaviour of the pupil teacher has been remarkable changed after providing the feedback which has been provided by the supervisor. It provides trainees with proper information about their perforamcne immediately after completion of this lesson. Reported by Kaur and Meenakshi (2007) who found that significant impact of teacher training programe on B.Ed. students attitude towards teaching and personality. Jain (2008) study reveal that tribal B.Ed. trainees who gone through the training programmes for creativity development have shown significantly higher fluency, flexibility and total creativity in comparison to untrained group.

Educational Implication

Teacher-education programme in India requires too much of improvement. Micro-teaching comes as a remedy to the difficulties of teacher education programme. In this method an effective feedback provided for modification of behaviour. The knowledge and practice teaching skill viz. introduction, questioning, probing, reinforcement, interaction and experimentation are developed through microteaching at analysed the performance of pupils by use of video-tape. It is economical and takes less time.

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Gender Inequality in School Education with Special Reference to North East India

Deigracia Nongkynrih*

Abstract

Education is viewed as a key factor in the development of human capital. However, in India it is marked by high levels of gender inequality. The objective of this paper is to examine the extent of gender inequality in school education (up to higher secondary) for the North East (NE) states vis-à-vis the all India level. Secondary data from various sources has been employed to examine this issue. The study concludes that gender disparity is very much in existence in NE states though it is relatively less than the all India level. Further the gender disparity is revealing declining trends in past decade in these states but at a slower pace. The smaller states of Mizoram and Meghalaya are showing better gender equality than the relatively larger states of Assam and Arunachal Pradesh in NE.

Introduction

Over the past few decades there has been an increased focus on the development of human capital as an engine for growth (Azariadis and Drazen, 1990; Barro, 1991; Mankiw et al., 1992). The interaction between human development and economic growth has been summed up by Ranis (2004) when he stated the existence of a two way relation between the two. Human development will have a positive effect on growth when human capabilities and freedom are enhanced for economic growth to take place. On the other hand, economic growth will enhance human development when increased incomes widen choices and capabilities of people at large. Human capital being a

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major component of the overall capital formation required in the process of growth and development, enhancing educational attainment would therefore assume a central and key position in such efforts. The pioneering work of Sen (1985) drew attention on the role of literacy rate and education as a measure of the standard of living of countries (Basu and Foster, 1998). The role of education is not only limited to human capital formation but encompasses a much broader spectrum. Most important of all, it is viewed as a means to bridge inequality amongst peoples and nations. However, in most developing countries including India, gender inequality in education has been one of the major eyesores eclipsing their growth and developmental efforts. One of the many indicators of gender inequality is in fact access to education and it specifically applies to:

1. The numbers and percentage of literate persons, by age and sex
2. Years of schooling completed, by level and sex
3. Gross primary and secondary school enrolment ratios for girls and boys.

The North East Region (NER) of India comprises the eight states of Arunachal Pradesh (AP), Assam (ASM), Manipur (MAN), Meghalaya (MEG), Mizoram (MIZ), Nagaland (NGL), Sikkim (SKM) and Tripura (TRI). These states collectively account for eight per cent of the total geographical area of the country and roughly four per cent of the total population of the country. The region is widely known for its ethnic, linguistic and cultural diversity. A major chunk of the population comprise of the tribals who are the main inhabitants of the region. However, in a few states like Assam and Tripura, tribals constitute a minority of the population. Being largely tribal societies, and in some states like Meghalaya the practice of the matrilineal system has facilitated an almost equal treatment given to both boys and girls. The region is considered to be one of the most economically backward in the country. Another feature related to the origin of education in this region is that it is largely a contribution made by the Christian missionaries for over more than a century. Over the course of time, this has evolved to a greater participation of both the public and private players. Further, special incentives and packages (such as the provision for setting up of central universities to cater to higher education) have been announced by the Government from time to time to improve the lot of the people residing in this remote part of the country.

From this, therefore, it would naturally be anticipated that education in the NE region would a typically be much favoured with

respect to girls as opposed to the all India situation and that their levels of educational attainment would be much higher than the rest of India. Further, it would also be anticipated that the gender gap in education would be non-existent due to the unbiased treatment of girls in the indigenous tribal societies. In light of this, this paper is an attempt to present a profile of girl's education in the region and further examine the extent of women's education in NER by reviewing its progress over the past decades. The remaining paper is organised as follows: Section 2 deals with the source and treatment of data. The empirical analysis and interpretation of various features are discussed in section 3. The last section is devoted to summary of conclusions and their relevant policy implications.

Data Sources

The data that has been used for this study is obtained from secondary sources namely; the Census data collected by the Government of India (GoI) for 1981, 1991 and 2001, Selected Educational Statistics, Ministry of Human Resources Development, GoI and the National Sample Survey Organisation (NSSO) unit data surveyed during the 50th (1993-94), 61st rounds (2004-05), respectively and NSSO report for the 64th round (2007-08). NSSO data has information on several easily quantifiable welfare indicators which is not available in the Census data. An important characteristic of NSSO data is that it is collected at the unit household level. The present study uses this unit record level statistics which enhances the reliability of its empirical results. It may be mentioned here that the main limitation of the study is the variations in data sources which may make the observations not strictly comparable.

Profile of Girl's Education in North East India

In this section we present a profile of the trends and thereof of girl's education in NE India. In order to examine the trends in girl's education we will examine the literacy rates by gender; years of schooling completed by level and gender and gross school enrolment ratios for girls and boys at the primary, middle and secondary and higher secondary levels.

Literacy Rate

Literacy rate has been measured as the proportion of population aged seven years and over that can read and write (and understand)

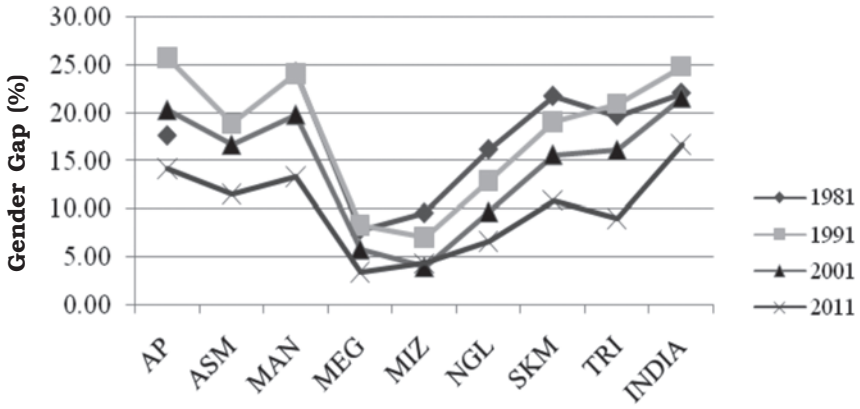
a simple message (GoI, 2001). It may be worthwhile to look at the representation of women vis-à-vis men in terms of their literacy rates as given in table I.

Table I
Literacy Rates in North East States by Gender (in %)

States	*AP*	*ASM*	*MAN*	*MEG*	*MIZ*	*NGL*	*SKM*	*TRI*	***India***
1981									
Males	28.9	NA	53.3	37.9	64.5	50.1	43.9	51.7	**46.9**
Females	11.3	NA	29.1	30.1	54.9	33.9	22.2	32.0	**24.8**
Persons	20.8	NA	41.4	34.1	59.9	42.6	34.1	42.1	**36.2**
1991									
Males	55.5	61.9	71.6	53.1	85.6	67.6	65.7	70.6	**64.1**
Females	29.7	43.0	47.6	44.9	78.6	54.8	46.7	49.7	**39.3**
Persons	41.6	52.9	59.89	49.1	82.3	61.7	56.9	60.4	**52.2**
2001									
Males	63.8	71.3	80.3	65.4	90.7	71.2	76.0	81.0	**75.3**
Females	43.5	54.6	60.5	59.6	86.8	61.5	60.4	64.9	**53.7**
Persons	54.3	63.3	70.5	62.6	88.8	66.6	68.8	73.2	**64.8**
2011*									
Males	73.7	78.8	86.5	77.2	93.7	83.3	87.3	92.2	**82.1**
Females	59.6	67.3	73.2	73.8	89.4	76.7	76.4	83.2	**65.5**
Persons	66.9	73.2	79.9	75.7	91.6	80.1	82.2	87.8	**74.0**

Source: Census of India, (Various Years); (* 2011 Provisional Report)

From table I it can be seen that there has been a substantial improvement in the educational attainment of the Indian population over the last several decades. Overall the literacy rate has increased substantially from 36.2 per cent in 1981 to 74 per cent in 2011. Female literacy rate is higher in all the NE states except Arunachal Pradesh than all India average in the year 2011. Female literacy registered an increase from around 25 per cent in 1981 and currently stands at 65.5 per cent in 2011 at the all India level. On the other hand, the literacy rates of males which were 47 per cent in 1981 increased to around 82 per cent in 2011. Despite the higher growth of female literacy rate (40.5 per cent) during the period 1981 to 2011 compared to male literacy rate (35 per cent); yet the gender gap in education has not narrowed down appreciably over the past decades as it still remains at around 17 per cent in 2011(Figure I). This goes to show that in the face of the improvements in literacy rates, the educational gap between males and females still continues to exist.



States* (AP-Arunachal Pradesh, ASM-Assam, MAN-Manipur, MEG-Meghalaya, MIZ-Mizoram, NGL-Nagaland, SKM-Sikkim, TRI-Tripura)

Figure I: Gender Gap in Literacy Rates

Source: Complied from Census Reports (Various Years)

As at the all India level, for the NER too literacy rates of males are observed to be at much higher levels than that of females. However, the gender gap is narrower for the NER compared to the all India situation (Figure I). This is largely due to higher female literacy rates in the NE states compared to the all-India average. In 2011, gender gap in literacy was the highest for Arunachal Pradesh at 14 per cent and the lowest for Meghalaya at around three per cent, Mizoram at four percent and Nagaland at six per cent, respectively. For the remaining states the gender gap in literacy was around 10 to 13 per cent. The question that ensues is whether the figures indicate that gender discrimination in education is much lower in the NER compared to the rest of India?

Examining literacy rates by area in the different NE states reveals the existence of not just the gender gap but also the urban-rural differences. Despite the steady improvement in female literacy in the NE states over the decades, the urban-rural gap is still an extension of the all India scenario. The figures indicate higher literacy rates for the urban residents compared to the rural residents. For instance in 2001, urban literacy rates stood at 80.3 per cent compared to 59.4 per cent for the rural areas. Across states, rural literacy rates are almost half the urban literacy rates. The only upside to this is that the urban-rural gap appears to be converging with each and every decade. To better shed light on this we have presented female literacy rates by area for the different NE states in table II.

Table II
Female Literacy Rates by Area (in %)

	1981			*1991*			*2001*		
States	*Rural*	*Urban*	*U-R*	*Rural*	*Urban*	*U-R*	*Rural*	*Urban*	*U-R*
AP	9.6	41.2	31.6	25.3	62.2	36.9	36.9	69.5	32.6
ASM	NA	NA	NA	39.2	73.3	34.1	50.7	80.2	29.5
MAN	25.1	40.2	15.1	43.3	58.7	15.4	57.0	70.0	13.1
MEG	24.0	58.8	34.9	37.1	77.3	40.2	53.2	83.5	30.3
MIZ	49.9	70.5	20.6	67.0	91.6	24.6	77.3	95.8	18.5
NAG	30.3	56.9	26.7	50.4	79.1	28.7	57.5	81.4	23.9
SKM	18.2	45.4	27.2	43.9	74.9	31.0	58.0	79.2	21.2
TRI	27.6	67.1	39.5	44.3	76.9	32.6	60.5	85.0	24.5
India	**18.0**	**47.8**	**29.9**	**30.6**	**64.1**	**33.4**	**46.1**	**72.9**	**26.7**

Source: Census of India, (Various Years). U-R = Urban Rural gap

As can be observed from table II, while rural literacy rates continue to be lower than urban literacy rates, women in rural NE states have a comparatively higher literacy rate than the all India average. The same is also observed for women in the urban areas. This indicates a steady improvement in women's education. Across states minor variations are observed. For instance, while all the other NE states are showing a fairly consistent improvement in the urban-rural gap, the only exception is observed for Arunachal Pradesh, and Assam. In these states, the urban-rural divide in women education stands much higher than the all India level, as of 2001. Even though Arunachal Pradesh has shown an improvement over the years, yet it is exhibiting the lowest literacy rates in the entire NE. This stands in sharp contrast to states like Mizoram with a relatively higher literacy rate recorded for both men and women.

An examination of the literacy rates by gender and area yields the following: First, women still have lower educational attainment then men. The gender gap in literacy is still very much in existence, even though it has narrowed down over the years. Second, the urban-rural divide has not been bridged as the urban population still has a higher educational attainment than the rural population. Third, rural women's educational attainment exhibits very slow progress and continues to remain at lower levels.

Years of Schooling Completed

The extent of literacy depends to a greater level on the attendance and non attendance in schools. To examine the proportion of children attending and not attending schools at different levels, NSSO data

for the 50th (1993-94), 61st (2004-05) and 64th (2007-08) rounds on employment and unemployment has been used. The information provided in this data set is reported in table III.

Table III
Proportion of Children Attending Schools in NE States (in %)

		1993-94			***2004-05***			***2007-08****		
States	*Area*	*Girls*	*Boys*	*Total*	*Girls*	*Boys*	*Total*	*Girls*	*Boys*	*Total*
AP	Rural	20.7	24.8	22.8	40.4	48.6	44.7	50.6	57.4	54.1
	Urban	40.5	32.2	36.2	61.7	67.8	64.9	65.0	72.2	78.7
ASM	Rural	23.2	27.3	25.4	44.4	47.7	46.1	44.1	55.6	50.2
	Urban	28.6	20.2	24.4	46.9	50.6	48.7	44.3	46.9	45.6
MAN	Rural	33.7	35.3	34.5	54.7	62.9	58.9	52.1	59.6	56.1
	Urban	43.8	38.5	41.2	63.8	71.8	67.9	63.4	66.3	65.2
MEG	Rural	18.2	18.6	18.4	46.0	45.6	45.8	52.2	55.0	53.6
	Urban	32.6	26.8	29.8	52.6	63.7	57.7	58.2	51.8	55.5
MIZ	Rural	26.4	27.6	27.0	48.4	48.8	48.6	55.8	59.7	57.9
	Urban	31.9	25.3	28.7	61.5	70.2	65.9	54.5	62.0	58.4
NAG	Rural	39.5	45.1	42.4	50.1	59.7	55.0	38.5	44.8	41.8
	Urban	35.8	33.1	34.3	54.8	64.9	60.0	48.8	58.5	53.9
SKM	Rural	30.3	29.7	30.0	55.7	54.2	54.9	53.1	57.5	55.3
	Urban	38.0	23.6	30.3	44.0	51.6	48.1	35.4	41.1	38.7
TRI	Rural	27.9	32.1	30.1	48.8	50.2	49.5	44.2	48.3	46.4
	Urban	29.5	27.0	28.3	39.3	48.7	43.6	43.2	53.3	48.2
All India	**Rural**	**15.8**	**22.7**	**19.3**	**36.7**	**44.4**	**40.7**	**44.6**	**51.7**	**48.3**
	Urban	**24.3**	**22.0**	**23.2**	**43.8**	**44.9**	**44.4**	**43.4**	**45.4**	**44.6**

Source: NSSO 50th, 61st& 64th Round Employment and Unemployment Data.

An examination of the level of current attendance of children at different levels of schooling for all the NE states reveals the following: First, the proportion of children attending school in all the NE states has increased over time. Second, the urban-rural divide is still in existence. Rural boys and girls have lower attendance compared to urban boys and girls. The only exception here is for the state of Sikkim, where the proportion of rural children is relatively higher than that of the urban children. This could be attributable to a higher proportion of children in the rural areas. Third, the gender gap in education is very much in existence. The gender-gap increases as one progress to higher levels of schooling (see appendix tables III: A, B and C at page 29). While at lower levels of schooling (primary and middle levels)

girls are observed to be almost at par with boys in terms of attendance, the situation is the opposite for high and higher secondary levels. Attendance of girls at different levels of schooling diminishes at each and every successive stage. For all NE states uniformly, boys are observed to be having a higher percentage of attendance compared to girls. This difference is also observed at the all India level.

It has been noted by researchers that the proportion of children attending school declines as one progress to higher levels of education (Velkoff, 1999; World Bank, 2003). Accordingly, it can also be inferred that the proportion of girls not attending schools would naturally be high. This can be verified by an examination of the proportion of children not attending schools.

Table IV reports the proportion of children not attending schools for all stages, that is primary, middle and secondary and higher secondary stages, for all the NE states.

Table IV
Proportion of Children Not Attending School in NE States (in %)

		1993-94			*2004-05*			*2007-08*		
States	*Sector*	*Girls*	*Boys*	*Total*	*Girls*	*Boys*	*Total*	*Girls*	*Boys*	*Total*
AP	Rural	78.9	74.9	76.8	59.3	51.1	55.1	44.4	38.3	40.9
	Urban	58.7	59.9	59.3	37.5	30.9	33.9	27.7	18.7	23.3
ASM	Rural	76.1	71.6	73.7	55.1	51.5	53.2	52.8	41.4	46.7
	Urban	68.6	68.0	68.3	49.7	46.4	48.1	49.8	43.9	46.8
MAN	Rural	64.7	62.0	63.4	44.6	36.3	40.3	42.4	34.4	38.1
	Urban	54.8	53.4	54.1	33.8	25.4	29.5	29.9	28.1	28.9
MEG	Rural	81.5	80.7	81.1	53.6	54.2	53.9	38.1	33.5	35.8
	Urban	65.3	64.5	64.9	45.8	34.7	40.6	25.7	28.5	27.0
MIZ	Rural	72.7	71.6	72.2	51.4	50.8	51.1	41.1	39.7	40.4
	Urban	65.4	64.3	64.8	36.6	28.2	32.4	38.4	29.1	33.7
NGL	Rural	59.8	54.0	56.8	48.6	38.6	43.5	54.3	48.5	51.5
	Urban	62.4	56.2	58.8	41.7	32.1	36.7	41.6	35.0	38.2
SKM	Rural	69.3	69.7	69.5	43.9	45.5	44.7	41.4	36.2	38.7
	Urban	61.6	69.1	65.8	52.9	45.4	48.8	57.8	48.6	52.4
TRI	Rural	71.6	66.9	69.2	50.8	49.3	50.1	53.4	44.5	51.5
	Urban	68.6	66.4	67.5	58.5	48.8	54.0	45.3	38.4	42.1
All India	**Rural**	**83.9**	**76.4**	**80.0**	**62.5**	**54.5**	**58.4**	**52.6**	**44.3**	**48.3**
	Urban	**73.6**	**70.3**	**71.9**	**53.2**	**51.4**	**52.2**	**47.8**	**45.6**	**46.7**

Source: As in Table III

It can be gauged from table IV that India and the NER in particular have a very high rate of children not attending schools. For the NE states the figures in the rural areas average around 43 per cent of boys and girls that do not attend educational institutions in 2007-08, and around 37 percent in the urban areas, while it is around 47 to 48 per cent, respectively for all India. This difference reflects the distortion of the educational system existing in the rural and urban areas. Further, gender difference of non-attendance in educational institutions is also very much visible. As can be seen from the table, be it for individual states in the NE region or the country as a whole, girls constitute a higher proportion of children not attending schools. Even though the figures have declined from the years 1993-94 to 2007-08, it still becomes obvious that girls are generally given a secondary status when it comes to education.

Gross School Enrolment Ratios

To further explore the issue of such disparities we will examine the gross school enrolment at different educational stages. Gross enrolment ratio (GER) is defined as the percentage of enrolment in classes I-V, VI-VIII and IX -XII to the estimated population in the age group 6 to below 11 years and 11 to below 14 years and 14 to 18 years respectively. Enrolment in these stages includes under-age and over-age children. Hence, the percentage may be more than 100 per cent in some cases. The GER at the primary, middle, and higher secondary levels by gender across the NE states has been reported in table V.

Table V
Gender-wise Gross Enrolment Ratio by Stages/Classes (in %)

Stages	*Year*	*Sex*	*AP*	*ASM*	*MAN*	*MEG*	*MIZ*	*NGL*	*SKM*	*TRI*	*India*
Primary I-V	**1980-81**	Boys	94.5	78.8	125.7	64.5	82.6	103.7	122.6	121.4	**95.8**
		Girls	50.7	62.6	103.2	67.2	74.2	83.4	85.9	93.6	**64.1**
	1990-91	Boys	121.4	109.7	118.7	67.4	153.4	113.2	130.0	144.0	**114.0**
		Girls	58.1	89.7	105.1	60.8	146.1	99.1	115.2	122.7	**85.5**
	2004-05	Boys	130.0	105.6	154.4	145.3	132.3	88.7	144.5	133.7	**110.7**
		Girls	115.9	104.8	148.9	150.0	122.7	87.2	142.7	128.3	**104.7**
	2007-08	Boys	149.1	106.0	176.0	193.5	176.1	92.5	149.3	149.4	**115.3**
		Girls	136.6	106.2	170.3	189.5	165.7	92.5	146.7	146.2	**112.6**
	1980-81	Boys	29.0	48.8	60.8	31.6	52.2	45.4	43.7	48.2	**54.3**
		Girls	13.4	31.0	41.0	28.3	45.0	34.2	25.1	34.5	**28.6**

Middle VI-VIII	**1990-91**	Boys	54.7	60.3	69.8	38.8	78.3	67.3	46.8	80.2	**76.6**
		Girls	33.3	43.9	61.3	38.0	79.4	63.0	45.1	64.7	**47.0**
	2004-05	Boys	81.8	72.1	97.7	72.1	82.2	55.7	61.5	80.7	**74.3**
		Girls	69.2	67.2	91.5	81.0	81.3	55.5	72.2	75.6	**65.1**
	2007-08	Boys	100.9	92.0	107.6	99.7	86.3	58.9	67.6	88.0	**81.5**
		Girls	87.7	90.5	100.9	107.0	85.0	61.3	81.9	87.6	**74.4**
Higher Secondary IX-XII	**1980-81**	Boys	13.2	27.0	40.9	18.7	28.0	19.7	10.9	27.4	**34.2**
		Girls	4.8	14.7	24.0	16.5	21.9	11.0	6.0	18.2	**15.4**
	1990-91	Boys	29.5	26.9	40.1	13.7	24.7	21.2	23.3	35.7	**33.9**
		Girls	14.6	18.1	28.7	12.5	24.4	18.9	18.6	24.6	**10.3**
	2004-05	Boys	0.6	35.9	50.5	32.6	44.2	21.5	33.1	41.3	**44.3**
		Girls	0.5	28.3	46.8	33.9	45.1	21.1	33.5	36.3	**35.1**
	2007-08	Boys	65.4	46.3	77.0	49.1	67.1	27.2	44.4	59.9	**62.6**
		Girls	60.6	41.9	77.4	53.7	70.3	30.1	45.1	59.8	**53.2**

Source: Selected Educational Statistics (Various Issues)

It can be inferred from table V that, while, enrolments at the primary stages continue to remain at higher levels for both boys and girls, the same is not evident for middle and higher secondary stages. The ratio of school enrolment appears to be waning as one proceeds to higher levels of education. A major educational problem facing both boys and girls is that although they may be enrolled at the beginning of the year, they don't always remain in school. An important point to note is that girls' enrolment although declining from one stage to another, remains much lower than those of boys. UNICEF (1999) estimated that 41 per cent of Indian girls under the age of 14 years do not attend school and are often taken out of school to help with the family responsibilities. This in fact is one of the most distressing aspects of the educational system in contemporary India. NSSO (2007-08) reported that the primary factor responsible for non-enrolment of children is that parents are not interested in the education of their children. Besides, financial constraints and the belief that education is not necessary are the other major factors.

