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Contents

Announcement

Some of the forthcoming issues of IER will be special issues dedicated to specific themes. Two of these are planned to be on 'Inclusive Education' and 'Quality of School Education' including enhancement/assessment.

Editorial

I am happy to present one more issue of our journal. Quality of education is one of the primary concerns of educators and planners. With increasing consciousness about education, the parents and students are no less worried regarding the quality in the content, delivery and outcome of education. There are various indicators of quality; among these are proficient and stress free teachers, good teaching-learning climate, inclusion and creative delivery strategies. The researchers in their contribution. have reflected upon some of these issues of contemporary concern and interest. The present issue contains seven research papers. First paper of the issue deals with principal's administrative behaviour with reference to teachers' attitude towards teaching through which the efficiency of school functioning reflects because it is the teacher who shapes the learning climate of the institution. Second paper is a comparative study which deals with the creativity and styles of teaching of Hindi medium and English medium school teachers. The study also makes suggestions for further researches for generalisation of results. Third paper is a study on the occupational stress among female teachers in relation to their personality pattern and marital status and the effect of interaction of the two. This may help the teachers to understand their personality types and handle their problems with better strategies. Fourth paper focuses on Residential Schools of Madhya Pradesh for one of the marginalised groups and aims to investigate the learner characteristics, school environment, achievement and placement of scheduled caste students of these Schools. It makes important suggestions regarding these schools and is a study that contributes to betterment of education for this marginalised group. Fifth paper is an attempt to assess the reading errors committed by the Class III students studying in a selected Kendriya Vidyalaya. Sixth paper is a comparative study on the adolescents of *Uttarakhand* which reflects the impact of parental encouragement on level of aspiration and academic performance of the adolescents. And the last paper of the issue aims to investigate the effectiveness of concept mapping strategy on the achievement and concept retention in organic chemistry of Class XII science students belonging to higher intelligence and lower intelligence groups.

The Indian Educational Review will continue to focus its attention on contributing to the discipline of education by disseminating quality research work to its readers. We are committed to providing opportunities for sharing research experience among fellow researchers, motivating young researchers and providing inputs to all those involved in teaching, investigating and policy making.

We plan to bring out some special issues of lER. Some of the forthcoming issues will be on 'Inclusive Education' and on 'Quality (enhancement/assessment) of school education'. Contributions of academicians, researchers, research writers and institutions are cordially invited for the next issues, including those of the special issues. We look forward to your suggestions for bringing improvement in the quality of journal.

Poonam Agrawal
Academic Editor

Indian Educational Review

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.

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Research Papers

Principal's Administrative Behaviour with Reference to Teachers' Attitude Towards Teaching

NUSRAT A. RIZVI*

ABSTRACT

The most crucial factor of an educational institution is the administrative behaviour of its Principal which reflects the efficiency of the school functioning and besides this, it is the Principal who shapes the learning climate of the institution by developing a positive attitude among the teachers towards teaching. Thus the Principal's behaviour influences teachers as well as students of his/her institution.Present study attempts to ascertain the administrative behaviour of the secondary school Principals and attitude of the teachers towards teaching. Besides ascertaining the different levels of the administrative behaviour of secondary school Principal, the study also attempts to compare the Principal's differential administrative behaviours in respect of their teachers' attitude towards teaching. The study was confined to 60 Higher Secondary and Intermediate Colleges of Meerut region. For achieving the objectives of the present study two methods of research i.e., Normative Survey and Causal Comparative Methods were used. For calculation and interpretation of data the investigator used two standardised tools. For measuring various dimensions of the Principal's administrative behaviour PBDQ (Principal's Behaviour Description Questionnaire) and for measuring teachers' attitude towards teaching TAI (Teachers' Attitude Inventory) were used. For calculation and interpretation of data statistical analysis (i.e. 'F' test and't' test) was used. The findings of the study indicate that the secondary school Principal who differ on their administrative behavioural characteristics such as Extrocentric nature, Interactive nature, Democratic nature, Progressiveness, Flexibility, Achievement Oriented quality and Tolerance also differ significantly with reference to their teachers' attitude towards teaching.

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Introduction

The nucleus of an educational institution is the Principal, who plans, co-ordinates, organises and motivates the other personnel of the institution to play their roles efficiently. The Principal can also play an effective role in achieving the institutional and national goals but only when he/she has the requisite competency, leadership talent, administrative efficiency, managerial planning skills and ability to motivate the teachers to teach effectively and the students to develop and grow up to their optimum ability and capacity. In most of the researches, the most popular field of studies has been found to be the survey of Principal's actual administrative behaviours at different levels of education. Rizvi (1997) found that the Principals of the institutions having good learning climate were high in their Extrocentric, Inertia-Prone and flexible behaviour. Fredrick (2001) asserts that the school administration is the key determinant whether a teacher will stay or leave the profession as it sets the tone of entire working environment. Chan, et. al. (2009) found that the excellent Principals are sense makers of the school that helps to create a sustainable school climate that will enhance the teachers' as well as students' productivity. Another category of researches has tried to identify the factors that have some bearing upon Principal's administrative characteristics and also on their effectiveness. Johnson (2004) found that helping and supportive Principal can enable a teacher to develop and succeed in most challenging situations where as the Principal with an authoritarian attitude can undermine the work of even a most able and committed teacher. Singh (2007) found that job satisfaction in teachers was positively related to their attitude towards teaching. Ahmed et. al. (2007) found in their study that Principal's and teachers' positive attitude towards teaching is responsible for better learning conditions. Findings of the study conducted by Iblseam, (2008) indicate that work load on teachers was an important factor in changing their attitude towards teaching. Tyagi (2010) studied that the Heads of government and private aided institution generally obtain little or no feedback or academic support for professional development of teachers.

Administrative behaviour of the Principal

The administrative characteristics of the Principal refer to a set of desirable administrative behaviour as perceived by the teachers in

the institution. The administrative behaviour of the Principal has ten dimensions, namely, Extrocentric, Egocentric, Authoritarian, Interactive, Democratic, Inertia-prone, Progressive, Flexible, Achievement-oriented and Tolerant administrative behaviour. An Extrocentric Principal tends to respect the values and beliefs of others, to find out the qualities in a person and to take interest in his/her teachers. An Egocentric Principal always considers self to be right and likes to work in his/her own way. An Authoritarian does not worry about other's ideas neither likes to give explanation for decision taken. Such an individual works like a dictator and maintains a formal and administrative hierarchy. An Interactive Principal keeps an informal atmosphere while talking to his colleagues, explains his/her point of view before others and tries that others should understand him rightly. He/She defines the job of every staff member properly. A Democratic Principal takes active co-operation of his teachers in policy making implementing the programme, evaluation of results, making decisions and solving various problems. He/She co-operates with his/her teachers in uplifting the standard of the institution. He/She tries to work according to the majority decision. He/She helps the teachers in fulfilling their individual responsibilities. An Inertia-prone likes traditional values, processes and ideas. Such a Principal consults only senior teachers in taking decisions. He/She tries to maintain a status-quo and dislikes the suggestions given by others. He/She emphasises to work on old and traditional pattern and He/She keeps contact with higher authorities for arriving at any decision. Such a person does not like change till it is forced and is conscious of his/her rights and privileges. He/She likes strict discipline and hesitates in accepting new ideas. A Progressive Principal utilises the abilities of his/her staff in the advancement of the institution and is ready to implement the suggestions given by the teachers and makes the best possible use of human and other resources. A Flexible Principal plans according to changed conditions. His/Her policies towards the teachers and institutional programmes are flexible. He/She gives due considerations to individual differences and adjusts in changing conditions, is able to solve the problems dynamically, is always ready to make administrative changes for achieving educational objectives and accepts valuable suggestions of his/her teachers. An Achievement-oriented Principal is worried about the problems of the institution and wants the teachers to work up to their capacity. He/She gives priority to the progress

of the institution and his/her main concern is the development of teaching-learning process such Principal sacrifices own comforts for achieving good results and makes every possible effort to get the work completed appealing colleagues for delivering good results. A Tolerant Principal allows the teachers to work in their own way according to their interest, does not mind the criticism and tries to understand the teachers' difficulties instead of rebuking them, allows the teachers to disagree, does not criticise the teachers for performing poorly and even tolerates those who do not work

Teachers' Attitude

Attitude is a concept which is concerned with an individual way thinking, acting and behaving. Teaching is an art and the quality of teaching depends on the love, dedication and devotion of the teacher towards the subject of the knowledge. The quality of any teaching programme cannot rise above the quality of its teachers. It is the teacher who is responsible for influencing a student's learning of the subject. In a nutshell a teachers' attitude directly influences the student's achievement. Teachers' attitude, in turn, is influenced by their culture and belief system. Teachers' attitude towards teaching must be favorable enough to carry students along. Yara (2009) studied the relationship among teachers' attitude and students' academic achievement in secondary schools. The findings revealed that the Mathematics teachers of secondary schools with high achievements in mathematics were having good and positive attitude towards the teaching of their subject. Teachers' attitude and behaviour strongly rely on their perceptions about their schools. A teacher having positive attitude towards teaching can be characterised as follows.

1. A teacher having positive attitude towards teaching has a different vision and perception in the changing socio-economic and cultural needs of the learners and includes various concepts of education related to psychological, sociological and neuro-psychological aspects of the education.
2. He/She identifies the facts, concepts, principles and theories and tries to comprehend relationship among them, acquaints with new developments in school subject and structures to achieve maximum level of learning.
3. He/She plans his/her lesson with appropriate techniques and teaching Material based on the needs of the students to achieve the objectives.

4. Always tries to know and practice different techniques and methods of continuous and comprehensive evaluation of the child and the self.
5. Properly organises and maintains all the activities in and outside the classroom and his school record is good in human relations

In this way it can be said that teaching is an art and the quality of teaching depends on the love, dedication and devotion of the teacher towards the subject of knowledge. The positive attitude helps the teacher to be the role model of the future generation of students.

Statement of the problem

The present study attempts to ascertain the ten dimensions of the administrative behavioural characteristics of the secondary school Principals and the attitude of their teachers towards teaching. Besides ascertaining the different levels of the various dimensions administrative behaviour of secondary Principals, the study also attempts to compare the Principal's differential administrative behaviours with respect to their teachers' attitude towards teaching.

Research Questions

The research questions for the present study are as under:

1. Does the Extrocentric administrative behaviour of the secondary school Principals influence the teachers' attitude towards teaching?
2. Does the Egocentric administrative behaviour of the secondary school Principals influence the teachers' attitude towards teaching?
3. Does the Authoritarian administrative behaviour of the secondary school Principals influence the teachers' attitude towards teaching?
4. Does the Interactive administrative behaviour of the secondary school Principals influence the teachers' attitude towards teaching?
5. Does the Democratic administrative behaviour of the secondary school Principals influence the teachers' attitude towards teaching?
6. Does the Inertia-prone administrative behaviour of the secondary school Principals influence the teachers' attitude towards teaching?

7. Does the Progressive administrative behaviour of the secondary school Principals influence the teachers' attitude towards teaching?
8. Does the Flexible administrative behaviour of the secondary school Principals influence the teachers' attitude towards teaching?
9. Does the Achievement-oriented administrative behaviour of the secondary school Principals influence the teachers' attitude towards teaching?
10. Does the Tolerant administrative behaviour of the secondary school Principals influence the teachers' attitude towards teaching?

Hypotheses of the study

The hypotheses that will guide the present study are stated in Null form as under:

1. There is no significant difference in the attitude of the teachers working with the Principals having differentially developed Extrocentric administrative behaviour.
2. There is no significant difference in the attitude of the teachers working with the Principals having differentially developed Egocentric administrative behaviour.
3. There is no significant difference in the attitude of the teachers working with the Principals having differentially developed Authoritarian administrative behaviour.
4. There is no significant difference in the attitude of the teachers working with the Principals having differentially developed Interactive administrative behaviour.
5. There is no significant difference in the attitude of the teachers working with the Principals having differentially developed Democratic administrative behaviour.
6 There is no significant difference in the attitude of the teachers working with the Principals having differentially developed Inertia-prone administrative behaviour.
7. There is no significant difference in the attitude of the teachers working with the Principals having differentially developed Progressive administrative behaviour.
8. There is no significant difference in the attitude of the teachers working with the Principals having differentially developed Flexible administrative behaviour.

9. There is no significant difference in the attitude of the teachers working with the Principals having differentially developed Achievement-oriented administrative behaviour.
10. There is no significant difference in the attitude of the teachers working with the Principals having differentially developed Tolerant administrative behaviour.

Methodology

This study was, by and large, a descriptive survey type study. Two methods of research have been selected by the investigator. These are Normative Survey Method and Causal Comparative Method. Normative Survey Method was used for ascertaining the ten dimensions of the administrative behaviour of the secondary school Principal. Whereas the causal comparative method was used to compare the teachers' attitude towards working with the Principals having differentially developed administrative behaviours as Low, Medium and High on each dimension.

Sample and Sampling Techniques

The study population comprised of higher secondary schools of Meerut region. The investigator selected 10 per cent of the total population of secondary schools i.e. 60 institutions of Meerut region. In each institution one 15 teachers and 50 students were selected randomly.

Techniques

The present study has employed the techniques such as observation, interview and testing for data collection, whereas, for calculation and interpretation of data the statistical analysis i.e. 'F' test and 't' test were used by the investigator.

Tools used

In present study, the effect of one independent variable i.e. administrative behaviour of secondary school Principal was compared with one dependent variable i.e. Teachers' attitude towards teaching. The tools employed for measuring the two variables were as under

1-PBDQ (Principal's Administxrative Behaviour Description Questionnaire)

This tool was administered on the teachers selected as the sample in present study. It is a standardised tool developed by

Dr. S.P. Kaushik. The tool, as the name suggests, covers ten administrative characteristics of the secondary school Principals, namely,Extrocentric, Egocentric, Authoritarian, Interactive, Democratic, Inertia-prone, Progressive, Flexible, Achievement-oriented and Tolerant. This questionnaire comprises of 150 items the items of the questionnaire have been grouped in accordance with the following table.

Table1.1(Showing the location of items measuring various dimensions of PBDQ)

S. N.	Dimensions	No. of items	Serial no. in questionnaire
1	Extrocentric	15	1,11,21,31,41,51,61,71,81,91,101,111,121, 131,141.
2	Egocentric	15	2,12,22,32,42,52,62,72,82,92,102,112,122, 132,142.
3	Authoritarian	15	3,13,23,33,43,53,63,73,83,93,103,113,123, 133,143.
4	Interactive	15	4,14,24,34,44,54,64,74,84,94,104,114,124, 134,144.
5	Democratic	15	5,15,25,35,45,55,65,75,85,95,105,115,125, 135,145.
6	Inertia-prone	15	6,16,26,36,46,56,66,76,86,96,106,116,126, 136,146
7	Progressive	15	7,17,27,37,47,57,67,77,87,97,107,117,127, 137,147.
8	Flexible	15	8,18,28,38,48,58,68,78,88,98,109,118,128, 138,148,
9	Achieve-oriented	15	9,19,29,39,49,59,69,79,89,99,109,119,129, 139,149
10	Tolerant	15	10,20,30,40,50,60,70,80,90,100,110,120, 130,140,150
		150	150

2- TAI (Teachers' Attitude Inventory)

Hindi version of Minnesota Teacher Attitude Inventory was used to measure the attitude of the teachers towards teaching in the institutions. The tool comprises of 150 items. This tool was administered on the students selected as sample

Results and Analysis

Principal of any institution, needless to say, is an administrator. His administrative behaviours, therefore, are contributory to the

development of the institution. In the present study, Principals were categorised as Low, Medium and High in their behavioural characteristics on the basis of percentile scores of PBDQ. The results were as under:

1. As per the average scores of PBDQ of the institutions on percentile scale, the Principals of the institutions below 29.6 were categorised as low.
2. As per the average scores of PBDQ of the institutions on percentile scale, the Principals of the institutions within 29.6-32.5 were categorised as medium.
3. As per the average scores of PBDQ of the institutions on percentile scale, the Principals of the institutions above 32.5 were categorised as High.

Table 1.2 attempts to answer all the ten questions of the present study.

Table1.2 (Showing comparison of various dimensions of administrative behaviour of secondary school principals with respect to teachers' attitude towards teaching)

S.N.	Dimensions of PBDQ	Teachers' Attitude towards teaching				Result
		'F' Value	't' Value			
			L* -M**	M –H***	L -H	
1.	Extrocentric	3.20*	.93	1.68	2.38*	Moderately Related
2.	Egocentric	1.17	-	-	-	Insignificantly Related
3.	Authoritarian	2.99	-	-	-	Insignificantly Related
4.	Interactive	3.38*	1.21	1.03	2.57*	Moderately Related
5.	Democratic	3.75*	.096	2.08*	4.73**	Highly Related
6.	Inertia-prone	2.03	-	-	-	Insignificantly Related
7.	Progressive	3.32*	1.26	1.23	2.83**	Highly Related
8.	Flexible	6.69**	1.56	1.96	3.53**	Highly Related
9.	Achieve-oriented	4.04**	.48	2.10*	2.92**	Highly Related
10	Tolerant	3.20*	1.36	.77	2,53*	Moderately Related

* Low category of the Dimensions of PBDQ
** Medium category of the Dimensions of PBDQ
*** High category of the Dimensions of PBDQ

The research questions of the present study, it will be recalled, were to compare the Principals of different administrative characteristics with respect to the teachers' attitude towards teaching. Conclusions drawn from the interpretation of data indicate that the Secondary school Principals who differ on Extrocentric, Interactive, Democratic, Progressive, Flexible, Achievement-oriented and Tolerant dimensions of their administrative behavioural characteristics also differ significantly with reference to their teachers' attitude towards teaching. Interpretation of the Null hypotheses formulated for the present study can be summarised as under:

1. Secondary school Principals who are on high dimension of Extrocentric behaviour, take more interest in their teachers and consider them more efficient and qualified and try more to increase their interest in school activities. As a result, they have more positive attitude of their teachers towards teaching. Therefore, the Null hypothesis that there is no significant difference in the attitude of the teachers working with the Principals having differentially developed Extrocentric administrative behaviour is rejected.
2. Egocentric behavioural characteristic of secondary school Principals in present study has been found not to exert any significant influence on the teachers' attitude towards teaching. Therefore; the Null hypothesis that there is no significant difference in the attitude of the teachers working with the Principals having differentially developed Egocentric administrative behaviour is selected.
3. Authoritarian behavioural characteristic of secondary school Principals in the present study has been found not to exert any significant influence on the teachers' attitude towards teaching. Therefore; the Null hypothesis that there is no significant difference in the attitude of the teachers working with the Principals having differentially developed Authoritarian administrative behaviour is selected.
4. Secondary school Principals who are on high dimension of Interactive behaviour have more informal atmosphere while talking to their colleagues and give more freedom to their teachers. As a result, they have more positive attitude of their teachers towards teaching. Therefore, the Null hypothesis that there is no significant difference in the attitude of the teachers

working with the Principals having differentially developed Interactive administrative behaviour is rejected.

5. Secondary school Principal who are on high dimension of Democratic administrative behaviour, take more active co-operation of their teachers in policy making, evaluation of teaching learning process and in solving various other problems. As a result of it, their teacher have more positive attitude towards teaching. Therefore, the Null hypothesis that there is no significant difference in the attitude of the teachers working with the Principals having differentially developed Democratic administrative behaviour is rejected.
6. Inertia-prone behavioural characteristic of secondary school Principals in present study has been found not to exert any significant influence on the teachers' attitude towards teaching. Therefore; the Null hypothesis that there is no significant difference in the attitude of the teachers working with the Principals having differentially developed Inertia-prone administrative behaviour is selected.
7. Secondary school principals who are on high dimension of Progressive behaviour, utilise more abilities of their teachers in the advancement of their institution and develop a more confident feeling among their teachers. As a result of it, they have more positive attitude of their teachers towards teaching. Therefore, the Null hypothesis that there is no significant difference in the attitude of the teachers working with the Principals having differentially developed Progressive administrative behaviour is rejected.
8. Secondary school principals who are on high dimension of Flexible behaviour, plan better according to changed conditions and policies towards teachers and institution are more flexible. As a result of it, they have more positive attitude of their teachers towards teaching. Therefore, the Null hypothesis that there is no significant difference in the attitude of the teachers working with the Principals having differentially developed Flexible administrative behaviour is rejected.
9. Secondary school principals who are on high dimension of Achievement-oriented behaviour, are more worried about the problems of their teachers, resulting in positive attitude of their teachers towards teaching. Therefore, the Null hypothesis that there is no significant difference in the attitude of the teachers

working with the Principals having differentially developed Achievement-oriented administrative behaviour is rejected.