Examining the gross enrolment for the different NE states we also see the existence of gender disparities in enrolment. For stages I to V we witness a lower girls to boys enrolment which gradually improved over the years. On an average, girls enrolment at stages I to V, in 1980-81 was only 77.6 per cent while boys was 99.2 per cent respectively which increased to 144.2 and 149 per cent respectively in 2007-08. For middle and higher secondary levels we observe a

gradual deceleration of enrolment for both boys and girls. In 2007-08, enrolment for both sexes in VI to VII stages was around 88 per cent and 55 per cent for IX to XII stages. This shows a declining enrolment as one proceeds to higher educational levels. Inter-state difference in enrolment is also evident. For instance, Nagaland and Assam continue to have the lowest enrolments for all levels of education compared to the other NE states. Sikkim has also not fared well for secondary and higher secondary levels as the enrolments are still less than the rest of the NE and the all India level. On the other hand, Arunachal Pradesh has shown slight improvement in enrolments at higher educational stages. Meghalaya and Mizoram have exhibited an almost proportional enrolment among boys and girls over the years.

The declining enrolment rate of girls at different stages of schooling can be weighed against the total enrolment of students at each corresponding stage. This is shown in table VI where we present the percentage of girls' enrolment to total enrolment in different stages/classes of education for the different NE states for 2004-05 and 2007-08.

Table VI
Percentage of Girls Enrolment in Different Stages/Classes

States	*2004-05*			*2007-08*		
	Primary (I-V)	*Middle (VI-VIII)*	*Secondary (IX-XII)*	*Primary (I-V)*	*Middle (VI-VIII)*	*Secondary (IX-XII)*
AP	45.8	45.2	41.3	46.7	45.9	44.9
ASM	48.9	47.0	42.5	49.2	48.5	45.2
MAN	48.2	47.3	47.9	48.3	47.4	47.9
MEG	50.3	52.1	50.3	49.0	51.2	51.5
MIZ	47.6	48.9	49.9	48.5	48.8	49.6
NGL	47.8	48.0	47.4	48.2	48.9	48.2
SKM	49.7	52.8	50.3	49.2	53.7	50.9
TRI	47.8	47.1	45.5	48.5	48.8	46.8
India	**46.7**	**44.4**	**41.5**	**47.5**	**45.7**	**43.4**

Source : Compiled from Selected Educational Statistics (Various issues).

As suggested by table VI, the percentage of girls enrolled at different stages of education has marginally increased over time. However, with every increase in educational stages, the percentage of girls' enrolment is exhibiting a declining trend. This implies that girls' enrolment at different stages of education peaks only at the primary level and from then on starts the downward movement with

every higher level of education. On the other hand, it also implies boys' enrolment increases with every higher stages of education. The only upswing is the relatively high and increasing enrolment for girls in Meghalaya, Mizoram and Sikkim at around 49 to 50 per cent for all stages as of 2007-08. Clearly a lot still needs to be done towards achieving higher enrolment of girls at all stages of education.

This disparity in the school enrolment of girls and boys becomes noticeable when we examine the gender parity index (GPI) in education. GPI is calculated by dividing girl's GER by boy's GER of a given level of education. It measures progress towards gender equity in education. When the GPI shows a value equal to one at any level of education it shows that there is no gender disparity at that level and learning opportunities are available for girls equally to that of boys. Figure II presents the gender parity index in education.

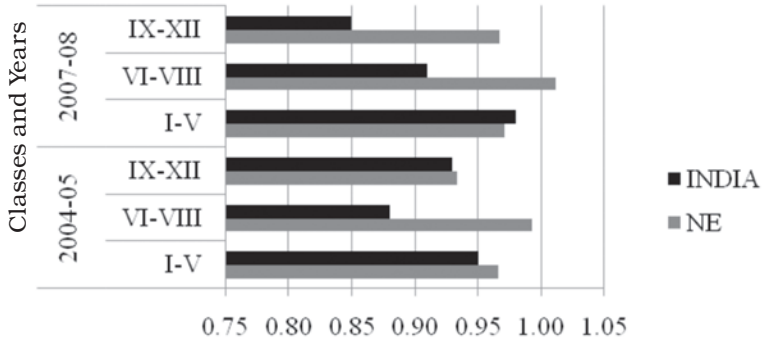


Figure II : Gender Parity Index

Source : Compiled from Selected Educational Statistics (Various Issues)

Figure II corroborates the existence of an imbalance in enrolment and educational attainment of boys and girls for all levels of education. For instance, in 2007-08 the index is less than one for all other stages of education except for stages VI to VIII only wherein it is greater than one. Comparing between the educational attainment of children in the NE states and the all India figure, the index is much higher in the former compared to the latter. Thus, it could lead to the belief that there is less gender discrimination in the NE states. However, it is important to note that even if that were the case the figures still exhibits a disparity between the educational attainment of boys and girls in the NE states in particular and India in general. The persistent problem of educational inequality

confronting these societies today could also be attributed to high drop out rates of children in these states. We present the drop-out rates for the different NE states in table VII. The drop-out rate represents the percentage of pupils who drop out from a given grade or cycle or level of education in a given school year.

Table VII
Drop-Out Rate from I-X stages of school education in NE India

States	*1990-91*			*2004-05*			*2007-08*		
	I-X			*I-X*			*I-X*		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
AP	79.1	82.2	80.2	69.6	72.3	70.8	63.7	62.2	63.0
ASM	79.8	83.4	81.4	75.2	74.7	74.9	80.1	80.2	75.7
MAN	74.2	78.4	76.1	46.0	39.6	43.0	47.9	40.8	44.6
MEG	66.0	59.7	63.1	79.6	78.7	79.2	76.8	75.5	76.1
MIZ	45.4	42.2	43.9	69.5	64.1	66.9	72.1	67.9	70.2
NGL	68.9	68.8	68.9	66.9	67.6	67.3	74.6	73.4	74.0
SKM	84.9	85.9	85.4	83.3	81.2	82.3	80.6	79.3	79.9
TRI	83.5	85.7	84.5	73.6	73.1	73.4	73.5	73.4	73.4
India	**67.5**	**76.9**	**71.3**	**60.4**	**63.9**	**61.9**	**56.6**	**57.3**	**56.7**

Source: Selected Educational Statistics (Various Issues)

Clearly, the NE states inspite of having a better performance in terms of the overall literacy levels and enrolments compared to the rest of India is, suffering from high levels of school drop outs amongst boys and girls. There has been a higher drop-out rate of both girls and boys in all the NE states, with the lowest only for Manipur. For the rest of the states their dropout rates are much higher than the national average. Similarly, gender breakup of the drop-out rates also reveals the same picture. From table VII it can be noticed that in all the three time periods (1990-91, 2004-05 and 2007-08), drop-out rates of females are much higher than males in all levels of education. This is one of the major causes of the low levels of educational attainment of females in not just the NE states but for India as a whole. The reason for high drop-outs though varied is dependent on various factors. NSSO (2007-08) reported that 21.4 per cent of drop-outs in the country are commonly due to financial constraints and 20 per cent is due to the child's lack of interest in their studies. Other factors includes the inability to cope up or failure in their studies, completion of the desired level or class of education and parents' lack of interest in their children's studies. This proves

that gender bias is very much in existence even in these states as is in the all India situation, though at lower levels in comparison to the latter.

Conclusion and Implications

To sum up, this paper has highlighted the status of female education in NE India. By examining the various aspects of education such as the literacy rates, years of schooling completed and school enrolment ratios, it can be safely stated that gender equality in school education has not been achieved in the NE states. Gender inequality is still in existence, even though it is relatively less than the all India level. Further the gender disparity is revealing declining trends in past decade in these states but at a slower pace. Despite high literacy rates, girls' education in NE India still suffers from low enrolments, especially at higher stages of schooling. This is further compounded by the high level of dropout rates among the girls. Moreover, the existence of the gender gap in education suggests that boy's education is still preferred over that of girls. Some smaller states like Mizoram and Meghalaya are showing better gender equality than the relatively larger states of Assam and Arunachal Pradesh in NER. It may be pointed here, that the former states are largely tribal and Christian dominated states as opposed to the latter, which is a mix population of tribals and non-tribals and are mostly Hindu dominated. This comparatively lower gender inequality in the former states on the one hand could reflect the role and influence of missionary education. Most importantly, on the other, the practice of matriliny and domination of tribal culture appears to be the main influencing factor of lower gender inequality.

Efforts at reducing this problem of inequality while in place as provided for by various governmental schemes, the lacunae appears to be in the implementation. If this loophole is not properly addressed the consequent impact at higher levels of education will lead to a further divergence rather than a convergence of the gender gap in education. The other issue is related to appropriate and effective planning and its implementation. In this context regional educational planning taking into consideration the regional situations is of utmost importance. This requires the immediate attention of policy makers. By registering the number of children born, the authorities can plan for their education by putting in place the requisite infrastructure for the future. This will not only aid in enrolment through the availability of schools but most importantly the retention of children

in schools. Finally, the regional differences in education as well as urban-rural disparities also need to be addressed. The concentration of better educational institutions in urban and metropolis areas is resulting in a large number of rural children to drop out of schools. A more concerted effort is therefore required to genuinely improve infrastructure in such backward areas of the country. The main challenge for us, however, remains that we bridge this gap in education by increasing equality of opportunities for girls with emphasis to be laid not just on primary but also higher education. One important factor that would work in favour of this effort at reducing gender inequality lies in the inherent structure of the NE societies themselves. The social practices prevalent in these societies – which manifest in the equal treatment of both boys and girls – should be further encouraged to achieve the desired goals in education.

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Appendix

Table III A
Proportion of Children Attending Primary School in NE States (in %)

States	Sector	1993-94			2004-05			2007-08*		
		Girls	Boys	Total	Girls	Boys	Total	Girls	Boys	Total
AP	Rural	9.4	10.8	10.1	21.2	25.1	23.2	29.3	30.4	29.9
	Urban	11.7	12.4	12.1	27.9	29.8	28.9	30.2	27.6	28.9
ASM	Rural	10.3	11.4	10.9	24.3	25.1	24.7	21.3	31.1	26.5
	Urban	9.3	8.0	8.6	17.3	22.3	19.7	20.6	22.7	21.7
MAN	Rural	10.6	9.2	9.9	22.5	24.1	23.3	28.7	32.3	30.6
	Urban	9.6	13.3	11.5	25.6	27.2	26.4	32.5	31.8	32.2
MEG	Rural	7.5	7.1	7.3	20.7	24.2	22.5	29.2	31.8	30.5
	Urban	9.3	11.1	10.2	16.4	23.2	19.5	26.2	26.2	26.2
MIZ	Rural	9.6	8.1	8.8	23.2	21.5	22.3	30.1	32.7	31.5
	Urban	11.6	10.4	11.0	17.9	23.6	20.7	24.9	23.9	24.4
NGL	Rural	12.3	12.1	12.2	20.2	22.7	21.5	18.0	23.4	20.7
	Urban	10.4	12.7	11.8	16.3	19.0	17.7	20.3	23.9	22.2
SKM	Rural	13.2	11.6	12.3	27.4	23.9	25.6	29.1	31.7	30.4
	Urban	13.4	9.8	11.4	14.4	21.6	18.4	22.4	27.8	25.6
TRI	Rural	14.2	15.8	15.0	24.3	23.2	23.8	21.9	24.7	23.4
	Urban	12.8	12.2	12.5	17.8	16.4	17.1	19.6	19.7	19.7
India	**Rural**	**7.9**	**10.1**	**9.04**	**20.4**	**22.8**	**21.6**	**25.2**	**27.8**	**26.6**
	Urban	**9.3**	**9.9**	**9.61**	**17.1**	**17.3**	**17.2**	**19.6**	**20.8**	**20.3**

Source: As in table III

Table III B
Proportion of Children Attending Middle School in NE States (in %)

States	Sector	1993-94			2004-05			2007-08		
		Girls	Boys	Total	Girls	Boys	Total	Girls	Boys	Total
AP	Rural	4.4	5.7	5.1	9.2	10.5	9.9	12.4	10.9	11.7
	Urban	12.1	8.7	10.3	15.5	13.3	14.3	17.1	19.2	18.2
ASM	Rural	5.6	7.1	6.4	10.0	10.7	10.3	14.0	13.4	13.7
	Urban	7.3	7.6	7.4	12.7	10.9	11.9	13.6	12.5	13.0
MAN	Rural	8.0	8.2	8.1	11.6	13.6	12.69	11.8	13.5	12.7
	Urban	8.4	7.6	8.0	12.5	15.2	13.9	13.0	15.9	14.6
MEG	Rural	6.0	6.7	6.4	8.2	7.2	7.7	15.7	14.4	15.1
	Urban	10.4	9.2	9.8	9.0	11.6	10.2	19.2	9.7	15.1

MIZ	Rural	7.4	8.6	8.1	12.4	11.6	12.0	16.1	18.4	17.3
	Urban	7.5	8.8	8.2	16.4	16.0	16.2	15.0	20.4	17.8
NGL	Rural	11.1	10.6	10.8	11.0	11.3	11.2	10.2	9.5	9.9
	Urban	10.3	9.6	9.9	7.8	10.1	9.0	11.2	15.3	13.4
SKM	Rural	7.5	7.7	7.6	15.5	15.1	15.3	15.5	15.4	15.5
	Urban	7.7	6.7	7.2	10.9	14.4	12.8	7.1	8.7	8.0
TRI	Rural	6.6	9.4	8.0	12.2	12.6	12.4	14.0	12.1	13.0
	Urban	8.3	8.4	8.4	8.1	13.3	10.5	8.3	14.5	11.4
India	**Rural**	**3.4**	**5.1**	**4.3**	**8.1**	**10.0**	**9.1**	**11.7**	**13.5**	**12.6**
	Urban	**5.8**	**5.9**	**5.9**	**9.8**	**9.6**	**9.7**	**12.0**	**12.0**	**12.0**

Source: As in Table III

Table III C
Proportion of Children Attending Secondary School in NE States (in %)

		1993-94			***2004-05***			***2007-08***		
States	*Sector*	*Girls*	*Boys*	*Total*	*Girls*	*Boys*	*Total*	*Girls*	*Boys*	*Total*
AP	Rural	2.5	4.7	3. 7	6.5	8.7	7.7	8.9	16.1	12.5
	Urban	10.0	9.1	9.5	12.0	15.0	13.6	17.7	25.4	31.6
ASM	Rural	5.8	7.7	6.8	8.1	9.0	8.6	8.8	11.1	10.0
	Urban	9.7	9.5	9.6	11.4	11.4	11.4	10.1	11.7	10.9
MAN	Rural	7.2	9.9	8.5	14.24	16.8	15.6	11.6	13.8	12.8
	Urban	8.7	8.6	8.7	16.7	17.7	17.2	17.9	18.6	18.4
MEG	Rural	2.6	2.7	2.7	6.97	6.9	6.9	7.3	8.8	8.0
	Urban	8.9	8.6	8.7	18.47	18.8	18.6	12.8	15.9	14.2
MIZ	Rural	5. 7	6. 9	6.3	10.1	11.9	11.0	9.6	8.6	9.1
	Urban	9.5	9.8	9.7	20.8	22.57	21.7	14.6	17.7	16.2
NGL	Rural	11.6	17.6	14.8	12.3	17.2	14.8	10.3	11.9	11.2
	Urban	9.4	11.6	10.6	18.5	22.4	20.5	17.3	19.3	18.3
SKM	Rural	3.9	3.8	3.8	9.4	11.1	10.3	8.5	10.4	9.4
	Urban	9.9	7.5	8. 6	8.9	7.5	8.1	5.9	4.6	5.1
TRI	Rural	2.7	3.3	3.0	7.4	9.4	8.5	8.3	11.5	10.0
	Urban	4.0	6.6	5.3	8.0	11.6	9.7	15.3	19.1	17.1
India	**Rural**	**1.9**	**4.1**	**3.0**	**5.5**	**8.3**	**6.9**	**7.7**	**10.4**	**9.1**
	Urban	**4.9**	**5.6**	**5.3**	**10. 7**	**11.3**	**11.0**	**11.8**	**12.6**	**12.3**

Localised Learning in Rural School Context: Problems and Prospects

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ABSTRACT

Although the approach of localised learning being advocated in school curriculum frameworks, its implementation has not been widespread. Nonetheless, localised learning tends for the most part to be dominated by issues, while the method of making learning localised remain comparatively neglected. Considering the issue of low quality of school education, particularly in rural areas, it is presumed that only the teachers with positive motivation, skill and professionalism can make the localised learning successful with the availability of proper educational resources.

This paper interprets the concept of localised learning and presents the author's own past experience as a rural school teacher as well as her identification of different issues that constrains localised learning and views on the roadmap for implementing localised learning.

Introduction

Education is recognised as significant for economic growth and poverty reduction whereas the school is assigned with the task of inculcating knowledge, skills and values among future citizens and promising for 'promoting education for all'. But, the school system and the teacher being guided by the socio-economic-political ethos of the society do not play in the same way all over the country. Considering the ASER report (Rural) (2012) it is inferred that despite high investment there is low participation and under-achievement of students in many aspects, particularly in rural areas. The report

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found that the proportion of out of school children has increased, especially among girls in the age group of 11 to 14. Across rural India, 48.9 per cent children enrolled in Std. V could read English words or more, and 22.5 per cent could read simple English sentences. For improving the accessibility, availability and quality of school education in India, major reforms including improvement of schooling facilities through Sarva Shiksha Abhiyan, National Curriculum Framework 2005(NCF 2005), decentralisation of examinations, Right to Education Act 2009 and Rashtriya Madhyamik Shiksha Abhiyan for Universalisation of Secondary Education have been introduced. The curriculum reform (NCF 2005) advocating for a facilitating role of teachers in children's learning and approaching the curriculum as flexible and integrated, allows the teachers for relating teaching-learning to the local environment or community of the children. In this manner, the recent curriculum framework promotes a localised approach for curriculum transaction as teachers have the flexibility to utilise the immediate experience of the children gained from their home, community as the basis of learning for dealing with the prescribed content. Although this approach to the learning being advocated, its implementation has not been widespread. Observing the problems faced by rural education sector, the complexity related with the success of localised learning is lack of availability of appropriate learning resources and teachers with lack of skill, motivation and professionalism. This article interprets the concept of localised learning and presents the author's own past experience as a rural school teacher as well as her identification of different issues that constrains localised learning and views on the roadmap for implementing localised learning.

Concept of Localised Learning

The concept localised learning emerged in relation to globalisation. Localised learning contributed with an account of contemporary industrial transformation that emphasised how the current economic development of a specific region or country cannot be separated from the particular endowment of social, cultural and institutional patterns with which it is intimately related (Malmberg & Maskell, 2006).) The general assumption underlying the localised learning argument is that with the increasing speed of globalisation (i.e. growing exports of both finished and semi-finished goods, and ubiquitification of production factors), differences in regions learning abilities matter still more (Amin and Thrift, Maskell et al., Garnsey,

Amin and Wilkinson in Lorenzen 1999). Localised learning outlines how local conditions and spatial proximity between actors enable the formation of distinctive cognitive repertoires and influence the generation and selection of skills, processes and products within a field of knowledge or activity (Malmberg and Maskell, 2006).

As far as my view is concerned in educational perspective localised learning means connecting the learning to real-life situations and associating the contents of the curriculum to the local surroundings of children. The curriculum and teaching learning process need be based on the local needs and relevance for the learners.

In order to enhance a child's learning, it is imperative to relate the contents of the curriculum somehow to the child's own real life experiences, and accordingly to assimilate the whole learning experience. Learning becomes unproblematic when outside school experience that the child gains in home and community is related to school experience through the formal curriculum. In this way the learning should be localised or contextualised.

The aim of this strategy of localised learning is to inculcate better understanding of concepts, well organised application of local knowledge in formal learning, better performance in examinations, increase in achievement rate and ultimately making the learning effective. Localised learning takes place when the content of the curriculum, the approaches and the learning materials are connected directly to the immediate experience and environment of the learner. Learning can be localised when teachers tend to use the experience of the learners as a basis for learning in dealing with the prescribed content. Localised learning can place the learner in the heart of learning process and assist to maintain the links among school, home and community, enhancing the effectiveness of learning in the school in rural areas. National Curriculum Framework 2005 advocated for integrated approach to curriculum development, which is encouraging to the use of localised learning in schools, as teachers can connect learning to the local context.