10. Secondary school principals who are on high dimension of tolerant behaviour, allow their teachers to work according to their interest. As a result of it, they have more positive attitude of their teachers towards teaching. Therefore, the Null hypothesis that there is no significant difference in the attitude of the teachers working with the Principals having differentially developed Tolerant administrative behaviour is rejected.

Conclusions drawn from the present study will be valuable in the selection procedure of an ideal Principal. The present system of recruitment of Principal does not have uniformity. The professional training, managerial skill dedication, commitment and leadership qualities are always not considered as essential requirement for the appointment of a Principal. Knowledge of such administrative behaviours of the Principals contributes in the effectiveness of the institution will be of significant value in helping the recruiters in selecting the Principals with required administrative behaviours.

REFERENCES

Ahmed, Kuini, I. and I. Desai. 2007. Principal's and teachers' attitude and knowledge of inclusive education as predictors of effective teaching practices in Ghana. *Journal of Research in Special Educational Needs*. vol. 7, No. 2. pp. 104-119.

Chan, Yuenfoor and G. K. Sindhu. 2009. Leadership characteristics of an excellent Principal in Malaysia. *International Educational Studies*. vol. 2, No. 4.

Fredrick, J. G. 2001. Why teachers leave? *The Educational Digest*. vol. 66, No. 8. pp 46-47.

Iblseam, H. 2008. Factors affecting the attitude of teachers towards teaching. *National Secondary School Principal Bulletin*. vol. 83, pp. 16-32.

Johnson, S. 2004. *Tales for the past*; Building small learning communities. In S. HARRIS (Ed.), Best practices of award winning Secondary School Principals. (pp 83-90). Colwin Press, Thousand Oaks, CA.

Kaushik S. P. 1979. A study of dimensions of administrative leadership. Ph. D dissertation. Meerut University. pp. 52-54.

Rizvi, S. A. 1997. Characteristics of the Principals in different types of institutional learning climate. Ph.D. dissertation, Meerut University.

Sharma, K. G. 1979. *Hindi version of Minnesota teacher attitude inventory*. Meerut University, Meerut.

Singh, G. 2007. *Job satisfaction of teacher educators in relation to their attitude towards teaching*. vol. 19, No. 3 and 4. pp. 34-37.

TYAGI, R. S. 2010. School based instructional supervision and the effective development of teachers. COMPARE; *A Journal of Comparative and International Education*. vol. 40, No. 1.

YARA, P. and OLANTUNDE. 2009. Relationship between teachers' attitude and students' academic achievement in Mathematics. *European Journal of Social Sciences*. vol. 11, No. 3.

Creativity and Styles of Teaching of Hindi Medium and English Medium School Teachers – A Comparative Study

J. S. Jha* and Praveen Rastogi**

Abstract

Two basic types of schools are found in India-English Medium and Hindi Medium schools. The former are generally preferred by the elite class of our society. English Medium Schools are often labeled as 'better' when compared with their Hindi Medium counterparts. They are expected to use more modern methods and techniques to teach the students, where as Hindi Medium Schools are generally anticipated to continue the age old traditional methods of teaching. To find out the truth of this paradoxical situation, a humble attempt was made to study the creativity and styles of teaching of Hindi Medium and English Medium School teachers; an endeavor was made to find out the relation between teachers' creativity and their styles of teaching. Creativity and style of teaching of a teacher are the two eminent factors that distinguish one teacher from another. Thus, the difference between the two medium of schools could be studied on the basis of these two qualities of the teachers teaching in relevant institutions. The sample for the study comprised 260 teachers selected randomly from various Hindi Medium and English Medium Schools private as well as government. In order to achieve the objectives, tests of teaching and creativity were used. The study revealed that the teachers on Hindi Medium and English Medium Schools significantly differed in their styles of teaching but they did not show any significant difference in their creativity. The style of teaching of teachers of both mediums was not found significantly related with their creativity. The study concluded that every teachers, irrespective of his sex, medium of instruction or style of teaching (traditional or objective based) has to be creative and innovative to achieve his/her teaching aims. The study also makes suggestions for further researches to validate and generalise the results of the present research work.

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Introduction

Two basic types of schools are found in India-English-Medium and Hindi-Medium Schools. Both types of schools peacefully co-exist in this country without interfering in each other's activities. But there is a struggle going on in the minds of the parents and our society whether to select English medium or Hindi-medium schools for their children. There are many reasons for the conflict. Perhaps, if the Hindi-medium schools maintained the same standards of education and extra-curricular activities, there would not have been so much liking for English-medium schools. English Medium Schools generally have better education facilities than Hindi-Medium Schools, thus they are the first choice of the parents for their children. They opine that here a student gets more opportunity for developing his personality along with preparation for examination. These schools possess ample resources so that the students and teachers do not find any obstacle in their work. In comparison to these public schools the condition of other medium (Hindi, Urdu, etc.) schools is not so good, though some exceptions may be found. They are generally faced with many shortages. For them, the English-medium and convent schools serve the purpose of an ideal. When they achieve some outstanding results, they compare their achievements with the achievements of English – medium and convent schools. A very high percentage of guardians express their views that English-medium schools provide better knowledge of English language and literature. These schools provide better opportunities for the learning manners and better knowledge for success in professional life. These schools also recruit better qualified teachers for their students; better furnished buildings, atmosphere of better discipline, good hobbies to utilise their leisure time. Education in these schools is given according to the age of the child. They provide better opportunities for extra-curricular activities. So the large majority of guardians prefer English-medium schools for their wards. In another study Jha (1972) concluded that parents who themselves were students of English medium schools show favourable attitude for English-medium schools, so far as academic progress and development of their children is concerned. English-medium schools play a vital role in the socialisation of child, which is agreed upon unanimously by parents of Hindi-medium and English-medium students. English medium schools are lagging behind Hindi-medium schools in the sphere of cultural training. Parents consider English-medium schools better when

the question of future prospects is put in front of them. In the final comparison English-medium schools have got the better of the two. Rastogi (2006) through her study reveals that after the implementation of three language formula, the students speaking and studying in Malayalam find it difficult to read and speak in Hindi as compared to English. The structures of Malayalam and Hindi have been compared at phonological, morphological and synaptic levels. English, once a colonial language has captured the world market today. It has become the international language and the most powerful language, the official language of UN. It has become imperative to learn and master this language in order to compete for better job opportunity around the globe. Several studies have shown Hindi-medium students in higher or technical education face the problem of poor communication skills, low level of guidance, lack of exposure to formal environment, poor family background, poor educational background of the students, inferiority complex, lack of educational facilities such as libraries, books etc. Most of the students have opted to study through the Hindi-medium, mainly because they could not afford to go to English-medium private schools. Most interviews are held in English, where Hindi-medium students feel helpless. They also suffer from lack of confidence. Another cause is the ongoing struggle of these students to translate their thoughts from Hindi into English. Studies have shown that the students belonging to Hindi medium Schools (Saraswati Shishu Mandirs) have a more oriental based culture than the students of public schools. Public Schools students come from higher income group families. The Hindi medium students possess somewhat more positive attitudes towards teacher, parents discipline, country and religion than the public school students. The Hindi medium students had more respect for religious, social, democratic knowledge and power values whereas the public school students paid more regard to aesthetic, economic, hedonistic and health values. The Hindi medium students were better motivated towards academics than the public schools students.(Rastogi, 2006)

English medium schools in our country have also been bitterly criticised on various grounds. The main criticism against them being, that they are expensive and against the spirit of democratic ideology. English-medium schools are also blamed and held responsible for poor conditions of other general schools. Since the children of privileged section of the society study in these schools

and this class controls the finances and administration in the country, it is natural that the words of these schools carry weight with men who matter.

Whatever be the criticisms levied against both type of schools the fact is that both occupy an important place in our country. Thus it becomes very important to compare the abilities and skills of the teachers in these schools, because teacher is the real basic factor of our education system. Even if there are less resources, a teacher can make a difference by his/her novel ideas, creativity and the style of teaching that he followed in classroom situations.

Creativity and Styles of Teaching

Creatively is a mental and social process involving the generation of new ideas or concepts or new associations of the creative mind between existing ideas or concepts. Creativity is fueled by the process of either conscious or unconscious insight. An alternative conception of creativeness is that it is simply the act of making something new. From a scientific point of view the products of creative thought (sometimes referred to as divergent thought) are usually considered to have both originality and appropriateness. Creativity is the base of all arts, especially teaching.

Creativity of a teacher is reflected through the style of teaching. Creativity and style of teaching have their impact upon each other. Teaching requires different type of methods, techniques and teaching aids. The selection of these methods and techniques depends upon the nature of task, learning objectives and student's entering behaviour. A teacher organises the activities of teaching to bring about the desirable change in the behaviour of the learner – this is called the particular style of teaching of a teacher. Teaching styles can be classified under the following two types:

The traditional style of teaching is also known an autocratic style. These styles achieve different objectives than objective based style of teaching. The autocratic/traditional style is content-centred and teacher more active while the students are like passive listeners. The autocratic/traditional teaching style realises cognitive objectives while objective based teaching style tends to achieve affective objectives. The traditional styles do not consider the student's abilities, interests and personality of the learners. There is no freedom for the learner in teaching process. These are highly subjective and conventional in their approach. These styles

generally include lecture strategy, lesson demonstration, tutorials and programmed instructions.

The objective based style of teaching, also known as 'permissive style of teaching', is based upon 'modern theory of generalisation of task and relationship centred'. It is child centred, less conventional and focuses on achieving affective objectives. These styles create situations for student and teacher interaction and both remain active in teaching. Teaching is organised by considering student's interests, abilities and learning. The teacher plans the complete teaching in advance and formulates certain objectives, that are strived to be achieved through the lesson. The evaluation at the end of the lesson/teaching decides the degree to which the desired objectives have been achieved. If the objectives are evaluated as being 'almost' achieved the teacher passes on to the next portion or unit of the lesson; if not, remedial lessons are provided to achieve the same.

Review of Related Studies

Following research studies have been conducted on creativity and styles of teaching.

Roger et. al. (2000) throw light on ten blocks to creativity and suggested the thoughts one should avoid if he wishes to be creative.

Heilman (2003) observed that highly creative people have a high level of specialised knowledge, are capable of divergent thinking and have co-activation and communication between regions of the brain that ordinarily are not strongly connected.

Kaoru Yamamoto (2005) observed that institutions of higher education have not made enough adjustments or created diversified courses which might have helped in generating creativity in students or teachers.

Julie (2008) attempted to demonstrate through sustainable pedagogy that teacher's work required nourishment and strength and that creativity might be a suitable antidote to the broader educational landscape.

Marvin, B. (2008) concluded that limitations can be a good thing to motivate creativity.

Sullivan and Harper (2009) associated creativity with the fields of art and literature, and emphasised that originality is a sufficient condition for creativity.

Agastya (2009) observed that in India urban teachers have limited knowledge on how to motivate creativity in children.

Sheng Qunli, et. al. (2008) favours objectives based instructional design and summarises how to handle the relationship between the learning result and course.

Bruce (2008) does not attempt to promote one style over another because every form of integrated learning produces improved conceptual understanding.

Haviland (2012) argues that part of the work of educational leaders is to encourage and nurture creativity within their faculty. Every teacher should be transparently sharing with their students their own creative efforts.

Ferlazzo (2012) thinks, for creativity, we need to begin by admitting that the typical classroom is not set up to encourage creativity as "judgments for the favourite student were negatively co-related with creativity: judgments for the least favourite student were positively correlated with creativity. But we shouldn't be so determined to enhance these mental skills that we discourage the mental strategies that make creativity possible.

Henriksen and Mishra (2013) put forth that despite our increased attention to creativity we still have little understanding of how to nurture and support creativity in current classroom contexts, particularly creative teaching. Teachers and administrators face the question of how to successfully integrate creativity into teaching practice when teachers have many pressures and little leeway. We have to resolve a fundamental dilemma about creativity – that even as it's grounded in deep knowledge of the particular of a field, it requires stepping outside these particulars.

Hein, Ries and Pires (2012) study how teachers' motivation to teach is related to different teaching styles. Teachers using more productive teaching styles can contribute more to the promotion of physical activity among students.

Reed (2012) has tried to define different learning styles and explain how people learn. He emphasises that an instructor needs to employ more on teaching styles.

Katsioloudis and Fantz (2012) in their study showed that while there was some variation within majors, the overall dominant learning style in the materials process course was the kinesthetic style. The dominant preferred teaching style of the faculty members was the kinesthetic style. In essence, faculty members are teaching the way they were taught.

Danielson (2013) has presented a model for teachers to follow in their teaching. The principal reason for releasing the 2013

edition of the framework for Teaching Evaluation Instrument was to respond to the instructional implications of the Common Core State Standards (CCSS). They envision deep engagement by students with importance concepts, skills and perspectives.

Need and Justification of the Study

If the fullest possible following of human potential is the business of education then comparing the level of creativity of Hindi Medium and English Medium school teachers shall certainly bring out the better of the two. The study also endeavours to study whether there is any significant difference in the styles of teaching of Hindi Medium and English Medium school teachers – do they prefer a traditional style or an objective based style. It is also important to know whether there is any relation between these teacher's teaching style and their creativity. The comparison of these eminent factors of teaching shall not only be helpful in suggesting quite useful inputs but shall also add a lot of value in the understanding of the actual position of the two types of schools. The finding of the study shall reveal important and significant relationships of various teacher activities for the teachers at the respective institutions, learners, planners, sociologists, philosophers, psychologists, economists and administrators to use them in practical situations.

Procedural Objective of the Study

To categorise Hindi Medium and English Medium school teachers in two groups of two types of teaching styles namely, Traditional style and Objective based style of teaching.

Research Objectives

(i) To compare the teachers of Hindi Medium and English Medium schools on their teaching schools.
(ii) To find the difference in the creativity of compared groups of teachers.
(iii) To find the relation of teaching styles of teachers with their creativity.

Hypotheses of the Study

(i) The teachers of Hindi Medium and English Medium schools do not differ in their styles of teaching.
(ii) There is no significant difference in the creativity of compared groups of teachers.

(iii) The teaching styles of teachers are not related with their creativity.

Population and Sample

The population for the purpose of study was defined as the teachers teaching in various Hindi Medium and English Medium schools in Bareilly, Uttar Pradesh. The schools, to which these teachers belong, are affiliated either to U.P. Board, Allahabad or I.C.S.E Board/ C.B.S.E Board.

For fulfilling the requirements of sample about 520 school teachers were selected randomly from Hindi Medium and English Medium schools of Bareilly. About 260 teachers from English Medium schools and about 260 teachers from Hindi Medium schools were taken. Out of 260 English Medium teachers' 130 are female and 130 are male. The sample subjects used in this study belong to urban background.

For the purpose of sample' ten English Medium schools were dotted, out of which five are reputed missionary schools of the city, one is run by Central Government school and the rest four are Privately administered. All the schools hold a respectable place in the scene of education in the city. The students from the nearby and adjoining areas (blocks, villages etc.) also study here. The appointment of teachers in these schools includes written tests, interviews, demonstrations lessons etc. Facilities like science laboratories, computer labs, sports and other curricular and extra-curricular activities are satisfactorily available in these schools.

For the purpose of selecting Hindi Medium schools, ten schools were chosen. Out of these six are government schools and four schools are privately run. Three of the government schools are only for girls, two are for boys and one has two branches – one each for girls and boys. All the four privately run schools are meant for co-education. Some of these schools have the same procedures for the selection of teachers as in English Medium schools, but some select the teachers just on the basis of interview. Most of these schools do not have well equipped science or computer labs and space for sports activities. Some of these are situated in busy, narrow residential and congested areas, with noisy, busy and unsafe surroundings. All these schools enjoy a fair reputation in Bareilly.

Tools

The study involves traditional and objective based style of teaching as independent variables and creativity as dependent variable. The tools used according to the variables are as under:

Table 1
Psychological tools used in study

S.No.	Variable	Measuring Tools
1.	Style of Teaching	How do you teach? By Dr. G. Kumar and Dr. Shipra Jain.(1987)
2.	Creativity	What type of person are you? (aap kis prakar ke vyakti hain?) By Dr. Badrunnisha and Dr. Kiran Gupta

The details of the tools are as follows:

1. How Do You Teach? Inventory

In order to ascertain whether students could identify criteria delineating teacher's style of teaching index was constructed on the lines of Palermo (1965). The thirty two statements that have been constructed for this purpose have content validity in terms of recognised characteristics of good teacher. Additionally the thirty two items were submitted to three independent judges in the field of creativity and all agreed unanimously that these items distinguished style of teaching that would foster the creativity of students. The higher score (above the value of median) on the inventory indicates the objective based teaching style and the lower score (at and below the value of median) indicate the traditional teaching style.

Among the 32 statements 23 statements are positive 9 items are negative.

Scoring

From the inventory separate scores can be obtained for each statement. On this inventory a rating of five indicated the particular teaching style occurred. "All the time" a four "Most of the time" a three "Some of the time" a two "Occasionally" and a one "Never". The scores on all the items will constitute the table scores of that individual on this inventory. The above matting's are for negative statements (9, 13, 15, 18, 19, 24, 25, 26, 27). For positive statements the ratings are one, two, three, four and five respectively. The minimum scores on the test can 32 and maximum 160.

Reliability and Validity of the Test

The most obvious method, for finding the reliability of the scores, is by repeating the same test on the same occasion. The reliability co-efficient in this case is simply the correlation between the score obtained by same person on the two administration of the same test. Product moment correlation of co-efficient was computed for this scale and was found. 98 (for 20 teachers) after one week and after fifteen days, 91 (for 15 teachers). The split half method of reliability was also used to ascertain the reliability co-efficient by this method.

The inventory was validated against the existing index of teaching style in English developed by Palermo.

2. What Type of Person are You? Test

What type of Person Are You? is a brief screening device for identifying creativity gifted adolescents and adults (Torrance and Khatena 1970). The rational is that an individual has a psychological self whose structure incorporates both creative and non-creative ways of behaving. These ways may be discerned by the choices one makes to a 50 item forced choice checklist of alternatives (dichotomies) that are socially desirables or undesirable and relatively creative or noncreative. Torrance (1962) surveyed over 50 studies and identified a list of 84 characteristics which differentiated creative from non-creative individuals. Then Torrance reduced the list of 85 to 66 characteristics. Later he used these characteristics in a variety of studies to find out the general notion of the teachers and parents concerning that characteristics should hearten or dishearten in working with children and young individuals. Thirdly, he collected the ranking of these characteristics by a panel of ten advanced research students of creative personality. On the basis of ranking by judges 50 items were retained in the test constructed by pairing the differing characteristics of differing ranks. This test was adapted in Hindi by Nisha and Gupta. In the present research work Hindi version of the test was used for data collection.

The test in India was standardised on 1500 subjects from four districts of U.P. This test can be administered to individuals as well to group. The test can be easily administered. After collection of papers from subject the administrator should check, that all the items are attempted. There is no time limit for the test but most subjects complete the test in 10 to 15 minutes. The test can be scored rapidly by means of a punched key that is included together

with a list of the creative responses for which credit is given. A score of one (1) allotted for favourable response.

Reliability and Validity

The reliability coefficient of the test was estimated by spirit half, rational equivalence of test method. The split half reliability was computed on a sample of 200 subjects by using Spearman-Brown Prophecy formula. The reliability coefficient was obtained 96. In addition, the rational equivalence reliability or Kuder Pichardon reliability formula 21 (K_R_21), was computed for 200 subjects which came out to be 94. Computation of test retest reliability was done using data from several sources and a varying time interval. The reliability coefficients ranged from 0.86 to 0.90. The reliability coefficient on the sample of students is 0.90 for a retest on the same day. It was 0.82 for the time interval of a week and 0.68 for the time interval of a month between the first and second examination (for comparison with the results to Torrance and Khatena see Table 2. A sample of 200 subjects from the primary school teachers took the same test twice a time interval of one week and reliability coefficient of 0.86 reported.