The Education in Rural Context

The rural context is characterised by complexities associated with socio-economic factors. The income of rural people is very low. In rural areas, parents being less educated give low importance to schooling of their children. Children are frequently expected to assist their parents in earning for their bread, and so are irregular in attending the school. Schools in rural context fail to meet the needs

of children's learning. Sometimes children come to school undernourished. The disadvantaged children in rural areas having limited background of language and learning experiences in their home and community face difficulty in understanding the language and the concepts used by their teachers and in books. There by children lacking the appropriate experience are less interested in learning. Students are passive listeners in the classroom without getting any learning assistance at home. Hence the contextual factors in rural areas reinforce the vicious circle of poverty and illiteracy. Taylor and Mulhall (2001) citing Ader advocated for a system of education which would develop the learning potential of rural children and take care of rural needs in relation to resources and future changes.

The adverse situation resulting from deprivation of parental support in learning is further worsen when teachers being uninformed of the poor academic background and support at home initiate teaching with unknown and inexperienced, but not with known to unknown. This is due to the lack of training of teachers in rural pedagogy. Sometimes teachers from urban areas are appointed in rural schools. They have small or no familiarity with the background of their students and have less to dedication for work as they have to travel a long distance to school. Being demotivated to the profession, their pedagogical practices are likely to be poor.

Education in Rural Odisha

The National Family Health Survey-3 (2005-06) shows that in Odisha, only 65 per cent of children ages 6-17 years attend school. School attendance in Odisha is 12 percentage points higher in urban areas (75%) than in rural areas (63%). Eighty-six per cent of primary-school age children (6-10 years) attend school (96% in urban areas and 84% in rural areas). The drop in school attendance with an increase in age is somewhat larger in rural areas than in urban areas. In urban areas, school attendance is almost the same for boys and girls in the age groups 6-10 years (95-96%) and 15-17 years (36-37%), and slightly higher for girls than boys in the age group 11- 14 years (81% of girls compared with 78% of boys). By contrast, in rural areas, girls in all age groups are less expected to attend school than the boys, with the differential increasing substantially with age. In rural areas, at age 6-10 years 86 per cent of boys and 82 per cent of girls are attending school; by age 15-17 years, only 32 per cent of boys and 13 per cent of girls are attending school. However, the extent

and direction of this gender inequality in schooling varies significantly by age and urban-rural residence. The various factors as identified above in rural context may be the cause of this deplorable condition of schooling in rural areas of Odisha.

My Experience of Localised Learning

From my teachership experience in government schools, both at elementary and secondary stage in rural areas in Bhadrak district of Odisha, I felt that the usual pedagogical approach for teaching in rural government schools is chalk and talk and lecture method. But many times we (I and my teacher colleagues) used to narrate the contents to the real life experiences of students. Health and Food topics were narrated by exemplifying home circumstances. Environmental pollution, soil erosion, soil conservation and land use etc. topics were often taught by relating to children's experiences in agriculture. It was realised by us that children understand the abstract concepts well by familiar and real life examples. Learning can be localised when contextual (both home and community) experience of children applied to school learning. But I as a teacher confess that neither I nor my colleagues didn't practice this pedagogy in a regular manner. Planning of such strategies was rare.

There are many reasons behind the reluctance of teachers in practising this pedagogy of localised learning. Teachers lack the required skills to connect school learning to the daily life experiences of students, as they were trained neither during pre-service nor in-serviced professional development programmes. The curricula, syllabi and textbooks are basically theory oriented, with rare reference to practical activities. The curriculum is unrelated with the daily life experiences of the students, and it includes some content areas which cannot be related to practical real-life circumstances. There is no flexibility for schools to include some input in curriculum. The responsibility of preparing school curriculum is at the state level agencies. The teachers have no flexibility in adopting appropriate teaching strategies as they move with tremendous anxiety of covering the syllabus in accordance with the prescribed plan and the requirements of the examination system. On the other hand they undergo less pressure by teaching through lecture method using books, requiring no immense effort or imaginative and innovative planning of teaching-learning experiences. The teachers in rural areas are demotivated and less accountable as there is little prospect for appreciation or admiration of excellent and creative work by them for professional development.

A Step for Localising Early Learning through Farming

In rural schools, most of the students have thorough familiarity with farming, either from direct observation of their locality or from the self participation and contribution to the family earnings. If farming would be used as a means for localising some portion of the formal syllabus, children would get an opportunity to learn by the help of their repeated experiences. In this perspective Taylor and Mulhall (2001) advocated that agriculture and the local environment can be the basis of integrated projects incorporated in the school curriculum, with academic activities chosen for their locally relevant, experimental attributes. The 'Landcare in Schools' programme in the Philippines is an example of using agricultural experiences in a way that is innovative, learner-oriented, and strongly linked to the realities of pupils, parents and communities (Vandenbosch, 2002).

Farming practice can offer the greatest means for localising learning in all subjects, together with languages, mathematics, science, social studies etc. in rural contexts. The learning of language would be localised by motivating children to make descriptions and resemblances using their own language and their own farming experience. Locally relevant examples could be brought into the lesson along with the use of vernacular languages and terms, hence meaning would be better communicated and the text would be better understood. In this way children will be assisted in understanding the concepts and contexts of different locations interpreted in the formal curriculum. For localisation of learning in Science, farming presents many practical and problem solving activities that are based on scientific procedures. Farming also contributes for localising mathematics teaching by allowing children to conceptualise mathematical rules and formulas by associating familiar farming related experiences. Farming adds value as a way of teaching social concerns. The issue of population explosion, poverty, unemployment could be comprehended by examining the impact of increase in rate of population on farming production and explaining the involvement of rural people to farming systems. The use of farming as a means of transacting the curriculum can be helpful in this manner. It would persuade the parents for schooling of their children when they would understand that their environmental knowledge is useful for learning and appreciate that the approach facilitates the children's learning in a more useful way.

Problems of Localised Learning in Rural Context

The researcher's experience as well as review of literature shows that there are numerous problems persist in the teaching-learning settings of rural schools.

- The problems relating to the facilities available in rural school context are overcrowding and large classes, few information and communication facilities and no regular access to electricity supply, frequent non-attendance of students and teachers, lack of reading materials for the pupils, lack of teaching aids, shortage of classrooms and school furniture.
- The problems relating to curriculum are lack of re-orientation of teachers with the new curriculum introduction, lack of preparation and wide availability textbooks and teachers' handbooks with the curriculum development, heavy burden of curricular contents to be covered during stipulated time period, a gamut of content having irrelevance to rural living.
- The problems relating to rural teachers are presence both untrained, de-motivated teachers in rural schools as generally they remain unnoticed from educational authorities, lack of incentives or special facilities for teachers serving in rural and deprived areas, limited opportunities for professional development teachers in rural schools, low and irregular salaries, poor transport conditions in rural areas, overloaded work due to shortage of teachers.
- The problems relating to rural home environments are poverty, poor health and malnourishment of children, no parental awareness about the children's schooling, lack of academic support from parents etc.

Prospects of Localised Learning

However, the prospects of localised teaching and learning in rural schools include:

- Policymakers and educational personnel at school level have to look for the strategies for using the local environment as a resource of learning and thereby making the content and approaches of curriculum more realistic and useful.
- Appropriate training and support for teachers are significant factors for adoption of localised learning in rural schools. Efforts should be taken to reorient teacher education programmes to localised learning using natural resources can empower teachers in making education relevant for students in rural context.

- There is need for more flexibility in leaving scope for supplementary content based on the local situation in the national curricula and more support in decentralised curricular interpretation.
- Teaching-learning materials used by the teachers for comprehending the contents need to be related to the local context and real life experiences of learners.
- Initiatives need to be taken to invite local experts whose vast experience in appropriate knowledge and proficiencies as resource persons to schools and assist both the teachers and students in learning about the local environment in a detailed and comprehensive manner.
- The school authorities need to create a collegial atmosphere in school campus where staffs can freely discuss the problems and difficulties of teaching with each other and get suggestions from each other.
- Parents need to consider that orientation of the local context in learning is not reducing the importance of schooling; rather as a substitute it is constructing the capabilities of their children for learning.

Conclusion

Although the attempts by the NCERT in the form of curriculum frameworks for reorienting the contents of the curriculum towards contextualised learning or localised learning have been recognised, comparatively less importance has been given on the development and dissemination of proper transaction strategies and approaches involving use of local context. While the process of localised learning enables teachers to comprehend the contents by associating learning to the local environment and making the decentralisation interpretation of the curriculum, many teachers apply the practices rarely. And even if when they adopt localised learning by exemplifying the real life situations, they are uninformed of the appropriate approaches. Teachers can initiate and apply creative curriculum transaction practices when they would be well-awared about the suitable approaches. In this context, the task of curriculum development and its transaction need to be decentralised from curriculum developers to teachers, teacher educators and ultimately to learners. The success of this approach necessitates a new-vision, dedication, devotion, persistence, sustenance and co-operation among educationists, policy planners, educational administrators, teachers, students, parents and community as a whole.

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Self-Instructional Material '*Nai Dishayan*'– A Training Module for Capacity Building of Teachers in Promoting Inclusive Education: An Evaluation

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ABSTRACT

In India Capacity building of teachers and teacher educators at school level through distance mode started a decade back. The Distance Education Programme (DEP) a national component under DSE&L, MHRD, Govt. of India aims at effective utilisation/integration of technology for training of functionaries associated with school education across the country under Indira Gandhi National Open university. It supports in terms of design, development and implementation of Self Learning Materials (SLM) and other electronic materials also. DEP-SSA in collaboration with SSA Uttarakhand developed a SLM 'Nai Dishayan' for training and orientation of functionaries associated with education of children with special needs at school level. The SLM was implemented across the state as a part of five days compulsory training of teachers in all seven blocks of Haridwar District. Therefore, a study was conducted to evaluate the effectiveness of this SLM in terms of capacity building of teachers, BRCCs/CRCCs and other SSA functionaries. The findings of the study would helps to review and update the SLM and develop strategic plan of action for its better implementation in future. This paper reflects many more strategies in the form of suggestions and implications for improving designing, development and effective implementations of SLM as training modules for recurrent training of teachers.

Introduction

Universalisation of Elementary Education (UEE) has been a national agenda to respond to the call of 'Education for All' (EFA) resolution of

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world conference held in March 1990 in Jomtein (Thailand). The children of age group 6-14 years were to receive free and compulsory elementary education under the article 45 of Indian constitution. Government of India has made education of children from 6-14 yrs age as a fundamental right through Right to Education Act being in the process of implementation since April 1, 2010. There are 187.62 million (134.37 million at primary and 53.35 million at upper primary level) children at elementary level in India (DISE 2008-09; NUEPA). Though there are many disparities pertaining to education of children, major steps has been taken by way of legislative action and implementation of specific need based plans and programmes (Jangira, 1985). The children with special needs have remained neglected and largely segregated (Mani, 1994). The enrolment of children with special needs varies from year to year. In the year 2003-04, there were 1.75 million such children as against 1.39 million in 2008-09 (0.74 per cent of total enrolment). However, their number has always remained around one per cent of total enrolment in elementary classes. Bringing them into the mainstream schools is a challenging assignment (MHRD, 2004).

The concept of inclusion of children with special needs is not new. In 1966, the Kothari Commission in its report had stated the need for an integrated education programme.But after 15 years in 1982 Govt. of India formulated a scheme 'Integrated Education for Disabled'(IED). In 1987 Project on Integrated Education for the Disabled (PIED) was launched by National Council of Educational Research and Training (NCERT) in collaboration with UNESCO. The UNESCO conference at Salamanca (Spain) in 1994 declared to adopt a matter of law or policy the principle of inclusive education. In 1995 Govt. of India passed Person with Disability Act on equal opportunity, protection of rights, and full participation of disabled persons wherein all children with disability be integrated in normal school. The District Primary Education Programme (DPEP) launched in 1994 and Sarva Shiksha Abhiyan (SSA) launched in 2002 supported by the World Bank and MHRD, Government of India adopted Inclusive Education to achieve the goal of Education for All. The basic aim of inclusive education is to make our schools more responsive to all children including children with special needs.

Background

Capacity building of teachers and teacher educators is essential for providing quality education to all children including children with

special needs and ensuring their learning as well. Target of SSA, objectives of EFA and vision of RTE could be realised if and only if, all children including children with special needs are included in the ambit of elementary education. Experiences from DPEP, SSA and other research studies shown that with adequate support services children with special needs can be provided quality education in all regular schools. Realising the importance of integrating children with special needs in regular schools, SSA framework has made adequate provisions for educating children with special needs. SSA ensures that every child with special needs, irrespective of the kinds, category, and degree of disability, is provided meaningful and quality education. No child having special needs should be deprived of the right to education (zero rejection policy). National Curriculum Framework for School Education (NCFSE, 2005) recommended inclusive schools for all without specific reference to children with special needs as a way of providing quality education to all. Segregation or isolation is good neither for children with disabilities nor for children without disabilities. Social integration is that all children with special needs should be educated along with other children of their normal counterparts in regular schools, which is cost effective and have sound pedagogical practices as well.

Rationale of the Study

Capacity building of institutions and personnel at state, district and sub-district levels in terms of designing, developing, producing and delivering distance learning materials is the major goal of DEP-SSA under DSE&L, MHRD, GOI. It aims at improving quality of in-service education of teachers. One of the objectives of DEP-SSA is to provide training and orientation to teachers and other functionaries like; BRCCs and CRCCs in the area of inclusive education to facilitate the education of children with special needs in regular schools. DEP-SSA designed and develops self-instructional print materials (SLMs) like; 'Abhiprerana; Prerana', 'Nai Dishayen' etc. Besides SLM, promotional materials like; broachers, calendars, pamphlets have been developed for developing awareness and sensitising community for the education of children with special needs. With the support of DEP-SSA audio-video materials were also developed in many states like; Gujarat, Odisha, Jharkhand, Maharastra, Andhra Pradesh, Assam, Haryana, Madhya Pradesh, Rajasthan, and Karnataka etc.

Although various steps have been taken through DEP-SSA for facilitating education of children with special needs, 'Rahen' and

'*Nai Dishayan*' are two SLMs produced in collaboration with SSA Uttarakhand and were implemented widely for the training and orientation of teachers at elementary school level. *Nai Dishayan* is an attempt to provide quality and meaningful education to children with all kind of disabilities in regular schools. DEP-SSA designed and developed this SLM under the guidance of DSE & L, MHRD for SSA Uttarakhand. The major objectives were to ensure professional competencies of teachers and other functionaries (BRCCs/CRCCs) to accommodate children with special needs in regular classrooms and plan their T-L processes effectively for ensuring learning of all children. All important indicators for each category of disabled children were considered while designing this SLM. Experts from each field of disability were invited for finalisation of chapter for each category of disabilities and educational interventions for them to integrate with classroom T-L process. The following chapters were designed and developed and find a place in the SLM for capacity building of teachers, teacher educators, BRCCs and CRCCs.

1. Unit 1: Visually Impaired
2. Unit 2: Hearing Impaired
3. Unit 3: Physically Handicapped
4. Unit 4: Learning Disability

The SLM was designed and developed as an experiment to improve teaching learning process for facilitating and promoting inclusion of children with special needs in regular school and classrooms. Four thousand copies of the SLM '*Nai Dishayan*' were distributed in Haridwar district for extensive training of teachers and other field functionaries in Haridwar district of Uttarakhand state. Therefore, it was felt essential to study the effectiveness of this self-instructional material for capacity building of teachers, BRCCs, CRCCs and teacher educators also. At the same time it is essential to review and update the SLMl on the basis of need, demand and feedback of field level functionaries.

Research Questions

Although self-instructional material is used as a training medium, it raises several research questions to be addressed. The study will be able to answer the following major research questions;

- Do the teachers, BRCCs, CRCCs and other functionaries have favourable perceptions towards the distance learning material '*Nai Dishayan*' in relation to; i) acceptance of the material; ii) readiness to use this learning material; iii) access, feasibility and

viability of this material; iv) adequacy of the content coverage; v) presentation of content; vi) use of language; and vi) verbal and non-verbal mode of communication reflected.

- Does the training through this material help in improving professional competencies of teachers, BRCCs, CRCCs and other functionaries in relation to; i) improvement of subject matter knowledge on IED/ Inclusive education; ii) pedagogy and use of appropriate TLM; iii) classroom management; iv) understanding classroom dynamics and group behaviour; v) modification of teaching learning strategies; vi) community mobilisation and ensuring their participation in education of children with special needs.
- Does the teachers, BRCCs, CRCCs and other functionaries face any difficulties during; i) handing this material in training session; ii) managing inclusive classroom; iii) teaching learning process in inclusive classroom; and iv) assessment and evaluation of performance of children with special needs in inclusive classroom.
- How the self-instructional material be made more effective?

Review of Related Literature

Review of literature to the problem under study is essential for the investigator to develop a thorough knowledge of the work done in the area of inclusive education. Use of self-instructional material as a training module for training and orientation of teachers at elementary school level is relatively a new approach in our country. In the present study, the investigator has scanned most of the relevant reported studies carried out related to the field.

The SIM entitled 'Abigyan' developed under DEP-DPEP, Assam for training of teachers shown a new direction to teachers, and acquainted them of using multiple strategies in their classroom. (DEP-DPEP, ASSAM). Multimedia packages and SIMs developed under DEP-DPEP, Gujarat were found to be useful and appreciated by teachers. The interest of children were found to be increased and made teaching easier for teachers and learning effective for children.(DEP-DPEP, Gujarat).SIM 'Samvridhi' indicated that the presentation of content was interesting, subject matter was easy to comprehend, interest of teachers enhanced, and content covered were relevant to the teaching learning processes. Content and activities were very helpful in understanding various concepts. It was found that self-assessment exercises were helpful in keeping track of progress of children and provding them valuable feedback. It was revealed that the SIM 'Samvridhi' was found

to give a sense of achievement to all children (DEP-DPEP, Himachal Pradesh). A Self-Learning material 'Uravu' designed and developed under DEP-DPEP, Kerala for supporting and strengthening the training programmes for primary school teachers. It was found that the demand of the material was overwhelming. Teachers felt that there should be an orientation programme on how to use this SIM effectively (DEP-DPEP, Kerala). Govt. of Odisha conducted a study on necessity of SIMs for capacity building of teachers and found that; i) teachers had to be provided scope for their content knowledge upgradation on a recurrent basis besides strengthening their pedagogical skills; ii) content upgradation could be inbuilt in the pedagogic strengthening programmes; iii) distance modes of instruction like providing print materials and audio-video support could be adopted on a wide scale; iv) cluster centers needed to be activated to develop their own programmes to cater to their local needs using local specific materials and language (DEP-DPEP, Odisha). A study was undertaken by DEP-DPEP, Odisha to ascertain the usage and benefits of the SIM Mathematics with the objectives of understanding the views of the target group on the quality of SIM like; its usefulness in the content classification, and content transaction and its use in their professional development. The study also obtained the suggestions of the target groups for improvement in training through SIMs. The sample of the study was selected from three districts of Odisha (Dhenkanal, Sambalpur and Keonjhar). Data for the study was collected through an achievement test, questionnaire and an interview schedule. The major findings of the study were: Teachers appreciated language and content presentation of SIM in Mathematics; ii) examples presented in the SIM were self explanatory but areas like fraction and decimal needed further elaboration; iii) the SIM help teachers upgrade their content knowledge in various areas of Mathematics. Teachers got academic support through the SIM; and iv) the SIM helped teachers in classroom transaction (DEP-DPEP, Odisha) (DEP-SSA, IGNOU; 2003). The classification and categorisation continues for the assessment of disability for eligibility to restorative and social welfare benefit (MHRD, 1994). In spite of much diverse practices for education of CWSN nearly half of the population of CWSN was not in school due to the obstacles faced by the local Govts. For educating CWSN Inventive approaches were used by state level practitioners. Above all there is a need for capacity buildings at all levels and managing attitudinal barriers for facilitating inclusive Education. Majority of

teachers teaching in integrated/inclusive schools do not adapt instructions frequently in the classroom to meet the special needs of the children. Teachers' lack of knowledge and empowerment was the reason for making no adaptations. The literature complies that many teachers did not find these strategies very feasible in Indian classrooms (JULKA, 2005). There is a need to revise the existing teacher education course contents to face diversified classroom conditions, orient teachers in all teacher-education institutions for capacity building of the trainers in DIETs, resource materials to support new methods appropriate for inclusive classroom and researchers undertaken at the DIET level must also include topics related to education of learners with Special Education Needs (JULKA, 2003). There is no significant difference between the perceptions of male and female respondents in terms of various facilities available for education of children with special needs and there are no district Wise variations also. Special facilities for disabled children were not found, VECs are not aware for the Education of CWSN, parents, teachers and disabled children are not aware of the provisions of facilities for disabled children under SSA and organisation of awareness programmes for the community to promote education of disabled children is needed (Soni, 2003).

There is no special teachers to help children with disabilities are appointed. Orientation given to the general teachers in the area to inclusive education and the teaching learning strategies being used in the classroom did not meet specific needs of different categories of disabled children. Therefore, teachers need intensive training for attitude change for successful implementation of inclusive education. Steps need to be taken for removal of architectural barriers in the states (Soni, 2005). It is strongly suggested to reduced their work load with children in the class with peer group or older children sharing their task in the school (Verma, 2005). PTA is helped to promote inclusive education and were able to develop healthy relationship between disabled and non-disabled children (Verma, 2004).

Integrated education of disabled has helped in improving the attendance of CWSN in schools, facilitated their progress and participation in curricular and co-curricular activities. It helped in developing positive attitude among general teachers and non-disabled children, improved their personal, social and academic skills, self-esteem of children with disabilities and reduced the drop-out rate. Steps need to be taken for capacity building of teachers to accommodate pupil's diversity in their classroom (Verma, 2002).

Parents were not given any training for use of aids and appliances provided to their children. Some instances of CWSN being provided with aids and appliances which they do not need were also reported. For accurate assessment of disability of CWSN, medical camps need to be organised for a limited number of children. Organise training programmes for parents and teachers on proper use of aids and appliances. Provision for repair of aids and appliances by trained personnel should be made. Baruah, et. al 2009). Consultative Body at state and district level may be formed for assisting and coordinating the awareness programme of IED. NGOs may be involved in providing support services to CWSN. Aids and appliances for CWSN should be of good quality and adequate in number. Architectural barriers in schools to be removed for easy access to CWSNs. Remedial classes for CWSN should be carried out. (Choudhary, et. al 2008). Level of disability of CWSN and Lack of parental cooperation is the major problem faced in implementation of IED intervention. There is insufficient infrastructure in schools for accommodating children with special needs. Out of total identified children with special needs 2/3rd were enrolled (Das, 2007). Attendance of CWSN in school is very poor and Less CWSN uses aids and appliances. Performance of CWSN in average and needs extra support in the class (Chaudasama, et.al. 2006).

NGO have progressive perspective of inclusive education (Banerjee and Mehandale, 2006). The facilities included providing suitable physical infrastructure and equipments, district level planning, budgeting and conducting training programmes for persons involved in providing service to CWSN and awards to exceptional persons among the specially challenged. Programmes for developing sensitivity and awareness among community for the needs of such children need to be organised (Venkatesh, 2006). Individualised, structured, consistent and contextual interventions need to be implemented for social integration as well as for developing self esteem, co-operative learning procedures, modeling of appropriate social behaviour, play group, leisure activity arrangements, involving parents and NGOs to nurture and bring forward disabled achievers as models for the disabled (Seethram, 2005). The intellectual capacity of the children with learning ability was significantly higher than that of those with learning disability. Children with learning disability showed better academic performance after remedial programme. Orientation programmes regarding learning disability may be arranged in collaboration with NGOs for the teachers. Awareness and remedial programmes about learning disability to be conducted

through print and electronic media. Periodical counseling programmes to be arranged for teachers and parents in this regard (Santhanam, 2005).

Objectives

1. To study the perception of teachers and teacher educators towards different aspects of SIM '*Nai Dishayan*' for training of teachers.
2. To study the effectiveness of SIM '*Nai Dishayan*' for professional development of teachers and BRCCs/CRCCs in relation to education of children with special needs.
3. To study the perception of teachers, BRCCs/CRCCs and administrators towards effective implementation of SIM 'Nai Dishayan' for facilitating inclusive education.
4. To suggest measures for further improvement in designing and development of SIM for facilitating education of children with special needs and development of professional competencies of functionaries associated with education of children with special needs in regular schools.

Methodology

Population

The population of the present study comprised of all teachers, BRCCs, CRCCs and administrators of Uttarakhand associated with training /orientation of teachers under SSA.

Sample

Keeping in mind the size of the population and nature of clientele, stratified Random Sampling technique were used for the selection of sample at the district level.

Haridwar district of Uttarakhand was selected as the sample district. From Haridwar district all eight blocks (Narsen, Haridwar, Bahadrabad, Laskar, Roorkee (Rural), Roorkee (Urban), Mangalore, and Bhawanpur) were selected as sample blocks.

From each block two clusters were selected randomly and from each cluster five schools were selected randomly. All teachers of sample schools were taken as the sample of the study. All functionaries of sample BRCCs and CRCCs were taken as the sample and at the same time all administrators of District Project Office

associated with training of teachers were selected as the sample of the study.

Tools

The following tools were used in the present study to collect necessary relevant data from teachers, BRCCs/CRCCs and administrators in Haridwar District of Uttaranchal State.

1. Questionnaires for teachers, BRCCs/CRCCs and administrators.
2. Focus Group Discussion (FDG) with DIET faculty, BRCCs, CRCCs, and teachers

Method

Descriptive survey research method was adopted for the study with the help of questionnaires and focus group discussion. Teachers, CRCCs and administrators were contacted through concerned Block Resource Center Coordinators to ensure that they responded the questionnaires. BRCCs were given adequate orientation on how to administer the questionnaire on the sample.

For analysis and interpretation of data chi square test has been employed to find difference in perception of sample with regard to each item. A comparison has been made between the calculated chi square value with table value at two different levels (0.01 levels and 0.05 level). On the basis of comparison of two values (calculated value and table value) the difference between the two mean percentages (whether significant at a particular level or not) is determined. * indicates level of significance at 0.05 level and ** indicates level of significance at 0.01 level

A focus group discussion was organised with BRCCs, CRCCs, Teachers and Teacher Educators at DIET Rookree. All participants (BRCCs, CRCCs, and Teachers) were from eight different blocks of Haridwar district and teacher educators were from DIET Rookree only. Forty participants participated in the discussion comprised of eight BRCCs, eight CRCCs, 16 teachers and eight teacher educators). The discussion was organised in two phases. In phase I, the participants were divided into four groups. Each group comprised of two BRCCs, two CRCCs, four teachers and two teacher educators. Each group assigned a topic for discussion and interaction under the leadership of one teacher educator. The topics for discussion were as follows:

1. Relevance of the SLM for improving school effectiveness programmes for education of children with special needs.

2. Effectiveness of the SLM for ensuring community support/ participation to facilitate inclusive education.
3. Importance of the SLM in the context of training of functionaries to facilitate inclusive education.
4. Dissemination of success stories for promoting inclusive education.

Each group discussed with one another for an hour and prepares a brief report of their discussion. Phase II, each group presented the themes of their discussion and interaction before all. The presentation was followed by open discussion among the members of all the groups. The session was moderated by the investigator. Necessary arrangements were made to note the proceedings of the discussion. These proceedings were collected and analysed as qualitative data in support of the objectives of the study. The following important questions were raised by the investigator during the course of discussion among the participants. Feedback and suggestions received from the participants were noted and accordingly analysed and interrelated.

(i) What is the perceptions of field functionaries towards the SLM 'Nai Dishyen' in relation to facilitating different dimensions of inclusive education?
(ii) Do you think this SLM is helpful in improving professional competencies of teachers, BRCCs/CRCCs and other functionaries in promoting inclusive education?
(iii) What are the types of difficulties faced by the teachers, BRCCs/ CRCCs and other functionaries in handing this SLM during training sessions?
(iii) What suggestions you would like to give for further improvement of this SLM to make it more teachers friendly?
(v) What steps should be taken at field level for facilitating inclusive education initiatives?

Findings of the Study

The findings of the study are presented under than four different sections such as: Section A: Findings pertaining to responses of teachers; Section B: Findings pertaining to responses of BRCCs/ CRCCs; Section C: Findings pertaining to responses of administrators; and Section D: Findings from Focus Group Discussion

Section A: Findings pertaining to responses of teachers

General aspects of inclusive education: The major focus of the study was to assess the effectiveness of SIM '*Nai Dishayan*'. It was found that there is a significant difference between the responses of teachers with respect to; i) understanding of the SLM (4.02); ii) effective management of inclusive classrooms (6.08); and iii) making better seating arrangement in inclusive classroom (4.02).Teachers are of the opinion that this SLM helps in effective management of inclusive classrooms (62.72 per cent) and making appropriate seating arrangement (64.49 per cent) in inclusive classrooms. Most of the sample teachers (51.47 per cent) find difficulties in inclusive classroom in dealing children with Special Needs. However, 62.72 per cent of sample teachers did not go through the SLM. It is also found that 56.22 per cent of teachers viewed that the SLM helps them in understanding children with Special Needs. This shows that SLM 'Nai Dishyan' is of quite beneficial for the teachers in developing a thorough understanding towards children with special needs and develop confidence in handling children with special needs in inclusive classrooms. **Improving instructional strategies:** There is a significant difference between the responses of teachers with regard to; i) organisation of various activities in classroom in making T-L process effective (4.68) and ii) effective communication with children with special needs (6.86). Responses of the teachers go in favour of the effectiveness of the SLM. About 50 per cent teachers are of the opinion that this SLM helps in designing, developing and adopting TLM effectively in classroom to meet the need of children with special needs and 41.42 per cent felt that the SLM is useful in modifying transactional strategies for the benefit all children including children with special needs. About 57.39 per cent of teachers viewed that this SLM is quite helpful in selecting and organising co-curricular activities for promoting inclusiveness in regular classroom. This is definitely a positive indication on the part of academic effectiveness of this SLM in bringing a meaningful change in T- L process in inclusive classrooms. **Building Partnership and Cooperation:** There is no significant difference between the response of teachers pertaining to effectiveness of this SLM in building partnership and cooperation for facilitating education of children with special needs. 59.76 per cent of the teachers opined that this SLM is helpful for teachers in developing motivation in parents, particularly their active involvement in various activities. Similarly 55.62 per cent teachers expressed that it is useful to motivate community members to meet

the needs of children with special needs and 41.47 per cent viewed that it is quite beneficial in selecting and assigning activities for children according to their potential. It is found that more than 50 per cent of teachers are strongly in favour of the effectiveness of this SLM and about 50 per cent viewed that this material is quite helpful in comprehensive evaluation of children with special needs in inclusive setting. At the same time, more than 40 per cent of teachers did not responded positively against the items pertaining to relevance of this SLM in developing partnership and cooperation for making inclusion a success. This gives an indication that the content of the SLM may be improved for helping and motivating teachers in developing partnership and cooperation with parents and community members for the success of inclusive education. **Facilitating inclusive education:** There is no significant difference between the responses of teachers with regard to various aspects related to effectiveness of this training module. Developing professional competencies of teachers to deal children with special needs effectively and motivating parents and community to send their children to school are some of the major objectives of this SLM 43.19 per cent of sample teachers reported that this SLM helps in development of their competencies to deal all children in inclusive classrooms. It also helps in motivating parents and establishes a rapport with them for better education of children to schools with special needs (47.92 per cent). It is found that about 55.03 per cent of teachers developed a positive attitude towards all children in inclusive classrooms. Similarly, with regard to effectiveness of this SLM in promoting inclusion and socialisation of children and in motivating children with special needs to come to school this SLM is found to be very useful. **Overall effectiveness:** There is no significant difference between the responses of teacher pertaining to the relevance of the module in facilitating inclusive education at elementary level. However, there is a significant difference in responses of teachers with regard to training of functionaries to make use of this SLM effectively. 78.11 per cent of sample teachers viewed that they have not received any training/orientation on effective use of this SLM. This is found to be a serious drawback in obtaining desired result out of this SLM. Some of the teachers found to be benefitted out of the SLM on the basis of their own proactive initiatives only. Fifty two per cent of teachers viewed that they are constantly trying to develop self-confidence of children with special needs and performance of those children are found to be improved in inclusive

classrooms. It is encouraging to note that 50.03 per cent of teachers viewed that this SLM helps in building their confidence to face challenges in inclusive classroom and 49.11 per cent of teachers pointed that this SLM helps them to ensure better inclusion of children with special needs in regular schools.

Section B: Findings pertaining to responses of BRCCs/CRCCs

Training on inclusive education: It is found that this SLM is quite relevant for teachers to improve their professional competencies in facilitating education of children with special needs in regular schools. 63.68 per cent of BRCCs/CRCCs viewed that this SLM is relevant to equip competencies of teachers in effectively handling all children in inclusive classrooms. About 73.13 per cent of BRCCs/CRCCs are orientated on different areas of education of children with special needs. 87.07 per cent of BRCCs/CRCCs viewed that in the present scenario the training/orientation planned and provided to teachers are not sufficient. They need additional training/orientation to improve their skills, and competencies pertaining to effective implementation of inclusive education programme in inclusive classrooms. It is equally important for both children with special needs and their normal counterparts also. This SLM will actively support in facilitating inclusive education programmes and act as a guide for teachers, and other functionaries associated with education of children under inclusive education programme. This is a paradigm shift in the field of elementary education. It needs a thorough planning and systematic approach of implementation of various plans and programmes with cooperation of the society and community at village level. **Effectiveness of the '*Nai Dishayan*':** there is a significant difference in the perception of teachers pertaining to; i) developing confidence of teachers in handling children with special needs in inclusive schools and classrooms (10.33**); ii) improving effectiveness of training in inclusive education (13.70**); and iii) helping teachers to develop awareness among parents and community members about education of children with special needs in general and inclusive education in particular (3.96**). In all the three aspects the difference goes in favour of the utility and relevance of the SLM 'Nai Dishayen'. This SLM is of quite effective with regard to providing training to teachers on various aspects of inclusive education. 62.28 per cent of BRCCs/CRCCs viewed that adequate facilities are available in schools for accommodating children with special needs and 74.63 per cent of teachers are confident in handling

children with special needs effectively in regular schools. 77.61 per cent of BRCCs/CRCCs pointed that this SLM is quite beneficial for providing training to teachers. 76.16 per cent BRCCs/CRCCs responded that the document 'Nai Dishayen' helps teachers to develop awareness in parents and community for better education of children with special needs with maximum utilisation of available resources.

Section C: Findings pertaining to responses of administrators

With regard to the perception of administrators on various aspects of training through this SLM it is found that only 33.33 per cent of administrators have received regular feedback from teachers and other SSA functionaries about the relevance of this document. 66.67 per cent of administrators viewed that they have not received any such feedback. This clearly indicates the difficulties of administrators towards effective implementation of this SLM. Only 16.67 per cent of administrators arranged training programmes for the teachers and other functionaries on the use of this SLM. This is considered to be a serious drawback on the part of administrators in facilitating the initiatives for promoting inclusive education and developing competencies of teachers and other functionaries also. 25 per cent of administrators viewed that functionaries are equipped themselves in using this SLM. Though most of the administrators (95.83 per cent) are agreed that this SLM is useful for teachers, but hardly they are serious on the implementation of this SLM for the benefit of teachers and children with special needs. 91.67 per cent of administrators pointed that they find change/improvement in inclusive education programme for promoting education of CWSNs in regular schools, but active involvement of all stockholders is yet to be seen.

There is lack of strategic plan for implementation of this SLM under inclusive education initiatives in one hand and lack of initiatives on the part of administrators and implementers in making effective use of new plans, programmes for capacity building of functionaries at different levels.

Section D: Findings from Focus Group Discussion

Content Related Issues: A wide range of content covered in the module aims at building confidence of teachers in accommodating children with different categories of disabilities in regular school and classroom but hardly give any inputs pertaining to curricular

adaptation/modifications for facilitating teaching learning process in inclusive classroom. Strategies pertaining to classroom management, seating arrangement, building partnership etc. were reflected clearly for the benefit of teachers and trainers but at the same time it is noticed that there is lack of examples and illustrations to develop clarity/understanding. For making the content more relevant and useful, case studies would have included but this module does not contain any such items. Characteristics and identification of different categories of children constitute an integral part of this module but this part is delta with theoretical explanations only. This could have explained with examples and illustrations for better understanding of teachers and other functionaries. The content used in the module is adequate and appropriate for improving competencies of teachers but each aspect of the content should have supported by some real examples and illustrations.

At the time of selection of content for a training module interest of children with special needs must constitute an important part. Teachers need to be trained in appropriate teaching learning process so as to make the inclusive classroom interactive and participatory. Problems of various categories of children must be reflected and at the same time these problems should be analysed with citing appropriate remedies. Documentation of best practices for each categories child with special needs should constitute a part of the training module. Evaluation is an important part of teaching learning processes. Evaluation in inclusive classroom is a challenging assignment for teachers. Therefore, module for inclusive education must reflects the means of evaluation of teaching learning process in inclusive classroom with examples and illustrations. Cooperation of parents and community is the key to the success of inclusive education. This aspect must be dealt with appropriate case studies and illustrations for motivating teachers. Guidance and counseling should also constitute an important part of teachers training module in inclusive education. **Language Related Issues:** Language used in the training module is quite simple and understandable on the part of teachers and trainers associated with education of children at elementary level. But many teachers viewed that it should be more motivating and interesting. Faculties of DIET are of the opinion that the language used in the module is simple but not contextualised in local context. It needs to be more local specific to facilitate easy understanding of teachers. The technical terms used in the content needs further clarifications. There are certain points, which create

ambiguity/confusion in the mind of teachers with respect to taking appropriate steps to facilitate inclusion of children with special needs in one hand and providing them education of their interest on the other hand. **Presentation Related Issues:** Content material has been organised sequentially and systematically, which create motivation in teachers and teacher educators. Presentation strategies adopted in the content hardly reflects teaching-learning process. It is more of informative with theoretical details and descriptions. Participants are satisfied with the interactive and friendly mode of presentation. They were expecting pedagogic aspects in the presentation, which could help them in making the teaching learning process effective and satisfying in inclusive classroom. Participants suggested that taking into consideration of different categories of children with special needs interactive multimedia programme can be designed to supplement this SLM but this aspect did not find a place in it. More pictures should have been included for making the content lively. **Relevance Related Issues:** The SLM 'Nai Dishayen' is considered to be a very good supporting document for the teachers at early stage (primary level) of inclusive education. It serves as a reference material for designing and development of appropriate teaching learning materials for inclusive classrooms. Trainers and master trainers need specific and strategic orientation/ training pertaining to how effectively this module can be used for the benefits of teachers during in-service training. No steps have been taken for organising training and orientation of field level functionaries. This certainly creates a difficulty in teachers and other functionaries in realising the importance of this SLM and understands its significance.

Faculties of DIET are of the opinion that directly they are not associated with training of teachers. Out of all faculties only one faculty developed inclination and interest towards inclusive education. Though DIET Roorkee is one of the study centers of MP Bhoj Open University for foundation course in disability but none of the functionaries of DIET associated with in-service training programme with SSA for facilitating inclusive education and never they explore any possibility of strengthening education of children with special needs with building partnership with parents and community.

Educational Implications

The content of the material may be improved to meet the expectations of target group with incorporation of classroom based examples and

illustrations. The teachers must be provided adequate training/ orientation to use this material effectively. Teachers working at different levels must be given a strategic orientation/training on inclusive education in general and effective use of training modules in particular for facilitating education of children with special needs in regular schools. There is a need to develop a strategic intervention for improving the use of this document during in-service training of teachers to develop their competencies to handle situation for promoting inclusion of children with special needs in regular schools. Modification of transactional strategies to make it suitable for children with special needs is a challenging aspect for the academic improvement of children with special needs. Teachers at elementary level face many difficulties in this area. Hence, there is a need to improve the usefulness of this training module 'Nai Dishayen' to meet the need of teachers? There is the need of a structured thematic training/orientation for the teachers on effective implementation of training modules. Therefore, it is essential to improve the qualitative aspect of this module pertaining to modification of transactional strategies and providing appropriate training/orientation to teachers for making inclusion a reality

Improving instructional strategies for facilitating learning improvement of CWSNs is a challenge, which must be taken care of with appropriate strategies. It is a serious concern which needs further improvement on the part of improving the content of SIM 'Nai Dishayen'. The SIM needs to be revised and modified to make teacher competent in selecting and organising appropriate scholastic and co-scholastic activities for facilitating inclusive education in regular schools. Building partnership and cooperation among various stakeholders to realise the goal of education for all is one of the objectives of this training module. So this aspect must be taken care of in real sense. Much need to be done in the light of citing examples, illustrations, case studies etc for improving effectiveness of SIM for ensuring cooperation from all around. It is essential to organise thematic and intensive training for the teachers, teacher educators and other functionaries to develop strategy plan for facilitating inclusive education. It is essential to promote effective use of training modules for wider benefit of the teachers working at elementary level. It is possible by providing recurrent training to teachers on various aspects of inclusive education. Developing confidence of teachers to face challenges related to inclusive education must be the first priority of in-service training. Strategic steps must be taken to review various

dimensions of this SLM 'Nai Dishayen' to make it more effective and useful. There is the need of continuous upgradation and updating of knowledge and skills of the teachers to improve their competencies pertaining to making inclusion effective. Hence, a recurrent training programme may be designed for BRCCs/CRCCs, so that they will be able to make the teachers confident in carrying out the challenging task of inclusive education. BRCCs/CRCCs are not clear, and confident about their role and responsibility for making training on inclusive education meaningful and effective. There is the need of additional training/orientation to improve the skills and competencies of teachers pertaining to inclusive education. From this, it is concluded that training/orientation aspects related to inclusive education needs a thorough review and on the basis of which it is to be redesigned to improve relevant skills in teachers, BRCCS/CRCCs and other functionaries.

BRC/CRC functionaries have not received any training/ orientation on education of CWSNs in regular school. It is a great hurdle in implementation of inclusive education programme and realising its effectiveness as well. BRC/CRC functionaries are of the opinion that teachers are provided with adequate training/ orientation to develop their capacity to handle CWSNs in regular schools. But at the same time, they admit that competencies of teachers need to be improved for handing such category of children in regular school and they need additional training/orientation to improve their skills and competencies pertaining to inclusive education. Therefore, it is realised that effective orientation/training must be designed and developed for providing adequate exposure to BRC/CRC functionaries, trainers, master trainers and resource persons working at various level first, to realise the goal of inclusive education a real success. Equipping competencies of teachers in effective handling of children with special needs in regular school is prime concern for facilitating education of children with special needs.

A resource group needs to be formulated at each cluster for providing training/orientation to teachers. During training attempt should be taken by the resource group to simplify the language to make the programme a real success. Attempt must be taken for the capacity building of resource group formed at the cluster level. Efficient interpretation of language is a key to derive maximum benefit from the training module. Instead of planning for examples and illustrations for individual category of children, it is advisable to frame certain common examples and illustrations that will find beneficial

of all categories of learners. In a single activity/example/illustration there should be scope for involvement and participation of all categories of children to develop inclusive ethos in them. Clear and simple language has been used in the presentation of content in the module.

Simply design and development of training module will not serve the purpose of improving the quality of education unless there is strategic planning for its effective implementation. How best a training module may be the overall effectiveness depends on acceptability and ownership on the part of field functionaries. This is possible if and only if, all field level functionaries will be given appropriate, adequate and need based recurrent training/orientation. There is the need of strong will and motivation on the part of teacher to effectively operationalise the programme of inclusive education with appropriate modification of curriculum transaction strategy. There is the need of a structured training/orientation for all teachers and BRCCs/CRCCs in effective implementation of training modules in general and SLM in particular for the benefit of field level functionaries.