Table 2
Correlation between scores on W.K.P.Y. Test in Two Situations with Variations in the Intervals

Group	N	Time Interval	r
Univ. of Minnesota	18	One week	.91
Univ. of Carolina	26	Same day	.97
Univ. of Carolina	47	One week	.71
Univ. of Carolina	27	One month	.73

The various approaches taken by researchers to find validation criteria for the test of creative thinking and mental functioning have led to the use of psychological tests, ratings by self and others, rating of products, biographical information derived from questionnaires, checking, inventories and so on. Several of these procedures have been used to obtain validity indices for the What Kind of Person Are You Test while realising the limitations of their frame of reference.

The validity coefficient of the Hindi version of the test was obtained against the original English version by Torrance and Khatena (1970). Both the test was administered to a group of 40 primary school teachers. The validity coefficient of 0.68 was found for two measures. One correlating the scores on this test with self

rating of one group of 100 psychology students and 100 college freshmen, validity coefficient of correlation were obtained 0.41 and 0.33 respectively.

Procedure of Data Collection

The researcher met the principals and teachers of various English Medium and Hindi Medium schools and cleared the objective of the research work. Questionnaires were duly filed, the data was thus collected and scores were tabulated.

Statistical Techniques Used

The obtained data was subjected to necessary statistical computation. The data were mainly analysed in the terms of mean, median, standard deviation and coefficient of correlation. The CR (Critical Ratio) was used to find the significance of correlation and was determined by reading the critical values 'r' from the table of Critical Values for Pearson's Product – Moment Correlation at various levels of significance.

Analysis, Interpretation and Discussion of Results

The present study tends to study the styles of teaching of Hindi Medium and English Medium schools and to find out whether there exists any difference between the teaching styles of both mediums of school teachers. To categorise the teachers into traditional and objective based styles the median of scores collected on the test for styles of teaching (How do you teach?) was calculated. The teachers scoring above the value of median (110.29) were marked as teaching through objective based style and teachers scoring below the median value were marked as teaching through traditional style. Following table shows the percentage of teachers thus selected.

Table 3
Style of teaching used by teachers

S. No.	Group (Teachers)	Total No.	Traditional Style		Objective Based Style	
			No.	%	No.	%
1.	English Medium	260				
(a)	Male	130	34	26.15	96	73.85
(b)	Female	130	50	38.46	80	61.54
2.	Hindi Medium	260				
(a)	Male	130	92	70.76	38	29.24
(b)	Female	130	87	66.92	43	33.08

The table 3 indicates that English Medium teachers, male as well as female mostly prefer objective based teaching while majority of Hindi Medium teachers adopt traditional styles for instruction. In English Medium schools, majority of teachers using objective based style are males (96%) though female teachers are also not lagging behind (80%). In Hindi Medium schools, majority of male teachers are using traditional style (70.76%) which is followed by female teachers (66.92%). Thus, we find that English Medium teachers show a preference for Objective based style while Hindi Medium teachers choose to follow Traditional style of teaching.

The first hypothesis of the study was stated thus, "The teachers of Hindi Medium and English Medium schools do not differ in their styles of teaching." Following comparisons were made to test the hypothesis.

Table 4
Significance of difference in the mean scores of teacher's style of teaching

S.No.	Groups	Number	Mean	S.D.	C.R.
1.	English Medium Male (T.S.) Hindi Medium Male (T.S.)	34 92	106.05 96.80	3.37 8.31	8.88**
2.	English Medium Male (T.S.) Hindi Medium Male (T.S.)	50 87	98.84 101.39	9.94 3.59	1.75(NS)
3.	English Medium Male (T.S.) Hindi Medium Male (T.S.)	84 179	101.76 99.03	8.73 6.86	2.52*
4.	English Medium Male (OBS) Hindi Medium Male (OBS)	38 96	118.42 123.76	4.52 9.58	4.36 **
5.	English Medium Male (OBS) Hindi Medium Male (OBS)	80 43	112.98 118.79	9.07 4.75	3.36**
6.	English Medium Male (OBS) Hindi Medium Male (OBS)	176 81	123.40 118.61	9.37 4.65	5.47**
7.	English Medium Male (T.S.) Hindi Medium Male (OBS)	34 96	106.05 123.76	3.37 9.58	15.56**
8.	English Medium Male (T.S.) Hindi Medium Male (OBS)	50 80	98.84 122.98	9.94 9.07	13.93**
9.	English Medium Male (T.S.) Hindi Medium Male (OBS)	84 176	101.76 123.40	8.73 9.37	18.25**

10.	English Medium Male (T.S.) Hindi Medium Male (OBS)	92 38	96.80 118.42	8.31 4.52	19.04**
11.	English Medium Male (T.S.) Hindi Medium Male (OBS)	87 43	101.39 118.79	3.59 4.75	22.21**
12.	English Medium Male (T.S.) Hindi Medium Male (OBS)	179 80	99.03 118.61	6.86 4.86	26.901**
13.	English Medium Male (T.S.) Hindi Medium Male (OBS)	34 38	106.05 118.42	3.37 4.52	13.23**
14.	English Medium Male (T.S.) Hindi Medium Male (OBS)	50 43	98.84 118.79	9.94 4.75	12.618**
15.	English Medium Male (T.S.) Hindi Medium Male (OBS)	84 81	101.76 118.61	8.73 4.65	15.55**
16.	English Medium Male (T.S.) Hindi Medium Male (OBS)	92 96	96.80 123.76	8.31 9.58	20.62**
17.	English Medium Male (T.S.) Hindi Medium Male (OBS)	87 80	101.39 122.98	3.59 9.07	19.90**
18.	English Medium Male (T.S.) Hindi Medium Male (OBS)	179 176	99.03 123.40	6.86 9.37	27.95**

T.S. = Traditional style
OBS = Objective Based Style
* = 0.05 level of significance
**=0.01 level of significance
NS= Not Significant

The comparison made in Table no. 4 indicates that in almost every group, there is a significant difference between the teaching styles of both mediums of schools teachers. The first hypothesis is thus rejected. It is worth noticing that in almost every comparison made, the number of teachers using the traditional teaching method is high in Hindi Medium schools. Perhaps the social setting of Hindi Medium teachers encourages (or forces) them to follow traditional teaching style. Earlier studies also reveal that teaching style is related to teacher's conceptual level, type of institution attended and personal and social interactions and mutual relationships (Heikkinen, 1997; Robinson, 1983; Lipson, 1974; Sierra, 1976; Rodrigues, 1982; Albabtain, 1982). Teaching styles may vary with sex (Robinson, 1993; Albabtain, 1982), though some studies refute this observation (Hollis, 1976; Malhotra, 1981). The traditional teaching styles of female teachers of both medium schools do not allow any significant difference. All other comparisons made clearly indicate that the teachers are significantly different in using traditional as well as objective based styles of teaching.

To test the second hypothesis of the study i.e., "There is no significant difference in the creativity of compared groups of teachers", following comparisons have been made.

Table 5
Significance of difference in the mean scores of teacher's creativity

S.No.	Groups	Number	Mean	S.D.	C.R.
1.	English Medium Male (T.S.) Hindi Medium Male (T.S.)	34 92	22.82 21.57	4.80 4.26	1.33(NS)
2.	English Medium Male (T.S.) Hindi Medium Male (T.S.)	50 87	22.44 22.67	4.94 5.08	0.26(NS)
3.	English Medium Male (T.S.) Hindi Medium Male (T.S.)	84 179	22.59 22.11	4.89 4.71	0.75(NS)
4.	English Medium Male (OBS) Hindi Medium Male (OBS)	38 96	21.89 22.13	4.72 4.79	0.25(NS)
5.	English Medium Male (OBS) Hindi Medium Male (OBS)	80 43	21.73 21.09	4.54 4.52	0.75(NS)
6.	English Medium Male (OBS) Hindi Medium Male (OBS)	176 81	21.82 21.58	4.64 4.68	0.38(NS)
7.	English Medium Male (T.S.) Hindi Medium Male (OBS)	34 96	22.82 21.89	4.80 4.72	0.97(NS)
8.	English Medium Male (T.S.) Hindi Medium Male (OBS)	50 80	22.44 21.73	4.94 4.54	0.81(NS)
9.	English Medium Male (T.S.) Hindi Medium Male (OBS)	84 176	22.59 21.82	4.89 4.64	1.21(NS)
10.	English Medium Male (T.S.) Hindi Medium Male (OBS)	92 38	21.57 22.13	4.26 4.79	0.62(NS)
11.	English Medium Male (T.S.) Hindi Medium Male (OBS)	87 43	22.67 21.09	5.08 4.52	1.08(NS)
12.	English Medium Male (T.S.) Hindi Medium Male (OBS)	179 81	100.37 102.87	21.41 19.30	1.37(NS)
13.	English Medium Male (T.S.) Hindi Medium Male (OBS)	34 38	106.11 106.47	19.01 16.77	0.61(NS)
14.	English Medium Male (T.S.) Hindi Medium Male (OBS)	50 43	104.60 99.69	14.01 20.78	1.37(NS)
15.	English Medium Male (T.S.) Hindi Medium Male (OBS)	84 81	105.21 102.87	16.24 19.30	1.36(NS)
16.	English Medium Male (T.S.) Hindi Medium Male (OBS)	92 96	105.29 101.27	21.38 22.85	0.48(NS)
17.	English Medium Male (T.S.) Hindi Medium Male (OBS)	87 80	95.18 104.12	20.17 16.38	1.26(NS)
18.	English Medium Male (T.S.) Hindi Medium Male (OBS)	179 176	100.37 102.85	21.41 18.71	0.58(NS)

All the eighteen comparisons made to test the hypothesis observe that the difference in the creativity of the observed groups

of teachers is not significant. Thus, hypothesis No. is rejected. Indirect teaching styles expected to have a positive effect on the measures of creativity. Studies have suggested that they may be useful in evaluating the quality of teaching (Bennet and Jordan, 1975). Several research studies can be referred to state that creativity affects the teaching methods of a teacher (Palermo, 1965; Bennet and Jordan, 1975). No significant difference emerges in the creativity of teachers either on the basis of their sex or medium of instruction. Earlier studies also support the results drawn from this study that creativity of a teacher does not depend upon his sex (Sierra, 1976). Though certain expectations to this observation may be found (Deshmukh, 1979); but generally creativity of teachers is something that depends on their latent talent and approach rather than their sex or medium of instruction.

The third hypothesis states that the teaching styles of teachers are not related with their creativity. To test this hypothesis the correlation between teaching styles teachers and their creativity was observed.

Table 6
Correlation between Teacher's Style of Teaching and their Creativity

S. No.	Groups	S.O.T.	N	r	Significance
1	Hindi Medium Male	T.S. OBS	92 38	-0.027 -0.0131	N.S. N.S.
2	Hindi Medium Female	T.S. OBS	87 43	-0.117 -0.166	N.S. N.S.
3	Total Hindi Medium	T.S. OBS	179 81	-0.0084 -0.15	N.S. N.S.
4	English Medium Male	T.S. OBS	34 96	0.15 0.09	N.S. N.S.
5	English Medium Female	T.S. OBS	50 80	0.21 -0.07	N.S. N.S.
6	Total English Medium	T.S. OBS	84 176	0.136 -0.013	N.S. N.S.

S.O.T. = Style of Teaching

Table No. 6 indicates that there is a non-significant correlation between each group of teachers and their creativity. This proves that the styles of teachers do not affect their creative potential and vice versa. Thus the hypothesis is accepted.

Every teacher has a 'tailor-made' combination of methods and techniques to achieve his/her aim of teaching. When an attempt is made to study the relation of teacher's teaching styles with

their creativity, we often fumble with the notion that more creative teachers must be using a higher level of objective based style for teaching in classes; and teachers low on creativity scale must be more traditional in their style. But the present study, as well as earlier studies (Heikkinen, 1979; Parsisi, 1980) have brought forth that teachers' teaching styles do not have any noticeable correlation with learner achievement, information processing, behaviour modification and electic capabilities. Teaching styles have often been associated with the sex and age of teacher (Mayne, 1979; Hollis, 1976; Malhotra, 1981). Though some studies have observed that active learning processes are more productive than traditional teaching activities as lecture or homework but these activities take longer to complete (Horward J. et. al. 1986; Karl and James, 1970; Higgins and Lorrie, H. 1981). Objective based teaching styles have been highly acclaimed in the field of education (Ecole Polytechnique Federale De Lausanne, EPEL, 2010; Jonathan, 2003; Galton, et.al. 1980; Siedentop, 1991). Thus, the teaching styles may not be directly or significantly related with the creativity of teachers, it cannot be omitted that modern concept of education is child and activity centred, and each new activity requires and demands creativity.

Suggestions

A single research in a confined manner with a specific population cannot produce the conclusive result for validation and generalisation. A larger sample drawn from various colleges and universities may further investigate into the depths of teaching styles and creativity of teachers. A study of factors responsible for the development of a particular teaching style in a teacher is quite desirable. The role of teaching experience and training either pre-service or in-service may be considered in further research of this kind. Same research may also be conducted after a lapse of time.

Conclusion

Teachers may play the key role in the whole business of education having the psychological entity with ideas, thoughts, feelings, emotions, attitude etc., that come as driving forces on the way of their teaching profession. Every teacher develops his own style of teaching. The study indicates that the majority of teachers, irrespective of the medium of instruction they use, prefer objective based style. Though they make use of traditional teaching methods

like lecture, homework, lesson demonstration, tutorials etc. as and when the need arises. It cannot be said that a teacher preferring traditional methods shall never use modern methods for teaching and *vice versa*. In fact, every teacher requires an innovative idea or solution for every situation or task that challenges him/her in the classroom, there can be no rote solution for any situation though oft repeated. That is what teaching-learning is all about – choosing the right method at the right time, at the right place for a right cause. We may call it individuals 'teaching style', we may entitle it as individual's 'creativity'.

REFERENCES

Agastya. 2009. Sparkling Creativity in Rural India, *Report on Primary Education*. (http://www.agastya.org/why/primaryeducation.html)

Al-Babtain, Abdul-Aziz, Abdul-Wahab.1982. The Investigation of the Relationship between Teacher Effectiveness and Indirect and Direct Teaching of Intermediate Social Science Teachers in Riyadh, Saudi Arabia. (Doctoral Dissertation, Univ. of Northern Colorado). *Dissertation Abstract International* 43:134- A; No. 1.

Badrunisha and Gupta Kiran. *What Type of Person are You? (Aap Kis Prakaar Ke Vyakti hain?)* National Psychological Corporation, Agra, U.P.,India. c.1977

Bennet, S.N. and Jorden, J. 1975. *A Typology of Teaching Styles in Primary schools*, *Dr. j. Educ. Psych.* 20, 28.

Bruce R. Boller. 2008. Non-Traditional Teaching Styles in Physics. Issues of Education at Community Colleges. (http://www.compadre .org/per/item/detail.cfm?id=4402)

Danielson, C. 2013. The Framework for Teaching, *Evaluation Instrument* - ISBN: 978-0615597829.Princeton,NJ 08543, U.S.A., America.

Deshmukh, M.N. 1979. Educational Technology for Creative Education, *The Education Quarterly*, April.P.28-31.

Ecole Polytechnique Fedrale De Lausanne (EPPFL). 2010. Teaching Objectives; What are the Learning Objectives of My Course? (http://teching.epfl.ch/page19238-en_us.html)

Ferlazzo. 2012. Several Ways We Can Help Students Develop Their Creativity - Classroom Q&A - *Education Weak Teacher.htm.*

Galton, M., Simon, B. and Croll, P.1980. Inside the Primary Classroom. London; Routledge & Kegan Paul.(http://www.sports_media. Org.)

Haviland. 2012. Encouraging Teachers to Teach Creativity. *Teaching Creativity Professional development for Teachers.htm.*

Heikkinen, Michael Wayne.1979. The Teaching Style Q. Sort and Its Use in Examining Relationships Between Teaching Style and Selected Teacher Variables.(Doctoral Dissertation, Univ. of Idaho). *Dissertation Abstract International* 38:1198A;No.3.

Hein, Ries and Pires 2012. The Relation Between Teaching Styles and Motivation to Teach Among Physical Education Teachers. J*ournal of Sports Science and Medicine* 11, 123-130.(http://www.jsm.org)

Henriksen and Mishra. 2013. Creativity Now, Learning from Creative Teachers, Conference Countdown, *National Harbour*, Md. Volume 70. No. 5.

Higgins Norman; Hegstad Lorrie. 1981. Teaching Teachers Skills Needed to Impliment Objective Based Instruction, Paper presented at the Annual Meeting of the Association for Educational Communications and Technology, Arizona State University, Philadelphia. (http://www.eric.ed.gov/ ERIC Web Portal/custom/portlets/record details/detailmini.)

Hollis, Royestes. 1976. Effects of Direct Vs. Indirect Teacher Verbal Behaviours on Third Grade Children's LE Locus of Control. (Doctoral Dissertation, Boston College) *Dissertation Abstract International* 37:883-A; No. 1.

Howard, J. Sullivan, Robert, C. Lievens, Eleanor, M. Villalpando, Charles Marquez, Gary Walkins.1986. *Supplementing Traditional Instruction with Objective Based Instructional Development*. Arizona State University, Educational Technology, College of Education, Tempe, AZ 85287. vol. 9, No. 2

Jha, J.S. 1972. A Comparative Study of The Attitude of Parents Towards English Medium and Non-English Medium Schools. *M. Ed. Dissertation*, University of Allahbad, U.P. India.

Jonathan Doherty. 2003. *Teaching Styles in Physical Education*; Leeds Metropolitan University, Leeds; U.K. (http://www.sports_media.org/sportapolisnewsletter23newlook.htm)

Julie White. 2008. La Trobe University, Australia. Sustainable Pedagogy: A Research Narrative About Performity, Teachers and Possibility. Journal of the International Association for the Advancements of Curriculum Studies-TCI-Online Publications.

Kaoru Yamamoto. 2005. Arizona State University, U.S.A., *Creativity and Higher Education: A Review Journal of Higher Education*, ISSN: 1573-174X(Online). P 213-215.

Karl H. Vesper and James, L ADAMS. 1970. Teaching objectives, styles and effect with the case method in engineering. *The Journal of Experimental Education*, vol. 39, No. 2 (www.org/pss/20157179)

Katsioloudis Petros and Fantz D.todd.2012. A Comparative Analysis of Preferred Learning and Teaching Styles for Engineering, Industrial and Technology Education Students and Faculty. *Journal of Technology Education,* vol. 23 No. 2.

Kenneth M. Heilman, MD. 2003. Creative Innovation: Possible Brain Mechanisms. Neurocase.(http://www.neurology.med.ohiostate.edu/cognitivelab/ceativitymechanisms.pdf)

Kumar. G., and Jain Shipra. 1987. *How do you Teach?* Developed and Constructed by P.G. Department of Educational Research. Hindu College, Moradabad, U.P., India.

Lipson, D.E. 1974. Gearing Up for Robotics ; An Investigation into the acquisition of the Concepts Associated with Gears by Teachers in a Constructionist Robotics Environment, In Learning to Live in the Knowledge Society.

Malhotra, S.P. 1981. Teacher Classroom Behaviour in Relation to Presage variables of Teacher attitude and Adjustment, and Product Variables of Students' linking of Perceived Behaviour by Teachers, Principals and Self. *Indian Educational Review; A Research Journal*, XIV, i,v PP. 81-84.

Marvin Bartel, 2008. Teaching Creativity (http://www.goshen.edu/-marvinpv/arted/tc.html)

Mayne, Martha Bauer. 1979. Teacher Cognitive Style and Teaching Behaviour in the University. (Doctoral Dissertation, Univ. of Oklahoma). *Dissertation Abstract International* 40:1906 - A; No. 4.

Michael Walter Mitchell. 2010. (http://ehow.com/vedeo-4993303 -document-using-traditional-mlamethods.html)

Oech Von Roger, Rudolph Flesch and Edward De Bono. 2000. Creativity and the Thinking Process. (http://www.gesher.org)

Palermo, R.R. 1965. A Study of Relationship of Students' Description of Teacher's Style of Teaching and Teacher's Creativity. Doctoral Thesis, Western Research Uni.

Parisi, Joseph C. 1980. An Investigation into the Relationship between the Field Dependent — Independent Cognitive Styles of Teachers and Student Rating of College Teachers. (Doctoral Dissertation, State Univ. of New York at Albany) *Dissertation Abstract International* 41 : 520 -A; No. 2.