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Effect of Mastery Learning Strategy on Achievement in English in Relation to Intelligence

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ABSTRACT

The present study investigates the effect of mastery learning strategy on achievement in English in relation to intelligence. The sample was drawn of IXth class students taken from two different schools of Panchkula (Haryana), affiliated to CBSE, New Delhi. Instructional material based on mastery learning strategy were prepared and implemented to the experimental group after pre-testing. The gain scores were computed after post-test for all the students. General Mental Ability Test (1972) by Jalota was also administered. A 2 ×3 analysis of variance was used to arrive at the following conclusions: (i) Mastery learning strategy group was found to attain significantly higher achievement scores as compared to conventional group, (ii) Performance of students with different intelligence levels through mastery learning strategy was found significant, (iii) Significant interaction effect was found to exist between the two variables.

Introduction

Teaching is an activity which is designed and performed for the attainment of some broad goals or a large number of specific objects in terms of change in pupil's cognitive structure and behaviour. Teacher in an experimental situation may use a simple model. But in actual practice no teacher sticks to one model. There are various models of teaching. Eggen, Kauchak and Harder (1979) defined "Models are prescriptive teaching strategies designed to accomplish particular instructional goals".

Teaching is a difficult task. It requires different types of method and teaching aids. The selection of these methods and techniques

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depends upon the nature of content, learning objectives, learner abilities and students entering behaviours (Davis and Sorrell,1995). The main focus of teaching is to bring about a desirable change in the behaviour of learner. It is brought about the teacher using teaching strategies to achieve his objective. But traditionally we have been using teaching method for content presentation. In order to increase the effectiveness of the presentation, the audio visual aids are also used.

According to Joyce and Weil (1985), "Model of teaching is a pattern or plan which can be used to shape a curriculum or course, to select, instructional material and to guide teacher's action. Models are designed to attain specific goals. When a teacher identifies a goal, selects a particular strategy designed to attain goal, we can say he is using a model approach". According to Shahid (2000), "Model of teaching can be defined as instructional design which describes the process of specifying and producing particular environmental situation that cause the students to interact in such way that a specific change occurs in their behaviour".

According to Bloom (1971), "Mastery learning is based on the belief that any teacher can virtually help all students to learn excellently, quickly and self confidently. Mastery learning believe that it can be implemented simply by modifying traditional group instructional procedures to ensure that some students have more time and they receive appropriate additional instruction according to the result of the formative evaluation".

"Mastery learning uses differentiated and individualised instruction, progress monitoring, formative assessment, feedback, corrective procedures, and instructional alignment to minimise achievement gaps (Bloom, 1971; Zimmerman & Dibenedetto, 2008). The strategy is based on Bloom's learning for mastery model, which emphasises differentiated instructional practices as strategies to increase student achievement. Drawing from the principles of effective tutoring practices and learning strategies, mastery learning uses feedback, corrective procedures, and classroom assessment to inform instruction. Rather than focusing on changing content, this strategy endeavours to improve the process of mastering it" (Bloom ,1971).

According to Davis and Sorrell (1995), "The mastery learning divided subject matter into units that have predetermined objectives. Students, alone or in groups, work through each unit in an organised faction. Students must demonstrate mastery on unit exams, typically 80 per cent before moving on to new material. Students who do not

achieve mastery receive remediation through, peer monitoring, small group discussions, or additional homework. So, students with minimal prior knowledge of material have higher achievement through mastery learning than with traditional methods of instructions".

According to Bloom (1968), mastery learning offers a powerful new approach to student learning which can provide almost all students with the successful and rewarding learning experiences. What Cioch (1977) proposes for food service courses is also relevant in other settings i.e. almost all students can master what they are taught. Further, procedures suggested whereby each student's instruction and learning can be managed within the context of ordinary group-based classroom instruction so as to promote his fullest development. Mastery learning makes student learning more efficient than conventional approaches. Mastery learning differs from traditional curricular programmes. The emphasis is on assuring that every student achieves or 'masters' the curriculum and only moves ahead once demonstrating an acceptable level of performance (Bloom, 1976). Mastery learning helps students to learn more content in less time. It also helps in developing learner's interest and attitude towards the subject taught than usual classroom methods. Mastery learning has an impact on the affective outcomes of education like modification in self-concept and to some extent development of positive attitude towards the subject. When learners are conceived that they can learn effectively, they will confront any learning task with the quite strength of knowing they will able to cope. Teaching strategies, which help reducing student anxiety, also enhance student achievement. The mastery learning approach came into practice in the decade though the concept is an old one. The different authors from different field defined mastery learning in a variety of ways (Bloom, 1968).

The word 'intelligence' is said to be the literal translation for Aristotle's term 'diagnoses'. Plato was the first to begin the discussion on intelligence with his tripartite division of the 'nous' which covered the soul, mind, spirit and thinking as well as that of mental ability. Intelligence is generally considered as the most important correlates of achievement. So intelligence is the common factor to affect the achievement of the learner. It is a descriptive concept. Commonly it is associated with the general behaviour of an individual so that it becomes synonymous of brightness of being brainy. A psychologist presents it as theoretical construct which may vary from very low to very high. Generally intelligence conveys three messages such as

ability to adjust, ability to learn and ability to carry on abstract thinking.

According to MacMillan (1990), "In education, intelligence is the ability to learn or understand or to deal with new or challenging situations. In psychology, the term intelligence may more specifically denote the ability to apply knowledge to manipulate one's environment or to think abstractly as measured by objective criteria. Intelligence is usually thought of as deriving from a combination of inherited characteristics and environmental factors. The subject remains hotly debated and many have tried to show that either biology (especially genes) or environment are more or less exclusively responsible for producing differences in intelligence. Particularly contested have been studies purporting to show links between ethnic heritage and intelligence, most of which have not been accepted in the scientific community. General intelligence is often said to comprise various specific abilities but critics contend that such compartments fail to reflect the nature of cognition and that other models, perhaps based on information processing, are needed. High intelligence is sometimes shown to correlate with social achievement, but most experts believe other factors are important and that intelligence is no guarantor of success. Intelligence means the ability to reason and profit by experience. An individual level of intelligence is determined by a complex interaction between his heredity and environment".

Need and Significance of the Study

The proper teaching strategies help teachers in solving learners' problems and bring remarkable improvement in their overall behaviour. Review of the literature shows that use of various teaching strategies gave quite positive results in comparison to traditional teaching methodology. While teaching high school English student's, investigator found conventional method not that much effective. Investigator thought to conduct research study by using mastery learning strategy for teaching experimental group and conventional method for second group of students and investigate whether the use of mastery learning strategy is effective or not. Intelligence affects how students go about studying. Thus, the present study gives wider range of knowledge regarding the effect of mastery learning strategy and relationship with student's intelligence in English grammar. The findings of the present study are also be helpful to assist the students

to improve their learning skills in English. The results of the present study are also helpful for teachers in understanding and adopting the approach of a strategy and break the monotony of the conventional teaching strategy. Therefore, the investigator made an attempt to enquire into the effect of mastery learning strategy on achievements in English in relation to intelligence.

Objectives

1. To compare the performance of groups taught through mastery learning strategy and conventional teaching strategy.
2. To compare the performance of groups having different intelligence levels.
3. To examine the interaction effect between teaching strategy and intelligence levels.

Hypotheses

H1 : The performance on English grammar of mastery learning strategy group is higher than the conventional group.
H2 : The performance of groups having different intelligence levels is significantly different from one another on English grammar.
H3 : There exists significant interaction effect between mastery learning strategy and intelligence levels.

Methodology of the Study

It is necessary to adopt a systematic procedure to collect the necessary data which helps to test the hypotheses of the study under investigation. Various steps of research methodology followed in the present study are as follows.

Sample

The study was carried out on 100 students of IXth class of Panchkula i.e. Hans Raj Public School Panchkula (Haryana) and D.A.V. Senior Secondary School, Panchkula (Haryana). It was random and purposive sample. The two schools were randomly selected from the total schools of Panchkula. The study was conducted on two intact groups viz. one is experimental group and other is control group in each school. From each school, the two intact sections of 25 students were selected.

Design

2×3 analysis of variance was employed for analysis of mean gain scores on achievement. The main dependent variable was performance gain. The two independent variables were instructional treatment and intelligence levels. The variables of teaching strategy were examined at two levels, namely mastery learning strategy and conventional teaching strategy. The classification of intelligence group was done for intelligence variable operating at three levels viz. high, average and low intelligence.

Tools used

The following tools were used for the collection of data:

1. General Mental Ability Test by Jalota (1972) was used.
2. Achievement Test in English grammar was prepared by the investigator.
3. Five Lessons in English grammar based on mastery learning strategy and conventional teaching strategy were prepared by the investigator.

Procedure

After the selection of the sample and allocation of students to the two instructional strategies, the experiment was conducted in four phases. Firstly, the General Mental Ability Test was administrated in each school, in order to identity intelligence levels of the students. Secondly, a pre-test was administered to the students of experimental and control groups. The answer-sheets were scored to obtained information regarding the previous knowledge of the students. Thirdly, one group was taught through mastery learning strategy and another group was taught through conventional teaching strategy by the investigator. Fourthly, after the completion of the course, the post-test was administered to the students of both the groups. The answer-sheets were scored with the help of scoring key. Time limit for the test was one hour.

Analysis and Interpretation of the Results

Analysis of Descriptive Statistics

The data was analysed to determine the nature of the distribution of scores by employing mean and standard deviation. The analysis of variance was used to test the hypotheses related to strategies of

teaching and intelligence levels. The mean and standard deviation of different sub groups have been presented in table - 1, 2 and 3.

Table 1
Means and SD of Achievement Scores for the Different Sub Groups

Intelligence Groups	Teaching						Total		
	Mastery Learning Strategy			Conventional Strategy					
	N	Mean	SD	N	Mean	SD	N	Mean	SD
High Intelligence	13	5.92	4.16	13	2.92	2.55	26	4.42	5.65
Average Intelligence	24	11.21	5.34	24	4.46	2.94	48	7.83	9.70
Low Intelligence	13	15.38	3.02	13	5.85	3.01	26	10.62	11.87
Total	50	10.92	5.67	50	4.42	3.07	N= 100		

Source: Field Study, 2011

It may be observed from the Table-1 that the mean scores of mastery learning strategy (M=10.92) is higher than the conventional teaching strategy (M=4.42). This shows that mastery learning strategy is more effective than that of the conventional teaching strategy. It is also confirmed that the mean of the three groups i.e. high, 6 average and low intelligence group is 4.42, 7.83 and 10.62 respectively. It is concluded that the gain mean with mastery learning strategy has shown significant differences for high, average and low intelligence students. These differences are also found in respect of the different intelligence group taught through conventional teaching strategy.

Analysis of Variance on Achievement Scores

The mean of different sub-groups, sum of squares, degree of freedom, mean sum of squares and the F-ratio have been presented in Table - 2.

Table 2
Summary of Analysis of Variance (2×3) Factorial Designs

Source of Variance	Sum of Squares	df	Mean Sum of Squares	F-ratio
Treatment (A)	1056.25	1	1056.25	69.13**
Intelligence (B)	500.94	2	250.47	16.39**
Interaction (A × B)	140.41	2	70.21	4.59*
Error	1436.51	94	15.28	

* Significant at 0.05 level ** Significant at 0.01 level
(Critical Value 3.94 at 0.05 and 6.91 at 0.01 level, df 1/94)
(Critical Value 3.09 at 0.05 and 4.84 at 0.01 level, df 2/94)

Treatment (A)

It may be observed from the Table - 2 that the F-ratio for difference in mean gain scores of mastery learning strategy and conventional teaching strategy group is 69.13, which in comparison to the table value was found significant at 0.01 level of significance. It shows that the groups were not different beyond the contribution of chance. Hence, the hypothesis H1: The performance on English grammar of mastery learning strategy group is higher than the conventional teaching strategy group, is accepted. The result indicates that the performance of mastery learning strategy group is more effective than that of the conventional teaching strategy group.

Intelligence Groups (B)

Table-2 shows that the F-ratio for difference in means of the three groups of intelligence level are 16.39, which in comparison to the table value was found significant at 0.01 level of significance. It shows that the three groups were different beyond doubt of operating chance factor. The result indicates that three intelligence lever differ significantly in respect of achievement course irrespective of strategy of teaching. Hence, the hypothesis H2 : The performance of groups having different seven intelligence levels is significantly different from one another on English grammar, is accepted at 0.01 level of significance. The observed difference may be attributed to the chance factor. The result indicates that the high, average and low intelligence group did not yield equal level of achievement.

In order to probe deeper, the ratio was followed by t-test. The value of the t- ratio for the different combinations have been given in the following Table-3

Table-3: t-ratio for different combinations of intelligence levels

Intelligence Groups	**High Intelligence**			**Average Intelligence**			**Low Intelligence**		
	N	**Mean**	**SD**	**N**	**Mean**	**SD**	**N**	**Mean**	**SD**
High Intelligence N Mean SD	--			1.91			2.40*		
Average Intelligence N Mean SD	--			--			1.03		
Low Intelligence N Mean SD	--			--			--		

*Significant at 0.05 level
(Critical Value 2.00 at 0.05 and 2.65 at 0.01 level, df 72)
(Critical Value 2.01 at 0.05 and 2.68 at 0.01 level, df 50)

It may be observed from the Table - 3 that the t-ratio for the difference in gain means of high and average intelligence groups is 1.91, which in comparison to the table value was not found significant even at 0.05 level of significance. Hence, the hypothesis of significant differences is rejected in case of high and average intelligence irrespective of grouping across other variable. The result indicates that the achievement of high and average intelligence groups was not significantly different in respect of gain scores.

Table - 3 shows that the t-ratio for the difference in gain means of high and low intelligence groups is 2.40, which in comparison to the table value was found significant at 0.05 level of significance. Hence, the hypothesis of significant differences is not rejected in case of high and low intelligence irrespective of grouping across other variable. This infers that low intelligence group performs significantly better than that of high intelligence groups on achievement in respect of gain scores.

Table - 3 shows that the t-ratio for the difference in gain means of average and low intelligence groups is 1.03, which in comparison to the table value was not found significant even at 0.05 level of significance. Hence, the hypothesis of significant differences is rejected in case of average and low intelligence irrespective of grouping across other variable. The result indicates that the achievement of average and low intelligence groups was not significantly different in respect of gain scores.

Interaction Effect (A × B)

It may be observed from the Table-2 that the F- ratio for the interaction between treatment and intelligence groups is 4.59, which in comparison to the table value was found significant at 0.05 level of significance. It indicates that the two variables do interact with each other. Hence, the hypothesis H3, there exists significant interaction effect between mastery learning strategy and intelligence levels, is accepted. So, mastery learning strategy and conventional teaching strategy have not yielded equal levels of achievement for high, average and low intelligence level for the students.

Discussion

The result of the present investigation have lead to the conclusion that mastery learning strategy yields higher levels of attainment in English grammar as compared to the conventional group. The results

are supported by the findings of Kulik, Kulik and Bangert - Drowns (1990) found that positive correlation of students attitudes towards instruction and content of mastery learning programmes. Lazaowitz, Baird, Bowlden and Lazaowitz (1996) found that group of mastery learning students did better in some topics as compared to individualise mastery learning. Dutt and Kumar (2002) found that mastery learning strategy is better on achievement in economics than the traditional method of teaching. Wachanga and Gamba (2004) found that mastery learning approach facilities students learning chemistry better than the regular teaching methods. Dillashaw and Okey (2006) result indicates that achievement of mastery learning students were significantly higher than that of non-mastery control students. Adeyemi (2007) found that mastery learning approach on student's performance in social studies was more effective than the conventional method of teaching. Wambugu and Changeiywo (2008) concludes that mastery learning approach is an effective teaching method which physics teachers should be encouraged to use and should be implemented in all teacher education programmes in Kenya. Damavandi and Kashani (2010) found that mastery learning method is more effective on performance of weak students in higher levels of learning method than in common learning method. Sakiz (2011) found that mastery approach goal orientation was significantly positively associated with college students.

The performances of students in English grammar through mastery learning strategy have shown significant differences for high, average and low intelligence students. The results were consistent with the findings of Dutt (1987) found that intelligence of the problem solver significantly affect the problem solving ability irrespective of strategies of training. Gill (1989) found that high intelligence students scored higher on originality than low intelligent subjects irrespective of training strategies. Bal (1992) found that intelligence had a significant effect on acquisition and retention of higher level writing skills in English. Riding and Pearson (1994) revealed that effect of intelligence on performance in different subjects showed significant effects. Bogaards (1996) found that intelligence played significant role to influences language learning. Mishra (1997) found achievement of students differ significantly at different levels of intelligence. Kohli (1999) found that intelligence have significant effect on the achievement of students. Mehra and Mondal (2005) indicated that the high intelligence group performed better on achievement in Science than the low intelligence group taught by

traditional instruction. Singh (2005) found that the students belonging to high level of intelligence had better performance than the low level of intelligence and Aruna and Usha (2006) found that intelligence have significant positive correlation with process outcomes in Science.

The performance of mastery learning strategy was found interacting with each other at different levels of intelligence. It indicates that performance through mastery learning strategy of teaching was different for different levels of intelligence.

Conclusion

The present study reveals that performance in English grammar of students taught through mastery learning strategy was significantly higher than those which were taught through conventional teaching strategy. The gain mean with different teaching strategy at different dimension of intelligence levels groups do differ to each other. Further, the gain means with mastery learning strategy has shown significant differences for high, average and low intelligence students. However, the difference in mean score for interaction across different grouping did turn out to be significant. The 10 study recommends the use of mastery learning strategy for better performance of English students at secondary stage.

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A Study of Academic and Infrastructural Input and Achievement of Scheduled Caste Students of Residential Schools of Madhya Pradesh

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Abstract

The study is an attempt to examine infrastructural and academic inputs being provided and the outcome of schooling in terms of achievement of scheduled caste students of Residential Schools of Madhya Pradesh.

The findings of the study depicts that there are acute deficiency of infrastructural facilities in Residential Schools during the study period. Achievement of students in subjects like Physics, Chemistry, Mathematics and General English is not satisfactory. There is a need to create congenial environment to promote learning in the campus of Residential Schools. The levels of achievement of learners are increasing in these institutions, thus the Government should continue the scheme of Residential Schools for scheduled castes and it must be further strengthened.

Introduction

India as a nation is bound by its constitution to establish an egalitarian social order in which every citizen is guaranteed liberty, equality and justice – social, economic and political. It has been the national society with rigid social stratifications, wide economic and cultural disparities persisting through centuries. It is a Herculean task to eradicate these inequalities and to establish an egalitarian social order.

Article 45 of the constitution of the country directs that 'free and compulsory education should be provided for all children up to the age of 14 years'. It is widely recognised that the spread of education plays a vital role in the socio-economic and cultural modernisation of the country in general and social mobility of the weaker sections

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in particular. Many efforts are to be made by all concerned with education to make it liberal in reality. Unless access to education and equality of opportunity and outcome are insured, democracy cannot be strengthened. Right To Education Act 2009 came into effect from 1st April 2010 is a step to achieve this objective. With this India has moved forward to a right based framework that costs a legal obligation on the Central and state government to implement this fundamental child right as enshrined in the Article 21A of constitution, in accordance with the provision of the RTE Act.

The directive principles of state policy embodied in part IV of our constitution is a unique feature. Article 46 of the constitution deals with 'the promotion of educational and economic interests of Scheduled Caste, Scheduled Tribes and other weaker sections'. It says - "The state shall promote with special care the educational and economic interests of the weaker sections of the people, and in particular, of the Scheduled Castes and Scheduled Tribes and shall protect them from social injustice and all forms of exploitation." To fulfill the directive principle, as mentioned above, Central and State Governments formulated and enacted the policy of not only the reservation for SC/ST students in educational institutes but also launched programmes with special emphasis to these otherwise underprivileged sections of the society.

Profile of Scheduled Castes in India

Scheduled Castes are notified in 31 states and union territories of India. The total population of SCs in India is 20.14 crore (census 2011) which constitutes 16.6 per cent of the total population of India. Scheduled Castes population increased by 20.8 per cent in the previous decade. Total Population of India grew by 17.7 per cent during 2001-11 against 21.5 per cent in the previous decade. The variation in the SC population of India and Madhya Pradesh (sex wise) during 2001-11 is shown below:

Table 1
Population of SCs: 2011

(in crore)

	India			***Madhya Pradesh***		
	2001	*2011*	*Variation(%)*	*2001*	*2011*	*Variation(%)*
Total	16.66	20.14	+ 20.8	0.92	1.13	+ 23.9
Males	8.61	10.35	+ 20.3	0.48	0.59	+ 23.0
Females	8.05	9.79	+ 21.5	0.44	0.54	+ 24.9

To protect and safeguard the rights of scheduled castes Government of India is conducting various economic and educational schemes directly and through State Governments. Scheduled Caste Sub Plan (SCSP) has been introduced in accordance with Tribal Sub Plan (TSP) for tribal. Under this plan fund is released to state governments for the educational and socio economical development of these communities exclusively.

Profile of Scheduled Castes in Madhya Pradesh

Madhya Pradesh is the state having an area of 3,08,800 sq km and population of 7.26 crore (census 2011). Madhya Pradesh is the 8th largest state in India having 1.13 crore (15.5 per cent) Scheduled Caste population. The decadal growth of Scheduled Caste population is 23.9 per cent. Forty eight castes are notified in the state. Out of the total Scheduled Caste population 72.9 per cent are rural and 27.1 per cent are urban by habitat (census 2011).

Literacy– Madhya Pradesh and India

Literacy and education are important indicators in a society and play a central role in human development. The present literacy rate of the state is 69.3 per cent and the national literacy rate is 73.0 per cent (census-2011). The same is depicted in the following table:

Table 2
Total Literacy rate of India and Madhya Pradesh: 2001 and 2011

	India			*Madhya Pradesh*		
	2001	*2011*	*Difference (2011-2001) (% of diff.)*	*2001*	*2011*	*Difference (2011-2001) (% of diff.)*
Persons	64.8	73.0	+ 8.2 (12.7%)	63.7	69.3	+ 5.6 (8.1%)
Males	75.3	80.9	+ 5.6 (7.4%)	76.1	78.7	+ 2.6 (3.3%)
Females	53.7	64.6 (20.3%)	+ 10.9	50.3	59.2 (15.0%)	+ 8.9

It is evident from the above table that during the last decade the increase in female literacy was higher than their male counterparts both at national (Females-20.3 per cent, Males-7.4 per cent) and sate level (Females-8.9 per cent Males-3.3 per cent).

As the caste wise literacy rate of Madhya Pradesh is not yet been published by the Census, to know literacy status of Scheduled Castes and total literacy of the state and the country we have to take help of census 2001.

Table 3
Literacy–India and Madhya Pradesh (2001)

	Madhya Pradesh						India					
	Total Literacy			SC Literacy			Total Literacy			SC Literacy		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Total	63.7	76.1	50.3	58.6	72.3	43.3	64.8	75.3	53.7	54.7	66.6	41.9
Rural	57.8	71.7	42.8	55.4	69.7	39.4	58.7	70.7	46.1	51.2	63.7	37.8
Urban	79.4	87.4	70.5	68.0	80.1	54.7	79.9	86.8	72.9	68.1	77.9	57.5

Source: Census 2001

It is clear from the above table that total literacy rate in Madhya Pradesh as per census 2001 is 63.7 and that of SC's is 58.6. Where as at national level the total literacy is 64.8 and that of SC's is 54.7. Thus literacy among SC's in the state is still less than the national average. Both at State and National level, Rural female literacy is less than total Rural literacy. There is a sharp difference between the urban total female literacy and Urban SC female literacy at State level (70.5and 54.7 respectively) and same is the scenario at national level (72.9 and 57.5 respectively).

Educational development of SCs in India

Following are some of the major educational development of SCs:

- Admission/ Tuition fees are exempted in KVs up to Class XII, for SC students. They are given concession in fees in National Institute of Open Schooling (NIOS).
- The SC students are given concessional fees to the extent of ₹ 450/- for Secondary Courses and ₹ 525/- for Senior Secondary courses.
- Under the Scheme of "Strengthening of Boarding and Hostel facilities for Girls students of Secondary and Higher Secondary Schools", 100 per cent financial assistance is given to voluntary organisations to improve enrolment of adolescent girls belonging to weaker sections.
- NCERT operates "National Talent Search Scheme"– 1000 Scholarships in Science and Social Science up to doctoral level, in medicine and engineering courses up to second degree level,

are being offered. Among these, 150 and 75 are reserved for SC and ST students respectively.

- Educational development of SCs is major concern of National University of Educational Planning and Administration (NUEPA).

UGC

(a) Provides financial assistance for the establishment of SC/ ST cells in Universities for the implementation of reservation policy,
(b) Issues guidelines for the implementation of the reservation policy,
(c) Provides financial assistance for coaching facilities to prepare for NET conducted by UGC/ CSIR,
(d) Introduced "Remedial Coaching Scheme" at UG/ PG level for under privileged students to improve academic skill and comprehension of basic subjects,
(e) Created a Central Pool Data base for SC/ ST candidates.
    - The Scheme of "Community poly techniques" (since 1978-79) undertakes rural/ community development activities through application of S& T.

Engineering Colleges: The higher educational institutions administered by the Central Govt. including IITs, IIMs, National Institutes of Technology, NLUs etc. provide reservation to the extent of 15 per cent and 7.5 per cent for SC and ST students respectively.

Reservation Policy

Reservation in India is a form of affirmative action designed to improve the well-being of peoples of deprived classes, wherein a certain percentage of total available vacancies in educational institutes and government jobs are set aside for people from these communities. Scheduled Castes, Scheduled Tribes and Other Backward Classes are the beneficiaries of the reservation policies under the constitution. The reservation system has received a mixed response from Indians since its inception. It has been praised for diminishing the gap between the upper and lower castes by allowing the latter to enjoy the further increased opportunities as the former in jobs, education and governance by allotting seats exclusively for them. It has also been criticised for discouraging merit-based system (Wikipedia).

According to a recent survey conducted by Human Resource Development, GOI, the percentage of students from SC Communities enrolled in higher education is only 10.2 per cent of the total enrolment (All India Survey on Higher Education-2012).

The debate (Manoj Joshi, 2006 Guru Charan Das, 2006, Arindam Choudhary, 2006 and Malay Choudhary, 2006) on reservation policy also extracted the fact that the students of weaker section should be provided with all facilities in the early stages of schooling so that they may be at par with general candidates, when grow up. Thus special attention must be given, while providing school education to the students of weaker sections (Arindam and Malay Choudhary 2006) some of them are:

- A healthy environment and all possible facilities should be provided to these students.
- Special attention must be given to improve the academic skills, linguistic proficiency and level of comprehension in various subjects.
- Besides normal diet, nutritious food should be provided to them, so that they may became physically and mentally strong enough to compete with the students.
- Rich library should be provided so that self-learning habit should be inculcated in them.
- All possible facility should be provided to meritorious students of these sections.

To fulfill such provisions the State Government felt that the students of weaker section should be provided with all facilities in the early stages of schooling so that they may be at par with general candidates.

Educational Initiatives taken by Madhya Pradesh for the upliftment of SCs– Residential Schools for SC students.

Madhya Pradesh has launched a large number of innovative schemes to promote education especially among the poor and deprived. Educational development of SCs is a major concern of Scheduled Caste Welfare Department, Madhya Pradesh. The department is running various schemes for the upliftment of SCs. In Madhya Pradesh, Scheduled Caste Welfare Department started Residential Schools for Scheduled Caste students at seven divisions with the logic of providing a healthy environment, nutritious foods, rich library, infrastructural facilities and to provide an environment which is more conducive to learning. They are opened in Bhopal, Gwalior, Ujjain, Indore, Jabalpur, Rewa and Sagar in the year 2003-04. The main objective of these Residential Schools is to provide quality education for Scheduled Caste students and to provide them all possible facilities free of cost.

Some of the specific features of the scheme of Residential Schools at Divisional Head Quarters are:

- These Residential Schools were established in seven divisional head quarters. (These institutions are besides the hostels and ashram run by the department). These institutes have classes from 6th to 12th. The total number of seats sanctioned in each of these institutes is 280 (140 for boys and 140 for girls). The maximum strength in each class is kept ideal as 40. Students admitted in these schools are provided with stipend of ₹ 500/- per month and ₹100/- per month for nutritious food. ₹ 2000/- per month is provided to each residential school as contingency expenditure. ₹ 30,000/- per year per school is allotted for library, There is also provision for computer education.
- Minimum 60 per cent mark is required in previous board examination for admission. Scheduled Caste students were given admission to these schools in class 6th, 9th and 11th on the basis of the merit list, based on marks obtained in the previous class and marks obtained in the entrance test.
- A committee headed by the Divisional Deputy Commissioner, Tribal welfare supervises the management of these schools.

Though the scheme was introduced in 2003-04 and more than 10 years have passed, no systematic and scientific effort has been made to find out the effectiveness of the scheme. A look at different reference materials and Government report reveal that so far no study is conducted by either Government or private agency at any level and at any point of time. Thus there is an urgent need to undertake an evaluation study of the effectiveness of Residential Schools for Scheduled Caste students in Madhya Pradesh. Therefore, following problem statement was specifically framed for the study.

"A Study of Academic and Infrastructural Input and achievement of Scheduled Caste Students of Residential Schools of Madhya Pradesh"

The study, is hoped, will not only provide the status of the scheme but will also contribute for the betterment and further impetus to the scheme.

Objectives of the Study

Investigator laid following objectives for the present study:

1. To study the status of Academic Inputs of residential schools (Sambhagiya Awasiya Vidyalaya) in terms of the following:
   - Duration of Teaching

- Number of working days
- Teacher student ratio
- Teachers qualification
- Teachers experience
- Government Assistance

2. To study the status of infrastructural facilities of Residential Schools (Sambhagiya Awasiya Vidyalaya) of Madhya Pradesh.
3. To study the reaction of students and teachers towards academic inputs provided and infrastructural facilities available in Residential Schools (Sambhagiya Awasiya Vidyalaya) of Madhya Pradesh.
4. To study the outcome of schooling in terms of Achievements of students of Sambhagiya Awasiya Vidyalaya of Madhya Pradesh.

Delimitations of the study

The present study was delimited to:
1. Achievement of learners is limited to 2007 to 2009.
2. The academic and infrastructural inputs of Residential Schools were measured from 2007 to 2009.

Methodology

The methodology used in conducting the study is discussed under the following topics:

Design of the study

The design of the present study was Descriptive Survey.

Sample

The sample of the study comprised of seven principals, 59 teachers and 209 students. The details are as follows:
1. Residential School scheme for Scheduled Caste students in Madhya Pradesh is implemented through seven residential schools (Jabalpur, Indore, Ujjain, Gwalior, Rewa, Sagar and Bhopal) situated in seven divisional head quarters of Madhya Pradesh. The present study comprises all the seven Residential Schools (Sambhagiya Awasiya Vidyalaya) opened for Scheduled Castes by Government of Madhya Pradesh. They are situated in seven divisional head quarters of Madhya Pradesh.

The duration of the study was from 2006-07 to 2008-09.To further select appropriate sample for the study from these above residential schools, following consideration were made.

(a) Since in the present study besides academic and infrastructural input, achievements of students of Residential Schools are also included, the learners of class 12th were chosen for the study.

(b) To know the reactions of learners towards academic and infrastructural input all learners studying in 12th class in academic year 2007-08 and 2008-09 were included in the study.

(c) To study academic inputs, infrastructural facilities provided and achievement of students data for three consecutive years were collected.

Tools

As per the objectives of the study, for knowing the infrastructural facilities available, academic inputs and reaction of teachers and students following questionnaires were designed by the researcher for the present study:

- Questionnaire for Principals
- Questionnaire for Teachers
- Questionnaire for Students

These questionnaires were designed and developed looking into the need of the content. These questionnaires were also validated with the help of principal and teachers of one of the residential schools for the authenticity of the content and language of the tool before actual use.

Marks obtained by the learners in higher secondary school certificate examination (12th), conducted by Board of Secondary Education Madhya Pradesh was taken as achievement of learners in the present study. Subject wise marks scored by each student of all Residential Schools for three consecutive years were collected from all residential schools.

Data collection and Administration of Tools

Data were collected through survey in all Residential Schools. For administration of tools the investigator personally visited these schools, established rapport with Principals, teachers and learners. Explained the purpose of the study and administrated the tools. Information was collected from principals, teachers and learners of all schools.

Analysis of Data

The data were scrutinised and put in a tabular form. The descriptive statistical technique (frequency distribution and percentage) was used for analysis of data. To analyse the reactions of students and teachers inferential statistics of Chi-square test was employed.

Findings

Findings of the study are presented under the following headings

1. Academic Inputs

a. The duration of teaching varied from 32.4 to 44 hours per week from school to school and year to year.

   This variation may be because of following reasons:
   - Variation in duration of single period/class.
   - Adjustment of time for organising two shifts.

b. In the session 2008 and 2009, in all the seven schools the numbers of working days were six days in a week.
   In Residential School Rewa, only in the year 2007, the working days were 5.5 days (as one day was half day because of the local weekly market day).

c. Teacher student ratio varied from 1 to 5 teachers per student in different schools and across the three year duration of the study.

   The variation in the teacher student ratio may be due to the following reasons:
   - Residential Schools started without sanctioned permanent post of teachers.
   - The actual posts of teachers sanctioned in these schools were of *Shiksha Karmi* and *Samvida Shikshak* (para teachers). They leave the school whenever they get a better opportunity, The salary of these posts is not attractive at all. In some schools teachers of other departments managed to get posting on deputation.

d. The findings about the qualifications of teachers are as follows:
   - The percentage of trained teachers varied from 62.2 per cent to 65.9 per cent during the study period.
   - Similarly the percentage of untrained teacher varied from 34.1 per cent to 37.9 per cent.
   - The percentage of post graduate teachers varied from 86.7 per cent to 93.3 per cent.

- The percentage of graduate teachers varied from 9.1 per cent to 13.3 per cent in the study period.
  The above mentioned variation in teachers' qualifications may be due to the same reason described in sub objective (c) above.

e. Regarding experience the status was as shown below:
   39 per cent of teachers have more than 10 years teaching experience
   27.1 per cent teachers have less than two years experience.
   This variation in experience may be due to :
   - Teachers who are on deputation have higher teaching experience.
   - *Shiksha Karmi/Samvida Shikshak* have very less or almost no experience.

f. Following government assistance were provided to students of Residential Schools:
   - All students of residential schools are getting same amount of stipend.
   - Besides stipend, the learners of these schools are getting ₹2000/- per year for contingency expenditure. This contingency expenditure help them in getting stationery, uniforms etc.

2. Infrastructural Facilities

a. Infrastructural facilities available in these schools are not satisfactory, especially library, laboratory, playground, common rooms for girls, teaching aids and quarters meant for teachers.
   - The available infrastructure is not able to meet all the requirement of the schools.
   - There is a need to provide more infrastructural facilities in Residential Schools. This will improve the quality of education, being provided in these schools.

Reaction of Students and Teachers

For analysing the reaction of students and teachers descriptive statistics of frequency, percentage and inferential statistics of Chi-square test were employed.

A. Reaction of Students

1. Students agree that infrastructural facilities provided in Residential Schools are not sufficient. Following may be the reasons:

- Most of the Residential Schools were running on rented buildings or some other Government institutions.
- Most of the schools lack facilities of library, laboratory, play ground etc.

There is a need to provide adequate infrastructural facilities in these schools.

2. Students agree that the teachers posted in Residential Schools are not sufficient according to the subjects and number of students. The reasons may be:
   - Full time teachers are not sanctioned in these schools.
   - The *Shiksha Karmi/Samvida Shikshak* appointed in these schools may not be according to subjects.

   There is a need to appoint subject wise teachers according to the number of students admitted in these schools.
3. Students of Residential School agree that they are motivated to learn by Scholarship. The reasons may be:
   - Most of the students belong to low SESS category.
   - Thus free schooling and stipend might be a motivating factor for the students of Residential Schools to learn.
4. Students of Residential Schools agree that the amount of scholarship given to students is not sufficient.
   - Scholarship amount provided to students are not very attractive.
   - Only ₹ 250/- pa for boys and ₹ 260/- pa for girls is provided at present.
   - This amount is quite meager and need to be enhanced for meet with the present day requirement.
5. Students agree that the amount provided as stipend to the learners residing in hostels is not sufficient to meet out their needs.
   - ₹ 700/- pm is given to students to meat out the expenditure of mess and nutritive food in residential schools.
   - This amount is less and need to be enhanced to meet with the present day requirement.
6. The students agree that facilities available in hostels of Residential Schools are not sufficient.
   - Hostels in most of Residential Schools were running in rented buildings or alternative arrangements have been made.
   - Due to this reason, all facilities could not be made available in these hostels by the Government.
   - These hostels need to be upgraded to suit the requirement of the learners residing in it.

B. Reaction of Teachers

1. Teachers of Residential Schools opined that there is no need to increase the duration of teaching in schools. The reasons may be:
   - Most of Residential Schools have seven periods of 40-45 minutes in a day.
   - Thus teachers of the Residential Schools are of the opinion that there is no need to increase the duration of teaching.
2. Teachers of Residential Schools agree that working days of Residential Schools are sufficient. The reasons may be:
   - The working days are six days a week.
   - This is the maximum possible working days.
   - Thus working days in Residential Schools are sufficient.
3. The teachers of Residential Schools agree that the number of teachers is not sufficient according to the number of students. The reasons may be:
   - Due to the policy of appointing *Samvida Shikshak*, some schools may not be having sufficient number teachers.
   - More teachers are to be posted in Residential Schools.
4. The teachers of Residential Schools agree that the amount of scholarship/stipend provided to the learners of Residential Schools is to be increased. The reasons may be:
   - The prices of all commodities have been increased,
   - Thus there is a need to increase the rate of stipend and scholarship.
5. In the opinion of teachers, teachers of Residential Schools are well qualified.
   - The same is also revealed in objective 1 of the present study.
   - 86.7 per cent to 93.3 per cent teachers teaching in Residential Schools were post graduate.
6. In the opinion of teachers, teachers teaching in class 12th of Residential Schools are experienced.
   - But data regarding experience of these teachers shows a different story.
   - Only 39 per cent teachers are with more than 10 years of experience.
7. The teachers agree that the class rooms available in Residential Schools are not sufficient. The reasons may be:
   - Most of Residential Schools were running in rented buildings or some other buildings.
   - The class rooms needed for these schools are insufficient.
   - This also matches with finding of objective 2 of this study.

8. The teachers agree that the students are not benefiting from the library.
   - Most of the Residential Schools don't have library.
   - There is a need to provide library facility in Residential Schools.

   The same is also revealed under objective 1 of the present study.
9. The teachers agree that there is sufficient arrangement of drinking water in Residential Schools.
10. The teachers agree that Quarters are not allotted to them.
    - Most of the teachers have not allotted government quarters in school premises.
    - There is a need to provide government quarters to teachers.

C. Achievements of students of Residential Schools of Madhya Pradesh.

The findings revealed that:

- Overall results of Residential Schools in the year 2007, 2008 and 2009 were 75.2 per cent, 86.9 per cent and 86.6 per cent respectively.
- The maximum percentage of learners who have scored above 79 per cent is 6 per cent through out the study period.
- In the year 2007, 37 per cent learners of Residential Schools scored marks between 45 per cent and 59 per cent.
- In 2008, 42 per cent learners scored marks between 60 per cent and 69 per cent. In 2009, 50 per cent learners passed with marks between 60 per cent and 69 per cent. Thus the percentage of learners passing in higher marks range increased during the study period.
- Students mainly failed in Physics, Chemistry, Mathematics and General English.
- It seems that with the execution of the scheme, year by year there is an improvement in the result of Residential Schools.

Conclusion, Discussion and Suggestions

- There is a need to provide better infrastructural facilities as these infrastructural facilities contribute significantly in creating better learning environment and foster the learning of the student.
- It is revealed that either there are no laboratories or they are not well maintained. To enhance the effectiveness of learning, laboratory is one of the important activity places for students.
- Achievements of students in subjects like Physics, Chemistry, Mathematics and General English are not good. This requires proper care on the part of subject teachers.

- Concept of remedial teaching or extra coaching may be introduced in these schools especially for students who are poor achiever in these subjects.
- Presently very less amount of scholarship/stipend is given to the students. Looking into the need of the hour there is a need to increase the stipend/scholarship. Scholarship/Stipend should be increased so that it may work as an incentive for Scheduled Caste students.
- As per the provision of the scheme, *Shiksha Karmi/Samvida Shikshak* is to be employed in Residential Schools for teaching purpose. It has been observed that these teachers do not think of accountability, which in turn affects their performance in the classroom. It would be much better if provisions are made to appoint regular teachers in Residential Schools under the scheme instead of *Shiksha Karmi/Samvida Shikshak*.
- As per the provision of the scheme teachers are to be provided residential quarters in the premises of Residential Schools. There is a shortage of residential facilities for teachers. Efforts should be made to construct and allot residential quarters in the campus for teachers of these schools.

Overall it is revealed in the present study after the introduction of this Residential School scheme, the level of achievement of students of these school is improving. There is a need to continue such schemes; if possible this scheme may be further strengthened.

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Defence Mechanism Styles and Personality Types among Adolescents

REENA GEORGE*

ABSTRACT

Defence mechanisms are behavioural strategies adopted by an individual to reduce anxiety and enhance one's sense of well-being. They establish illusory mastery over perceived threats, when real mastery is impossible. The defence mechanism style adopted by an individual may be influenced by one's personality. In the present study, five defence mechanisms styles viz., Aggressive, Projective, Intellectualising, Intrapunitive and Repressive, were analysed in relation to the Personality Types viz., Type-A and Type-B, among adolescents studying in the secondary and higher secondary schools of Kerala. The findings revealed that adolescents belonging to different Personality Types adopt significantly different styles of defence mechanisms. Adolescents having Type-B Personality were found to adopt 'Intellectualising Style' and 'Repressive Style', whereas adolescents belonging to Type-A Personality adopted 'Aggressive Style', 'Projective Style' and 'Intrapunitive Style'.

Introduction

Often when we cannot solve our problems effectively we employ a variety of defence mechanisms toward off intense states of panic or a further build-up of anxiety. These, defence mechanisms allow negative feelings to be lessened without an alteration of the situation that is producing them, often by distorting the reality of that situation in some way. The primary function of defence mechanisms is to ease the acute discomfort of the emotions associated with frustration and unresolved motivational conflict (Coleman, 1960). Defence mechanisms do not eliminate the causes of strain, but rather they help us to cope up with the emotional pain caused by that strain.

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They often leave the underlying causes of strain and the accompanying emotional reactions untouched. Thus, defence mechanisms are only psychological or behavioural devices adopted to alleviate or avoid anxiety associated with strain.

Significance of the study

Defence Mechanisms are the means by which we adapt to the stresses of daily living. People are extremely sensitive to threats to their ego or self-esteem. They erect barriers to protect themselves from external threats, such as failures and disappointments and internal threats such as guilt-arousing desires or behaviour, personal limitations, and real or imagined feelings of inferiority. Freud (1933) called these barriers as 'defence mechanisms', which are unconscious strategies for avoiding or reducing threatening feelings, such as fear and anxiety. Gleser and Ihilevich (1969) defined defence mechanisms as unconsciously motivated, involuntary reactions that are activated whenever perceived threats are too painful to confront consciously. Often several defence mechanisms operate together to achieve a combination of many different forms of behaviours, attitudes, motives and emotions that characterise a particular defensive style. The defensive responses to conflict/threats into five styles of defence mechanisms viz., Aggressive Style - which involves the expression of direct or indirect aggression; Projective Style - which involves the attribution of negative intent or characteristics to others without any evidence; Intellectualising Style - which falsifies reality by reinterpreting it through the use of a variety of general principles; Intrapunitive Style - which includes all intrapunitive attempts employed to falsify reality for the purpose of reducing perceived threats to one's self-esteem and Repressive Style which involves responses to internal or external threats, usually expressed in exaggeratedly cheerful emotions, and unduly positive behavioural responses. The study of defence mechanisms has been a popular theme for research abroad. The present study intends to compare the adolescents belonging to Type A Personality and Type B Personality with respect to the Defence Mechanism Styles adopted by them.