Rastogi Praveen. 2006. A Comparative Study of Students' Attitude towards Hindi Medium and English Medium Schools. M.Ed. *Dissertation*, M.J.P. Rohilkhand University, Bareilly, U.P., India.

Reed Jerry.2012. Effective Teaching, CALLERLAB.

Robinson, Allan Richard. 1993. An Investigation into the Relationship Between Teaching Styles and Learning Styles. (Doctoral Dissertation, Northern Illinois Univ.) *Dissertation Abstract International* 43:3501-A: No.11.

Sheng Qunli, Ma Lan, and Chu Xiarhua. 2008. On Objective-Based Instructional Design, *Educational Research*, Vol. 29 No. 5, PP 73-78.

Siedentop, D.1991. Developing Teaching Skills in Physical Education. Palo Alto, CA: May Field. (http://www.sports_media.org)

Sierra, Viola R. 1976. An Investigation of the Relationship of Ethnicity and Sex to Intelligence and Certain Dimensions of creativity Diss. Abs. Int-A, 37, PP. 6404.

Sullivan, Ceri and Harper. G. 2009. Ed., *The Creative Environment: Authors at Work* (Cambridge English Association/Boydell and Brewer)

Torrance, E.P. 1962. Guiding Creative Talent, Englewood Cliffs, NJ; Prentice-Hall.

Torrance, E.P. and Khatena, J. 1970. What Kind of Person are You? *Gifted Child Quarterly*, 14, 71 - 75.

Occupational Stress among Female Teachers in Relation to their Personality Pattern and Marital Status

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Abstract

The purpose of this study was to identify individual factors (personality type and marital status) in order to understand why under nearly the same environmental conditions some female teachers suffer much greater levels of occupational stress than others. A sample of 121 female teachers was administered – Occupational Stress Index (OSI) constructed and standardised by Srivastava and Singh to measure the occupational stress and Dhar and Jain's Type A/B Behavioural Pattern Scale (ABBPS) to know the personality patterns. By applying A×B Factorial ANOVA followed by Scheffe Technique the study revealed: (i) the respondents of personality type A (having the characteristics of tenseness, impatience, restlessness, achievement orientation, domineering and workaholic) are found to have significantly more occupational stress than their type B (characterised by complacent, easy going, non-assertive, relaxed and patience) and not clear type personality pattern counterparts. Moreover, the not clear personality pattern respondents are found to be significantly more stressed than the respondents of type B personality pattern, (ii) the married and unmarried respondents do not differ significantly on the level of occupational stress, (iii) the personality pattern and marital status of the female teachers do not interact significantly to determine their occupational stress. As the personality type A are having the high level of occupational stress, it can be inferred that if they (the female teachers having the personality type A) are any how convinced/ motivated to control their this behavioural pattern, they may be able to come down to the moderate level of occupational stress and of course, that will contribute positively to the work performance.

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Introduction

Stress at work resulting from increasing complexities of work and its divergent demand has become a prominent feature of the modern organisations. Stress, as opined by Robinson (2007) is a pressure of adverse influences, circumstances, etc. that disturbs the natural physiological balance of the body. In other words, the condition that can result from being under this kind of pressure which manifests in physical, mental and emotional disturbance. Malow-Iroff and Johnson (2006) are of the view that stress is the individual's response to the life events (such as response to our biological temperament, interaction with others and the environmental conditions in which one is placed, etc.) and the events themselves are the stressors. They further hold that the low levels of stress can add excitement and challenge to life, prodding us to move ahead in the workplace and to engage in new activities. The stress caused by life events on the individual are not a problem until the individual finds he or she can no longer handle the situation competently and engages in poor coping skills. Symptoms of stress can include irritability, fear, depression, aggression and substance use. Thus, the stress reactions occur on an individual level and are determined by a combination of cognitive and situational influences.

Lazarus (1996) has termed 'cognitive appraisal' to the life events as stressful. A cognitive appraisal occurs when an individual interprets an event as harmful, threatening or challenging and determines whether he or she possesses the resources necessary to cope with the event. According to him, the appraisals of life events occur in a two step process. First, the individual engages in a primary appraisal to determine whether the event involves harm or involves future danger or is a challenge to be overcome. In the next step, the secondary appraisal, the individual evaluates his or her resources and determines how to cope with the event. The coping involves the strategies, skills and abilities that the individual possesses to handle the stress. Thus, for Lazarus, an individual's experience of stress is the balance between the primary and secondary appraisals: if a threat is perceived as high and the secondary appraisal determines that the challenge and the resources are low, then the stress experienced by that individual is likely to be high. According to Bridges (2003) individual approaching stressful events with a problem solving approach rather than an avoidance strategy, will cope better with the event. Additionally, individuals having learned a number of coping strategies to handle life's ups and downs are placed in the most optimal situation.

Some researchers have emphasised the role of job situations in their definitions of job occupational stress. Caplan et al. (1975) have accordingly defined occupational stress as any characteristic of job environment which possess a threat to the individual. Cooper and Marshal (1976) have expressed that by occupational stress is meant negative environmental factors or stressors associated with a particular job. But some other researchers have tried to define it in terms of interaction between worker and work environment. The definition proposed by Margolis et al. (1974) falls in this category. They defined stress as a condition of work interacting with worker's characteristics to disrupt his or her psychological or physiological homeostasis. Similarly, Beehr and Newman (1978) described job stress as a condition wherein job related factors interact with the worker to change (disrupt or enhance) his or her psychological conditions such that the person is forced to deviate from normal functioning.

French et al. (1974) proposed the 'person-environment fit' perspective of occupational stress. According to this theory, poor fit or misfit between employee and his or her work and his or her environment results in stress along with psychological and health strains. The theory is based on the assumption that people vary in their needs, expectations and abilities just as jobs vary in their requirements, demands and incentives. When there is poor fit between the characteristics of the employee and of the job, person-environment fit theory predicts that the employee's well being will be affected. According to this theory, a good person-environment fit occurs when the supplies in the environment (money, support from superiors and achievement) are sufficient to satisfy motives of the employee.

In the recent years, there has been an increased use of role theory to describe and explain the stresses associated with membership in organisation. The concept of role is the key in understanding the integration of the individual in a system. Normally, performance of a role satisfies various needs of its occupant but sometimes it becomes a potential source of stress too for the role occupant. The problem a role occupant faces today is that of managing the complex structure of roles by achieving an integration of one's self with the system of other roles as well as integration of various roles a person may occupy. The role theory researchers identify two basic sources of role stress, i.e., role conflict and role ambiguity. Kahn et al. (1964) opines that role conflict arises when the various members

of the role set hold quite different or conflicting role expectations towards a focal person. They may impose pressures on that focal person towards different kinds of behaviour at a time. To the extent that these different role pressures (expectations) give rise to role forces within him or her, he or she will experience a psychological conflict. Actual degree of objective role conflict depends upon the configuration of role pressures actually exerted by role senders (members of the role set) on the role occupant.

Another pattern of inadequacy in role sending causing stress constitutes role ambiguity. Again, Kahn et al. (1964) held that each member of an organisation must have certain kinds of information at his or her disposal in order to perform his or her job adequately and smoothly. He or she must also know the potential consequences of his or her role performance and non-performance for himself or herself, his or her role sender and for the organisation in general. Non-availability of adequate information about the above mentioned job aspects causes' role stress to the focal employee. Actually role ambiguity is a direct function of the discrepancy between the information available to the employee and that which is required for adequate performance of his or her job role.

Sources of Occupational Stress

All the sources of occupational stress may be broadly classified into the following three categories:

Individual characteristics: These characteristics include personal characteristics such as beliefs and values (Bachkirova, 2005), aspiration and expectancy, need structure and attribution, coping skills, cognitive patterns (Kobasa, 1979), personality pattern and personality traits (Mittal, 1992; Sharma et al., 1998; Jepson and Forrest, 2006), anxiety (Spielberg, 1979; Sharma et al., 1998), locus of control (Srivastava and Krishna, 1992), job attributions (Gupta, 1999) and other factors such as age, sex (Sultana, 1995; Ahmad et al., 2003; Jepson and Forrest, 2006), health status, marital status (Gupta, 1982; Ahmad et al., 2003) and experience (Grebennikov and Wiggins, 2006; Jepson and Forrest, 2006).

Work setting variables: These variables include – job insecurity (Tytherleigh et al., 2005), job role (Ivancevich and Matteson, 1980), inter-role distance, role stagnation, role expectation conflict, role erosion, role overload (Hansen and Sullivan, 2003; Lazuras, 2006; Zhang, 2007), role isolation, self role distance, low salary and resource inadequacy (Hansen and Sullivan, 2003; Tytherleigh et al., 2005; Betoret, 2006).

Other variables: These variables include interpersonal relations at work (Payne, 1980; Tytherleigh et al., 2005; Lazuras, 2006), organisation structure and climate (Cooper, 1986; Ahmad at al., 2003; Lazuras, 2006) and quality of life (Daga, 1997).

General Consequence of Occupational Stress

Schuler (1980) submerged all the consequences of occupational stress under three general categories — physiological, psychological and behavioural symptoms. Physiological symptoms include increased heart and breathing rates, increased blood pressure, diabetes, peptic ulcer, headaches and heart attacks whereas psychological symptoms include job dissatisfaction, tension, anxiety, depression, irritation and boredom. Behavioural symptoms include low production (poor performance), absenteeism (from school) and burnout as well as changes in eating habits, increased smoking or consumption of alcohol and sleep disorders.

Positive Consequences of Occupational Stress

Stress is not always undesirable and harmful. It has a positive value as well. Hinkle (1973) has accordingly written that "to be alive is to be under stress." Ketz de Vries (1984) has noted that each individual needs a moderate amount of stress to be alert and capable of functioning effectively in the organisation. Anderson (1976) observed that a moderate level of stress is essential for performance whereas low and high degree of stress cause deterioration in performance level. Hall and Lawler (1971) found that job pressures involving time financial responsibility and quality factors were related to positive organisational outcomes. Srivastava and Krishna (1992) have identified five role stressors having positive value viz., responsibility for persons, excessive responsibility (with authority), taking decisions that affect others, strenuous tasks that bring recognition and facilitate personal growth and perceiving oneself not fully competent.