Procedure

The sample for the study, selected through 'Stratified Random Sampling Technique', giving due representation to age, gender and locale, comprises of 1000 secondary school students, and 500 Higher

Secondary school students of Kerala. The tools used for data collection are Defence Mechanism Styles Inventory and Personality Type Inventory.

Analysis and Interpretation

Analysis of data to identify the defence mechanism styles of adolescents in the Secondary and Higher Secondary Schools of Kerala revealed that adolescents in the age group 13-17 adopt different styles of defence mechanisms. The defence mechanism styles adopted by adolescents, given in the order of preference, are Intellectualising Style (M=25.27; ? =3.09), Repressive Style (M=23.56; ? =5.28), Projective Style (M=19.22; ? =3.48) Intrapunitive Style (M=17.84; ? =2.75), and Aggressive Style (M=15.64; ? =4.77). Investigation of the Personality Types of adolescents revealed that 21.87 per cent (N1=328) possess Type-A Personality and 78.13 per cent (N2=1172) possess Type-B Personality.

The adolescents belonging to Type-A Personality and Type-B Personality were compared to find out whether the groups differ significantly with respect to the five styles of defence mechanisms adopted by them. The two groups were compared by computing Critical Ratios for each style of defence mechanisms. viz., Aggressive, Projective, Intellectualising, Intrapunitive and Repressive. The details of the comparison are presented in Table-1.

Table 1
Defence Mechanisms Styles of Adolescents with Type-A and Type-B Personality

	Personality Types				
	Type-A (N_1=328)		*Type-B (N_2=1172)*		
Defence Mechanism Styles	***M1***	***1***	***M2***	***2***	***Critical Ratio***
Aggressive Style	14.31	4.16	13.07	3.5	4.93**
Projective Style	19.01	3.42	18.23	3.08	3.73**
Intellectualising Style	22.16	3.93	23.01	3.4	3.56**
Intrapunitive Style	18.13	3.03	17.11	2.9	5.44**
Repressive Style	23.32	4.20	24.81	3.66	5.83**

*** Significant at 0.01 level*

The critical ratios reveals significant difference between the subsamples of adolescents having Type-A Personality and Type-B Personality with respect to all the five styles of defence mechanisms viz., Aggressive Style (C.R=4.93; P<.01), Projective Style (C.R=3.73; P<.01), Intellectualising Style (C.R=3.56; P<.01), Intrapunitive Style (C.R=5.44; P<.01) and Repressive Style (C.R=5.83; P<.01). Thus there

is significant difference between adolescents belonging to Type A Personality and Type B Personality with respect to the Defence Mechanism Styles adopted by them. Further adolescents with Type-B Personality is found to have higher mean scores for 'Intellectualising Style' (M=23.01) and 'Repressive Style' (M=24.81), than adolescents with Type-A personality. Whereas adolescents having Type-A Personality have higher mean scores for 'Aggressive Style' (M=14.31), 'Projective Style' (M=19.01) and 'Intrapunitive Style' (M=18.13) than adolescents with Type-B personality.

Implications

The findings of the study revealed that there is a significant difference between adolescents belonging to Type A and Type B Personalities with respect to the Defence Mechanism Styles adopted by them. Adolescents with Type-B Personality adopted Intellectualising and Repressive styles, whereas adolescents with Type-A Personality adopted Aggressive, Projective and Intrapunitive styles, which are unhealthy. The findings of the study imply the need for conscientising adolescents regarding the consequences of adopting unhealthy defence mechanisms and educate them to practice healthy styles of defence mechanisms. The study also recommends Conflict Management Programme for adolescents in the Secondary and Higher Secondary Schools of Kerala.

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Effect of Parental Support on Curiosity of School going Children

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ABSTRACT

The present study examined the impact of parental support on curiosity of school going children. By adopting the principle of stratified proportionate random sampling technique, three hundred school going children(19-14 years) were selected from various higher secondary schools as sample from Durg district of Chhattisgarh. Standardised tools used were parental support scale developed and standardised by Nandwana and Asawa (1971) and children's curiosity scale developed and standardised by Kumar (1992). For the statistical analysis of data three way ANOVA was computed. The study revealed significant main effects of Parental support and gender on children curiosity but the main effect of type of school was found not to be significant at 0.05 levels. Interactional analysis indicated significant first and second order interaction effect of parental support, gender and type of school which were found to be significant at 0.01 level of significance.

Introduction

Curiosity can be interpreted as an individual's drive and readiness to seek out and resolve conceptual conflict (Beswick and Tallmadge, 1971). Berlyne, 1960, Day et al, 1972 defined curiosity as a state of increased arousal response, promoted by a stimulus high in uncertainty and lacking in information, resulting in exploratory behaviour and the search for information. Voss and Keller (1983) stressed that curiosity and the exploratory behaviour is important to human development because it assist in the flexible adaptation to changing environmental conditions and implies a direction of development toward differential interaction patterns and more

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effective problem solving. Maw and Maw (1961) found that highly curious children remembered what they learned longer and learned more from a given exposure to information than less curious children. Curious youngsters achieve better than students with lower curiosity levels because of their exploration of events and objects for longer periods of time and their use of many more senses. (Koran and Longino, 1982)

Positive parenting practices such as supporting children's curiosity and expressing affection for the child are linked to their capacity to self regulate their behaviours and emotions, as well as to their cognitive and intellectual development (Deckard and Detrill, 2004). Parents have both the opportunity and responsibility to nurture their children. (Hartog and Brosnan, 1994). If children were allowed to be curious and to use their initiatives in pursuing curiosity, they would be more likely to construct knowledge and go on constructing it. (Kamii and Daries, 1933). Children's creativity is based on their natural inclination to look at the world with wonder and curiosity. If curiosity is discourage as child's curiosity with judgment and criticism, the child eventually learns to mask this trait. (Lampikouski and Emden, 1996).

Parental reinforcement and modeling foster children's curiosity and exploration (Saxe and Stollak, 1971). Vidler (1977) found that boys and girls explored novel materials equally often, frequencies with which the mothers showed exploratory behaviour, curiosity orienting behaviour and question answering were all correlated with children's exploration and question about the stimuli. Children who are thwarted are hesitant to explore novel stimuli. Hunter, Ross and Ames (1982), Dooley (1921) noted negative impact on curiosity of poor care giving, parents failure to meet their needs at the critical time.

Some factors effect parental support like Weiss et al. (2003) showed how employment can serve as on obstacle to parental involvement in their child's education. Symeou (2007) demonstrated how socio economic status can facilitate and structure parental participation.

There is difference in public and private schools in terms of subject availability, strictness of discipline, quality of facilities, academic achievement and the likely implications for their children's career opportunities. Private schools generally have better teachers and deliver a better education, smaller classes and provide more individual attention to students. Watts (1997) has revealed that a

teacher centred classroom prevents students from exploring information and thinking creatively and reflectively. Research show that children come to school with many questions, but in time their curiosity dies and they become silent listeners (Holt, 1982). Curiosity is an active component in learning with understanding. Children are curious about the world around them, school environment need to construct personal understanding in a setting that encourages and nurtures questioning (Harlen, 1992) creating a friendly environment and appreciating students efforts, helped students to overcome their fear of being worn and nurtured their innate curiosity (Biddulph and Carr, 1992). In the present study attempt has been made to study the effect of parental support, gender and type of school on curiosity of school going children.

Problem and Hypothesis

(1) To study the effect of parental support on the curiosity of school going children.
"There will be significant effect of parental support on the curiosity of school going children."
(2) To study the effect of Gender on the curiosity of school going children. "There will be significant effect of gender on the curiosity of school going children."
(3) To study the effect of type of school on the curiosity of school going children.
"There will be significant effect of type of school on the curiosity of school going children."

Research Methodology

Survey model was adopted for the present study.

Participants

By adopting the principle of stratified proportionate random sampling technique three hundred school going children belonging to the age group ranging from 9-14 years were selected as sample from various higher secondary schools of Durg district of Chhattisgarh.

Measures

Standardised test adopted for the study were parental support scale developed and standardised by Nandwana and Asawa (1971) and

Children's curiosity scale developed and standardised by Kumar (1992). This scale is meant for school going children of 9-14 years of age. It consists of forty four items with four response alternation. Analysis of data was done by computing three way ANOVA.

Procedure

Scores obtained on parental support scale were categorised into low, average and high parental support by computing quartile. Study was conducted on extreme groups' only i.e. low and high parental support. The sample size got reduced to one hundred twenty four.

Result and Discussion

Table no. 1 Summary of Anova

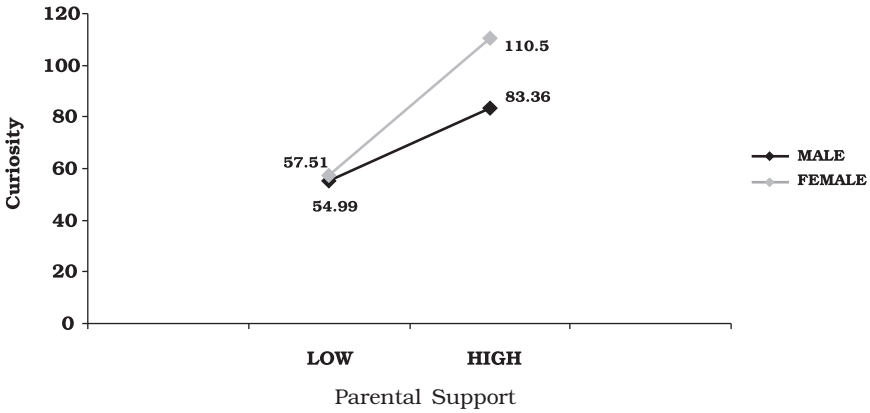
Source of Variance	*SS*	*df*	*MS*	*F-Ratio*	*Level of Significance*
PS	14410.4	1	14410.4	969.48	S**
G	3466.72	1	3466.72	233.22	S**
TOS	48.265	1	48.265	3.24	NS
PS x G	53853.06	1	53853.06	3623.05	S**
PS x TOS	2043.07	1	2043.07	137.45	S**
G x TOS	2807.98	1	2807.98	188.91	S**
PS x G x TOS	7842.45	1	7842.45	527.61	S**
Within	1739.18	117	14.864		
Total	86211.125	124			

S** Significant at 0.01.

Table no.1 shows that the main effect of variables such as parental support ($F=969.48$, $P<0.01$) and gender ($F=233.22$, $P<0.01$) was found to be highly significant which indicates significant individual effect of parental support and Gender on children's curiosity. This finding corroborates the findings by earlier researches of saxe and stollak (1971); Dooley (1921) that parental reinforcement and modeling foster children's curiosity. The result further show that type of school whether government or private schools imparts no significant effect on curiosity of children, but contrary to it most of western previous findings, claimed that school environment and appreciating student efforts nurture their innate curiosity. (Holt,1982; Watts,1997; Harlen,1992; Biddulph and Carr,1992)

Findings of Interactional Analysis

Table no.1 reveals that the interactional effect of parental support and Gender (F=3623.05,p<0.01) was found to be significant, Findings indicate significant interactional effect of parental support and Gender on children's curiosity.

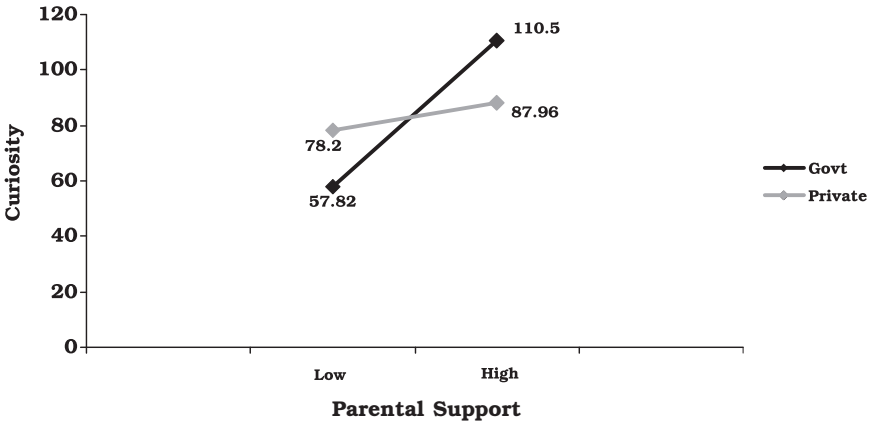


Graph No 1: Showing Interaction Effect of Parental Support and Gender

Graph no.1reveals that the mean curiosity score of male and female children with high parental support do differ significantly from their counterparts with low parental support. This finding is supported by the findings of Hunter, Ross and Ames (1982); Vidler (1977). Further on examining mean curiosity score it was found that female students are more curious than male students. In patriarchal form of society, girls are mostly suppressed, with parental support in the form of resources, advice, social contacts, values etc. they show more exploratory behaviour, competences and other skills (Badony, J.2000)

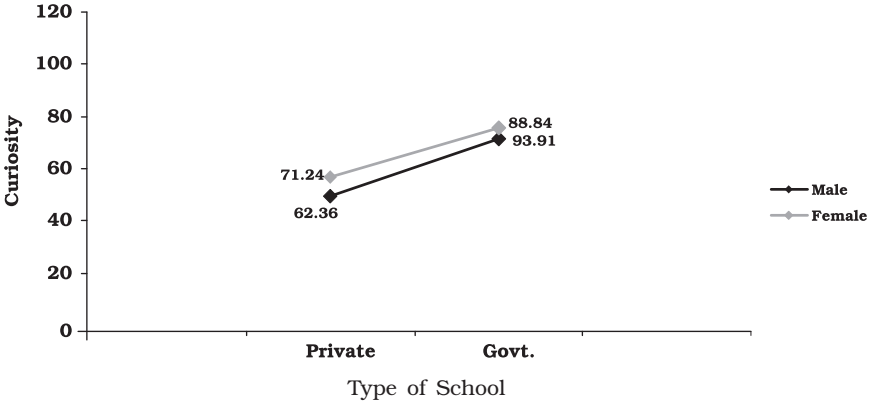
The data in Table No.1 shows that there is significant interaction effect of parental support and type of schools (F=137.45, p<0.01) on children curiosity.

Graph No. 2 reveals that the mean curiosity scores of children studying in government and private schools having high parental support were significantly higher than their counterparts having low parental support. The same is reported by Deckard and Detrill (2004), who found positive correlation between parental support and children's curiosity. Mean curiosity score further indicates that government school children with high parental support are more



Graph No. 2: Interaction Effect of Parental Support and Type of School

curious than their counterpart studying in private schools. The result further shows that there is significant interaction effect of Gender and Type of Schools (F=188.91, p<0.01) on children's curiosity.

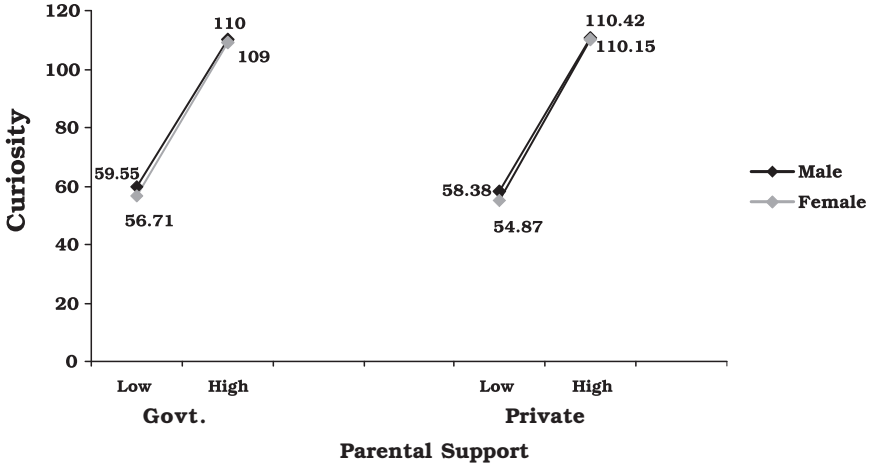


Graph No. 3 : Interaction Effect of Gender and Type of School

Mean curiosity scores depicted in Graph No.3 shows that children of government schools are more curious than private school children. On further examining the mean curiosity scores it was found that female children are more curious than male children. But contrary to this George and Monsaas (1988) reported that their exist no difference in curiosity of male and female students.

The data demonstrated in Table No.1furthur indicates significant interaction effect of parental support, Gender and Type of School

(F=527.61, p<0.01) on children curiosity, which indicates positive influence on children's curiosity.



Graph No. 4 : Interaction Effect of Parental Support, Gender and Type of School

Graph No.4 reveals that the mean curiosity score of male and female children studying in government and private schools with high parental support are more curious than their counterparts having low parental support. This study is supported by the findings of Bowlby, (1973); Mikulineer, (1997) that caregiver's availability, their attachment and support provides security to explore the environment. Low parental support might be due to low socio economic status of parents. Symeou (2007) found that socio economic status facilitate and structure parental participation.

Conclusion

This study found that the main effect of variables such as parental support and Gender have significant influence on children's curiosity. But the main effect of type of school had no significant impact on children's curiosity. Findings further reveal significant first and second order interaction effect of parental support, Gender and Type of school on children's curiosity. All these result proved a positive impact of parental support on children's curiosity.

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How Proficient are Class V Students in Language?

SANTOSH KUMAR*, MAMTA AGARWAL** AND MANIKA SHARMA***

ABSTRACT

National Council of Educational Research and Training conducted the National Achievement Survey at Class V in the year 2010 to find out the achievement level of students in different subjects (Language, Mathematics and Environmental Studies). In this paper the achievement of students in language especially in reading comprehension has been presented. The tests used for measuring the achievement consisted of three booklets containing different kinds of reading texts with multiple choice items on each text. The items were spread across the whole range of cognitive processes involved in reading comprehension. The responses of students to the various items were analysed using Item Response Theory.

The paper shows how the Class V students performed on the reading comprehension items of various different levels and testing various reading abilities. It was found that Class V students in India are at different levels of language proficiency and that the teachers need to work on developing the competence of their students in reading different varieties of texts.

Introduction

This paper is based on the findings of the National Achievement Survey (NAS) of Class V students conducted in 2010 by the National Council of Educational Research and Training (NCERT) through its Department of Educational Measurement and Evaluation (DEME) (Singh, et al., 2012). The final report was published by NCERT and supported by SSA– Technical Cooperation Fund in 2012. The survey was conducted through tests and questionnaires administered to a

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sample comprising 1,22,543 students in 6,602 schools across 31 States and Union Territories (UTs). The subjects covered were Mathematics, Language (including Reading Comprehension) and Environmental Studies (EVS). In this paper the achievement of students in Language especially in Reading Comprehension has been focused.

Reading Comprehension

The reading comprehension tests given to Class V students consisted of three test booklets, each containing four reading passages with five multiple-choice items on each passage. The passages were chosen to represent a range of text types including informational passages, tables, public notices, and stories (Bhaduri and Singh, 2011). Three reading passages were common across all test forms. These served as 'anchors' so that the different test booklets could be linked together and, hence, all items could be placed on a common scale. In addition, each test form contained an extra, unique passage. Thus, altogether the reading comprehension instruments used in the survey comprised six passages with thirty items based on them.

The items were designed to test a range of relevant cognitive processes or 'reading skills'. These are classified as 'locate information', 'grasp ideas and interpret' and 'infer and evaluate' as defined in the box given below:

Cognitive Processes for Reading Comprehension

Locate information: In items testing this process, students need to find and extract a specific piece of information explicitly stated in the text. 'Locating' requires students to focus on a specific element of the given piece.

Grasp ideas and interpret: In items testing this process, students need to demonstrate that they have understood an idea being conveyed in the text and have interpreted it correctly. For example, students may need to identify the text's main idea and/or the sequence of events and/or relationships between ideas, events, or characters across the text. In addition, students may need to draw simple conclusions based on their interpretation of the text.

Infer and evaluate: In items testing this process, students need to demonstrate understanding beyond the information and/or ideas stated explicitly in the text. They are asked to read between the lines and, for example, make inferences about the qualities or actions of characters. They may be asked to identify the text's underlying theme and/or evaluate its title by examining the text from more than one perspective.

(Source: National Achievement Survey - Class V (2012))

Putting the reading comprehension items on a continuum of difficulty

The responses of students to the various items were analysed using Item Response Theory (Hambleton and Swaminathan, 1985). The three test forms were linked using the anchor items so that all items could be placed on a single reading comprehension scale comprising scores from 0 to 500. On this scale, the mean score was set at 250 with a standard deviation of 50. Calibrating the items according to their levels of difficulty places them on a continuum with the more demanding items at the top and the easiest items at the bottom. This continuum gave us a picture as to what students at different levels of language proficiency knew and could do.

The continuum for reading comprehension consisted of total thirty items. However, for the purpose of this paper only the scale values of fifteen anchor items are given. The scale score in the first column shows the level of difficulty for each item. The table also includes the cognitive process being evaluated and a brief description of what students needed to do to answer the item correctly.

Table 1 Continuum of Reading Comprehension

Scale Score	***Mental Processes***	***Question Description***
285	Grasp ideas/ interpret	Identify relationship between an abstract idea and a concrete phenomenon
279	Grasp ideas/ interpret	Use information from a notice to conclude timing of an event
279	Locate	Identify the correct place name from those given in the notice
274	Locate	Use information from a table to determine the frequency of an event
265	Grasp ideas/ interpret	Identify relationship between an object and its characteristics
264	Grasp ideas/ interpret	Determine the sequence of activities in a process
252	Grasp ideas/ interpret	Use information from the notice to derive the duration of an event
250	Locate	Use information from a table to determine the frequency of an event
246	Grasp ideas/ interpret	Use information to draw simple conclusion about the usefulness of an object

244	Grasp ideas/ interpret	Use information in the text to identify the ingredients of an object
244	Locate	Use information in a table to identify the most frequent event
231	Infer/evaluate	Use information from a notice to make a simple inference about the participation in a sport
217	Grasp ideas/ interpret	Recognise the text type as a notice from the format and the content
213	Locate	Use information in a table to identify the time for a phenomenon
203	Locate	Use information in a table to identify phenomena occurring at a particular time

(Source: National Achievement Survey - Class V (2012))

The table shows that Class V students demonstrate a wide range of ability in the domain of Reading Comprehension.

Students at the lower end of the scale i.e. those with scale scores in the range of, say, 200 to 240 can demonstrate all three cognitive processes–provided that the context is clear and the tasks non-complex. For example, they are able to use information from a table, to locate the time and the occurrence of a phenomenon and also recognise the text type.

Students performing in the intermediate range of the scale (say, 240 to 275) can do more. In addition to that described above, they can determine the frequency, duration and sequence of events described in a variety of texts. They can also identify relationship between an object and its characteristics, identify the ingredients of an object and can draw simple conclusions about the usefulness of an object.

Students performing at higher end of the scale i.e. those with scale scores above, say, 275 can do more. In addition to that described above, they can identify the correct place name and timing of an event from a notice and can also identify relationship between an abstract idea and a concrete phenomenon.

It may be mentioned here that the cognitive processes for reading comprehension as described above operate at all the three levels of language proficiency e.g. though locating information may be a very basic ability of reading, but it can also have a higher difficulty level depending upon the complexity of the reading text presented to the students. Similarly, inference is a higher reading ability but simple inference works at easy or basic level. Thus all the three cognitive

processes operate at all the three levels of difficulty i.e. basic, proficient and advance. The following table indicates that the item testing locating information with the scale value 279 is at a higher level of difficulty even though it just requires the students to locate a place name from the text. Similarly, the item testing inference with scale value of 231 is at the lower level of difficulty, though it requires the students to draw a simple inference about the participation in a sport.

What majority of students can and cannot do in different States of India?

It has already been mentioned what the students performing at different levels of the scaled scores of the reading comprehension items can do. One of the reading texts in the reading comprehension test was a notice which is generally put up in a school on the notice board. The purpose of this text was whether the Class V students were able to read and understand the information given in the notice. Five questions were asked in the test based on the notice. The questions tested various cognitive processes i.e., locating information, grasping ideas/interpreting, and inferring/evaluating. The performance of the students across the States/UTs on the five questions in terms of per cent correct is given in the following table.

Table 2: Percentage of Students doing the items correctly on Reading Comprehension (A Notice) across the states/UTs

States/UTs	*Locate*	*Grasp ideas/interpret*			*Infer/ evaluate*
	Item No. 5	*Item No. 1*	*Item No. 3*	*Item No. 4*	*Item No. 2*
Andhra Pradesh	46	68	31	49	54
Assam	43	60	36	55	49
Bihar	26	52	32	38	45
Chandigarh	25	63	37	41	58
Chhattisgarh	36	58	39	33	44
Daman & Diu	49	75	29	49	64
Delhi	47	74	50	54	60
Goa	30	57	35	47	62
Gujarat	51	66	33	51	70
Haryana	42	60	38	39	57

Himachal Pradesh	42	60	37	40	55
Jammu & Kashmir	42	62	43	58	60
Jharkhand	39	61	36	42	48
Karnataka	53	65	49	61	67
Kerala	29	87	57	50	66
Maharashtra	54	70	48	61	72
Meghalaya	26	59	33	42	53
Mizoram	29	77	52	42	70
Madhya Pradesh	49	65	40	51	61
Nagaland	36	56	35	52	53
Odisha	44	53	35	60	51
Pudducherry	29	45	17	30	47
Punjab	34	53	43	42	62
Rajasthan	51	64	44	54	65
Sikkim	20	52	23	45	55
Tamil Nadu	62	69	44	65	68
Tripura	44	66	43	54	57
Uttar Pradesh	63	74	61	69	73
Uttarakhand	41	54	34	38	49
West Bengal	52	60	41	56	58
Average (%)	41	63	39	49	58

Locate Information

Locating information from the given text is one of the very basic reading abilities. However, from the data, it can be seen that Class V students found it difficult to locate the name of the town from the notice as overall only 41 per cent students could do this correctly. The range of per cent correct was from 63 per cent for Uttar Pradesh to 20 per cent in Sikkim. Only in the states of Uttar Pradesh, Tamil Nadu, Karnataka and Maharashtra more than 50 per cent students could locate the correct information. One of the reasons for students' inability to answer this item may be that they didn't know how to read the given address.

Grasp Ideas/ Interpret

The data indicates that under the cognitive process of grasp/interpret overall 63 per cent students could recognise the text type as a notice from the format and the content. As far as the performance across

the states is concerned the range on this item was from 45 per cent in Puducherry to 87 per cent in Kerala. Only in Delhi, UP, Daman and Diu, Maharashtra, Kerala and Mizoram more than 70 per cent children were able to do this item correctly.

In the cognitive process of grasp/interpret, one item was to know whether the students could derive the duration of an event from the given information. To this item overall 49 per cent students were able to respond correctly. As far as the states are concerned Uttar Pradesh had the highest per cent correct (69 per cent) and the lowest was 30 per cent for Puducherry. In the states of Uttar Pradesh, Tamil Nadu, Maharashtra, Karnataka and Odisha 60 per cent or more children could answer this item correctly.

To conclude, the timing of an event was another item in the cognitive process of grasp/interpret. This item proved to be quite difficult for Class V students as only 39 per cent students were able to answer it correctly. In Uttar Pradesh, however, 61 per cent students were able to do it. Besides in the states of Kerala, Delhi and Mizoram more than 50 per cent students responded to this correctly.

Infer/Evaluate

Inference is one of the higher reading abilities and there was one item in the test for testing simple inference about the participation in a sport. Overall 58 per cent students could infer the idea from the information given in the notice. In states like Uttar Pradesh, Maharashtra, Tamil Nadu, Karnataka, Mizoram and Gujarat more than two third of the students could do this item correctly.

Sum Up

It may be summed up from the above that Class V students in India are at different levels of proficiency in language. Whereas most students found it difficult to workout the timing of an event, to locate the place name from the given notice, more than 50 per cent of them were able to make simple inference about the participants in a sport. A large number of students (63 per cent) could recognise the text type as a notice. Overall, it may be concluded that the teachers need to work with their students to develop their competence in reading at different levels. This can be done by presenting the students with unseen texts of different varieties and asking them to read, understand and answer the given questions. The problems in reading occur due to the fact that most of the language testing in our country

is textbook based and only tests recall of information from the seen texts. As a result of the students have no opportunity to negotiate the unseen texts on their own. If they are made to read different kinds of reading texts often during an academic session, they would certainly been able to perform better on reading comprehension.

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Assessing the Effectiveness of Individualised Integrated Intervention Strategies to Turn Around Slow Learners: An Experimental Study

DR. S. SUBRAMANIAN *

Executive Summary

Slow learners are those children who are low in achieving academic skills and often ignored by others as dull, lazy or inept in the school setting. Slow learners lag behind other students not only in academics but also in social, emotional and psychological well-being. It has been estimated that 5 to 15 per cent of school going children suffer from scholastic backwardness. The early identification of students who are at risk for educational failure is an important process that deserves much attention and research.

Although they have no intellectual disability, no identifiable neurological impairments and no learning disorders, slow learners perform poorly in school and exhibit discrepancy between expected achievement based on their intellectual ability assessment scores and actual achievement. As children advance in school, there is a corresponding increase in difficulty of school subjects and assignments. Thus, children's performance depends progressively more on their motivation to sustain an active commitment to and efforts towards self-regulated learning

Proportionately these problems affect slow learners more often than children labeled mentally retarded. A general education teacher's decision on not providing any extra help to a slow learner has lifelong consequences. This group constitutes approximately 14.1 per cent of the population based on estimates from normal distribution. This warrants intervention training that can help slow learners to reach as close to normal development as possible. Keeping

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in mind all the above facts, an Integrated Intervention based experimental study was proposed to assess the ways in which a significant gain in academic performance of slow learners can be realised.

A Pretest Posttest Randomised Control Group Experimental Group Research Design was followed to assess the effects of the Integrated Instruction on the academic performance and other psychological indices of slow learners.

(i) **Experimental Group:** The total sample comprised of 60 slow learners as Experimental Groups studying in 9th standard in Government High School who were given an exposure to a specially designed integrated intervention programme for the duration of six weeks period of time.

(ii) **Control Group:** Another group of 60 slow learners of 9th standard drawn from the same school were kept as control group. No such exposure to intervention would be given for this group.

In order to have the homogeneity in the sample size, they were matched for age, gender, IQ, mother tongue, socio-economic status etc. The slow learners were selected using the following three screening methods based on their academic performance, teachers report and IQ test.

(i) **Academic Performance:** Only those students who scored less than 50 per cent of marks in all the subjects consistently for the first monthly and quarterly examination were selected.

(ii) **Teachers' Assessment:** Teachers' ratings on children's overall performance in classroom and those who were found to be dull or below average were identified as slow learners.

(iii) **Intelligence Tests:** The Standard Progressive Matrices (SPM) developed by Raven (1988) was used to assess the level of intelligence. The students who scored below 25th percentile were categorised as slow learners.

Nature of Integrated Intervention

A Three Tier Individualised Integrated Intervention Programme

A three-tier mutually supportive Integrated Intervention programme was administered to the slow learners.

I. Individual Skill Development Programme

The following three types of activities such as graphic organiser, mindfulness meditation and mnemonics which had been designed

exclusively to address the specific needs of the slow learners such as memory improvement, goal setting, and overall study skills improvement were administered between 3.30 and 5.00 pm for the period of 12 weeks.

(a) *Graphic Organiser Method:* Graphic Organisers were constructed using 'XMind' and 'Microsoft Smart Art' for Biology and History based on the lessons that were taught to them in their regular classes. Only the slow learning students in experimental group were provided these graphic organisers as an additional academic input. Participants received instruction for a period of 12 weeks. The intervention was given for 40 minutes daily.

(b) *Mindfulness Meditation:* The meditation programme was given in 20 minutes sessions per day for 12 weeks. The intervention programme consisted of learning the mindfulness technique and practicing daily for 20 minutes even on holidays at home. The mindfulness strategy was intended to facilitate emotional control and adjustment.

(c) *Mnemonic Strategies:* The slow learners were introduced to three main mnemonic strategies, namely, the method of loci, the letter method and the keyword technique to improve their memorising skills with suitable examples and techniques. These were given exclusively to the experimental group of slow learners.

II. Mentor Training for Teachers (Conveying positive expectation to slow learners)

This programme was aiming at changing teacher's attitude towards their students of slow learners in the areas of (i) acceptance, and supports to slow learners (ii) rewards or appreciation for demonstrating acceptable behaviours of slow learners and (iii) conveying positive expectations to slow learners and not biased by past events. A three day workshop was organised to impart these behavioural science inputs to the concerned teachers.

III. Relaxation Training for increasing Concentration

Jacobson's Progressive Muscle Relaxation therapy was administered to slow learners to improve their concentration in their subjects. In summary, the overall intervention was aiming at eliciting more effort from the slow learners and their mentors to gain required knowledge and skills to master their subjects.

Measures

The following instruments were used to collect data for the study:

- The Ravens Standard Progressive Matrices (SPM) (Raven, 2000 a)
- Objective Academic Performance collected from the school records
- Academic Self-Efficacy scale developed by Muris (2001)
- Harter's Self-Perception Profile (Harter, 1985) to assess Self-Perception
- Child Behaviour Scale developed by Ladd and Profilet (1996) to assess Socio-emotional adjustment
- Malhotra's Temperament Schedule (MTS) developed by Savita Malhotra and Anil Malhotra (1988).
- Intrinsic Motivation Inventory (IMI) developed by Ryan (1982)

Methods of Data Collection

Phase I: Pre-test Data Collection: The Pre-test was carried out during the months of August/September 2011.

Phase II: Administration of a Three Tier Integrated Intervention Programme: A three-tier mutually supportive Integrated Intervention programme was administered to the Experimental Group of Slow Learners during the period of October 2011 – January 2012 to students, parents and their teachers.

Phase III: Post-test Data Collection: Soon after the completion of Integrated Intervention programme given exclusively to the experimental group of slow learners for about 12 weeks period, the academic performance of both the experimental group and control group in their annual examination was collected along with other psychological criteria factors. For this purpose, once again, the concerned teachers, parents, and the respondents were requested to furnish data on the same parameters such as academic self-efficacy, self-perception, socio-emotional adjustment, temperament, intrinsic motivation, and academic performance levels using the same questionnaire/inventory as in phase I.

The data of the gain score acquired by the experimental group and control group of slow learners were compared using an independent sample t test to ensure that the effects of the Integrated Intervention were significant and specific to the experimental group of slow learners. In addition to the test of significance, effect sizes were calculated to measure the relative magnitude of the experimental

treatment using Cohen's *d.* Based on the analysis, the following conclusions were drawn:

(i) **Academic Performance:** As expected, the Integrated Intervention strategy in addition to conventional classroom teaching seemed to be very effective in improving the academic performance scores in Biology (Science) and History (Social Science) of slow learning students in grade 9.

(ii) **Self-Efficacy:** The experimental group showed a significant improvement in Academic Self-efficacy perhaps due to the effect of Integrated Intervention. It can be inferred that the graphic organiser and memory techniques could have acted as effective tools which drive the slow learners to summarise their ideas and structure their writing work as a visualiser by converting a text into an appropriate paragraph which, in turn, further facilitates to retrieve the required information at the appropriate time

(iii) **Self-Perception:** The two dimensions of the Self Perception Profile namely Scholastic Competence and Global Self-worth of the slow learners of the experimental group have increased to a considerable level in the post-test.

(iv) **Socio-emotional Adjustment:** There is a substantial level of reduction in Anxious Fearful Behaviour and increased Pro-Social Behaviour among the experimental group of slow learners which may alter their cognitive capacities to acquire additional reading skills helping them to overcome the suppressed feelings about their inadequacy in academic activities. Such activities results in putting them at ease in their interaction with peers and teachers. Similarly, there is a considerable level of reduction in Hyper Active-Distractible Behaviour among the slow learners in the experimental group.

(v) **Temperament:** The gain scores of the experimental group on Sociability and Attentivity dimensions were markedly greater than the control group. Due to this Integrated Intervention, their level of attentiveness in the classroom proceedings and responding to the queries raised by the teachers/peer group members had increased quite significantly.

(vi) **Intrinsic Motivation:** There had been a significant level of increase in Perceived Competence and Effort/Importance while a significant level of reduction in the Pressure/Tension dimension among the experimental group of slow learners were found.

Recommendations

It has been confirmed confidently that the customised Integrated Intervention targeted at the slow learners are able to enhance the academic performance and other psychological indices facilitating the psychological well-being. The key recommendations based on those significant psychological aspects are listed under two categories as short-term and long term.

Short-term Strategies

- Introduction of Mindfulness Meditation with immediate effect to reduce academic as well as general anxiety and stress.
- Implementing Integrated Intervention Programme such as graphic organisers, mindfulness meditation, mnemonics training, relaxation techniques etc., periodically addressed to all the slow learners at the beginning stage.
- Enriching the Self-efficacy and Self-perception of slow learners through selected intervention regularly.
- Spearheading studies to address those limitations and lacunae of this study.
- Replacing unconditional promotions with comprehensive continuous assessment to monitor the progress of the slow learners.

Long-term Strategies

- Introduction of guidelines for Graphic organisers and Mnemonics in the appendix of textbooks as learning strategies.
- Periodic scheduling of Teachers' Mentoring Programmes to enhance their awareness, attitude and competence.
- Enhanced involvement of parents through appropriate sensitisation.
- Improving the Teacher-Taught ratio at the national level especially at primary level.
- Drafting a National Level Inclusive Policy for slow learners and learning disabled students enabling Education For All (EFA).

Participatory Learning and Action for Environmental Education

M.A. SUDHIR*

Statement of the Problem

Environmental education is the means to create knowledge, understanding, values, attitudes, skills, abilities and awareness among individuals and social group towards the environment and environment protection. The school system provides the largest organised base for environmental education and action. With children in their plastic age, school imparts knowledge for imbibing in them the environmental ethics and consciousness. Teacher is one of the important factors for promoting environmental education. Teachers can become a vital link in the delivery of environmental knowledge, its associated problems and their solutions.

Objectives

1. To design and prepare a learning package on environmental education.
2. To study the environmental programmes and activities conducted in secondary schools.
3. To examine the environmental awareness of the secondary school students.
4. To provide orientation to teachers on environmental education and Gandhian approach to environment.
5. To suggest intervention strategies for protection and preservation of environment.

Area of Study

The project was carried out in 30 secondary schools of Dindigul district of Tamil Nadu.

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Sample

The study was conducted on sample of 500 students from 30 secondary schools; and 200 secondary school teachers of Dindigul district in Tamil Nadu.

Tools

The data for the study is gathered through environmental surveys using pre-designed field tested tools.

1. **Participatory learning and action approach** is followed to analyse and understand the environmental problems and to develop the intervention strategies.
2. **An Environmental Awareness Scale** was developed and standardised for the purpose of investigation.
3. **The School Environmental Profile** was prepared on the basis of data collected from the schools relating to cleanliness, sanitation, disposal of garbage, drinking water sewage, drainage system, tree plantation, classroom and physical plants etc.
4. **Focus Group** were held with school principals and teachers to elicit the data on environmental conditions and ethics of the school. The functioning of the national green corps, nature study groups and eco-clubs in schools was found out during this session.
5. Also a Students Biodiversity Register was designed and maintained in all the selected schools.

Modules based on environmental issues were prepared and made available to students through the project.

An environment survey has been conducted for the purpose of the study. The investigator conducted the survey in selected schools. In this environmental survey the researcher collected the data directly from a school population at particular point of time. The environmental programmes undertaken in schools were identified through questionnaires to the teachers. A workshop was organised for teacher educators and school teachers for two days. It was intended to orienting the teachers about the nature, content and strategies for environmental education. A special session was arranged on the Gandhian approach to environment followed by the plantation of trees in schools and surrounding areas. The data collected through environmental school survey were analysed using Statistical Package for Social Science (SPSS).

Major Findings

The results of the environmental surveys conducted on a sample of 30 secondary schools revealed the following:

- Schools in Dindigul district of Tamil Nadu were not found environmentally safe.
- Participatory intervention programmes like tree plantation, constructing soak-pits for waste water management, cleanliness drive have been taken up very rarely in secondary schools.
- Massive tree plantation programme has been carried out in schools occasionally, but the continuous nurturing of the plants has not been taken up.
- The study revealed that 96.8 per cent of the students consider environment as the surroundings of human beings including natural resources.
- According to 55.2 per cent of the respondent's personal hygiene, family hygiene and society's hygiene were the three factors essential for development of healthy environment.
- Pure air, clean water and hygienic food were necessary for healthy living according to 89.4 per cent of students.
- 94.2 per cent of students mentioned that tree plantation is essential for environmental protection and 92.8 per cent of students suggested that soil erosion can be prevented by growing trees.
- Water sanitation on streets causes adverse effects and is a health hazard according to 70.8 per cent.
- Environment is polluted by plastic and chemical wastes according to 88.6 per cent of students.
- Spiting in the public should be made punishable according to 85.4 per cent of students.
- 96.0 per cent of students took bath every day and only 95.8 per cent of the students brushed their teeth morning and night.
- Avoiding the use of electricity during day time can conserve power shortage in Tamil Nadu according to 65.2 per cent students and 81.8 per cent preferred to turn off lights and fans when it's not needed.
- 76.4 per cent of the respondents advocated to construct household and community soak-pits to arrest waste water.
- 'Art from waste' should be encouraged in the schools according to 52.4 per cent of students.

- Traditional habit of walking to schools should be encouraged among the students instead using the transports to save fuel according to 67.2 per cent.
- Majority of the respondents 78.8 per cent wanted to use organic manure to grow plants in their gardens and 67.8 per cent of respondents wanted to avoid chemical fertilisers as it is toxic and harmful to people.
- Punishment for violating the environmental laws save nature and biodiversity according to 79.6 per cent students and the message to protect wildlife.
- Dumping the garbage in the school campus and surrounding areas should be stopped. Waste management should be encouraged and students should learn to reduce, recycle and reuse the waste.
- Environmental awareness need not always lead to environmental action, but awareness can always ignite action among students.
- Open defecation should be stopped and use of public toilets should be encouraged in rural areas.
- Adequate water for toilet purpose and cleaning should be provided to the schools.
- Environmental film shows and debates should be conducted in all schools.
- Computer-assisted models should be used for teaching the environmental issues at the secondary level.

Conclusion

The father of the nation, Mahatma Gandhi foresaw as early as 1920s the need for environmental protection for sustainable development in India. His antyodaya approach should become the basis for environmental education in schools and his famous quote, "The earth provides enough to satisfy every man's needs, but not every man's greed" should be instilled in the minds of the students. Participatory learning and action can help the students to understand the environmental issues and construct the knowledge to solve its problems. Opportunities should be created for students for undertaking the nature and its diversity through activity based learning strategies. This can pave way for effective environmental education for preserving the rich environmental heritage in India.

SOME REFERENCE BOOKS FOR TEACHERS

Sl. No.	*Title*	*Price*
1.	Training Handbook in Early Childhood Care and Education	110.00
2.	Teacher's Manual—Environmental Studies Class II	7.00
3.	A Handbook for Designing Mathematics Laboratory in Schools	60.00
4.	A Kit of Essential Play Materials	85.00
5.	Meeting Special Needs in Schools	45.00
6.	Early Childhood Education: An introduction	25.00
7.	Source Book on Assessment for Classes I-IV, Mathematics	115.00
8.	Source Book on Assessment for Classes I-V (Environmental Studies)	100.00
9.	Mathematics Teacher Training Manual for Classes I and II	150.00
10.	Teachers' Handbook on Environmental Education for Higher Secondary Stage	180.00

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