Teachers and Occupational Stress

Teacher stress as opined by Kyriacou (2001) is the experience by a teacher of unpleasant, negative emotions such as anger, anxiety, tension, frustration or depression resulting from some aspect of their work as a teacher. There is a pervasive perception among teachers and those who study their behaviour that they suffer a good deal of occupational stress. Studies have found

approximately one third of teachers surveyed have reported their job as highly or extremely stressful (Kyriacou and Sutcliffe, 1978; Broiles, 1982; Borg and Falzon, 1989; Soloman and Feld, 1989; O' Connor and Clarke, 1990; Guglielmi and Tatrow, 1998; Pithers and Soden 1998). Furthermore, there is research evidence that work related stress among teachers has serious implications for their work performance, health and psychological status (Capel, 1987; Cooper, 1986; Pierce and Molloy, 1990). The health problem can take the form of coronary artery disease, alcoholism, fatigue, recurring headaches, insomnia, nervous tension (Cooper, 1986; Kyriacou and Prati, 1985), abdominal complaints, vulnerability to virus infection, respiratory disorders, muscular tension, gastrointestinal disorders and mental ill health (Kyriacou and Sutcliffe, 1978). Stress also has been associated with reduced immune functioning and resultant infectious diseases, peptic ulcers and hypertension (Lobel and Dunkel-Schetter, 1990). In addition, obesity and diabetes, as well as faulty lipoprotein metabolism and atherosclerosis have been associated with stress (Brindley and Rolland, 1989). Psychological factors linked to stress include high anxiety, depression, irritability at home, irritability in the classroom, hostility feeling of powerlessness and futility, propensity to depersonalise others, emotional exhaustation, lowered self-esteem and burnout (Farber, 1984; Capel, 1987; Pierce and Molloy, 1990). Health and psychological outcomes can lead to poorer teaching performance, poor job satisfaction, increased absenteeism, poor decision making and bad judgment (Eckles, 1987; Quick and Quick, 1984). This often leads to a breakdown in personal work and home relationships and perhaps, finally, to total emotional breakdown (Hendrickson and La Barca, 1979). Stress impacts greatly on teachers' retention. A study reported by Jarvis (2002) found that 37 per cent of the vacancies at secondary school level and 19 per cent of the vacancies at primary school level were due to ill-health (long absenteeism) as compared to 9 per cent of vacancies in nursing profession and 5 per cent of the vacancies in banking and the pharmaceutical industry. Recruitment also appears to be affected by representations of stress. Schools have the serious financial implications associated with recruiting and replacing burned-out teachers opted to leave the profession altogether.

The schools consisting of stressed teachers and the pupils enrolled in those schools may not get as effective professional services from the teachers as is expected otherwise. There is also

a chance that work stress may encourage absenteeism, early retirement and resignations of the teachers from the education system, and creating an unmanageable loss to the society and nation as a whole. Therefore, all those factors which influence occupational stress of teachers and its consequences must be studied thoroughly.

Now-a-days when India is progressing by leaps and bounds, her economy is booming, she has acquired nuclear power and is on the verge of becoming a developed nation; she can not afford to neglect the talent of her women workforce which is increasing very fast. The working women have to shoulder two different type of responsibilities—one at their home taking care of their husband, children and family as a whole while on the other hand they have to be dedicated for their work. Thus, their varied interpersonal relations, work related stress and different roles played at home may cause ill to their mental as well as physical well-being. Though the women in India are working in every sphere of life but the profession in which they have attained more success than the other professions is teaching. It would have been better to undertake the research study by taking individual and environmental factors, but due to delimitation with respect to time and resources, the present research has been undertaken to identify individual factors namely personality patterns and marital status in order to understand why under nearly the same environmental conditions some women teachers suffer much greater levels of stress than others. It is in this specific context that the present study was undertaken to provide empirical answers to the above raised question.

Objectives of the Study

For the present study, the personality type and marital status of the female teachers have been taken as independent variables to see the effect of these variables on the occupational stress of the female teachers.

Keeping in view the above-mentioned variables, the investigator started the work with the following objectives:

1. To study the difference in the level of occupational stress among female teachers in relation to their personality type and marital status.
2. To find out the difference in the level of occupational stress among female teachers in relation to the interaction of the two variables.

Hypotheses

Corresponding to the objectives of the present research, the following null hypotheses were framed for empirical verifications:

H_{01}: There will be no significant difference in the level of occupational stress among female teachers in relation to their personality type

H_{02}: There will be no significant difference in the level of occupational stress among female teachers in relation to their marital status.

H_{03}: Personality type and marital status do not interact significantly to determine occupational stress of female teachers.

Population and Sample of the Study

The population of the study constitutes the female secondary school teachers of the five eastern U.P. districts namely Azamgarh, Ballia, Ghazipur, Jaunpur and Mau. The full research work was carried out by taking the sample of not only women teachers but also of the women doctors, nurses, police and social workers. The research paper was restricted to teachers only as per the objective of the study. Keeping in view, the objectives of the study, the sample of 121 female teachers is selected through purposive sampling technique as per the justification mentioned in the following lines:

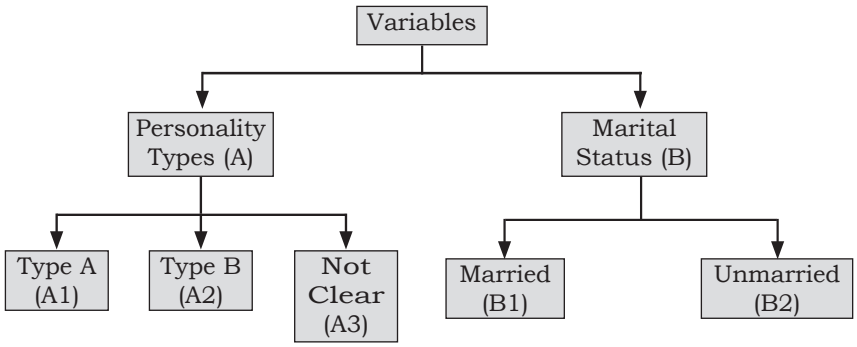
- The selected districts had the sufficient number of the working women (from 5 different occupations namely teacher, doctors, nurses, police and social workers).
- The selected districts were in approachable distance from the place where the researchers were posted (district Azamgarh). This was done keeping in view the feasibility of the data collection because many times the selected unit has to be contacted twice/ thrice especially in the case of above mentioned occupations.
- To ensure the homogeneity of the sample with respect to socio-cultural background, the sample has to be restricted in one common region.
- This region (Eastern U.P.) has the mixed population regarding the work culture and the working women may have the stress problem in their work occupation.
- There were 70 districts in the State U.P. at the time when the research work was carried out divided into 18 zones; 30 districts falls in Eastern U.P. region spreading in 8 zones.

- 15 per cent of the districts, i.e., 4.5 or 5 were selected from Azamgarh zone (Azamgarh, Ballia and Mau) and Varansi zone (Ghazipur and Jaunpur).
- Per district sample size is 24 except the district Azamgarh where it is 25.

Design of the Study

In the research design of this study, the occupational stress of the female teachers has served as criterion or dependent variable whereas their personality type and marital status as predictive or independent variables. As far as the nature of the design of the present study is concerned, it is an exploratory one.

The diagrammatic view of the variables involved in the study is given below in the following figure:



Tools Used

For the purpose of data collection, the following standardised tools were used:

1. To measure the occupational stress the investigators used the Hindi version of Occupational Stress Index (OSI) constructed and standardised by Srivastava and Singh (2003). It is a 46 items scale out of which 28 items are true keyed while 18 items are false keyed. The scale has the 12 dimensions (role overload, role ambiguity, role conflict, unreasonable group and political pressure, responsibility for persons, under participation, powerlessness, poor peer relations, intrinsic impoverishment, low status, strenuous working conditions and unprofitability), The authors claimed that the split half (odd-even) reliability and Cronbach's alpha coefficient for the scale were found to be 0.94 and 0.90 respectively and the scale is highly valid as it is

highly correlated with Job Involvement Scale, Work Motivation Scale and Job Satisfaction Scale.

2. In order to know the personality patterns, the investigators used Hindi version of Type A/B Behavioural Pattern Scale (ABBPS) constructed and standardised by Dhar and Jain (2001). It is divided in two parts — Form A and Form B. Form A contains 17 items from six dimensions (tenseness, impatience, restlessness, achievement orientation, domineering and workaholic) and form B 18 items from five dimensions (complacent, easy going, non-assertive, relaxed and patience). The authors claimed the reliability coefficient of the scale as 0.54 whereas, the validity of the scale was found to be 0.73. In this way the scale is highly reliable and valid.

Statistical Techniques

The following statistical techniques were used for the treatment of the data:

1. Frequencies, Percentages, Mean and SD
2. Test of significance between two percentages
3. Factorial Analysis of Variance (Factorial ANOVA): to analyse the independent and interactive effects of the independent variable(s) on the dependent variable(s).
4. Scheffe Technique: to locate the level(s) of the independent variable(s) at which the significant difference occurs

Analysis and Interpretation:

The number of respondents in the three types of personality patterns and two levels of marital status along with the different possible combinations of these two variables with their mean occupational stress scores are presented in the Table 1.

From Table 1 it is clear that the mean occupational stress scores of the female teachers having personality pattern as type A is found to be 179.45 whereas this figure is 129.64 and 146.91 for the female teachers having type B and type C behavioural patterns respectively. The variations in these figures are on expected lines as the personality pattern A itself has the characteristics of being tensed, impatient, restlessness, achievement orientated, domineering and workaholic. Resulting in the low level of occupational stress in the female teachers having this type of behavioural pattern has also been clearly justified as the personality type B has the characteristics of being complacent, easy going, non-assertive,

Table 1
Mean occupational stress scores

Group	N	M	SD
Type A (A1)	51	179.45	28.95
Type B (A2)	47	129.64	37.55
Type C/Not Clear (A3)	23	146.91	33.12
Married (B1)	78	158.45	42.33
Unmarried (B2)	43	145.70	34.66
A1 B1	35	185.97	28.06
A1 B2	16	165.19	26.30
A2 B1	31	129.90	38.49
A2 B2	16	129.13	36.88
A3 B1	12	151.92	36.30
A3 B2	11	141.45	30.01

relaxed and patient. This becomes more justified when the difference among these figures is subjected to test of significance (Tables 3 and 4). The mean occupational stress scores of married and unmarried female teachers are found to be 158.45 and 145.70 respectively. The married female teachers are found to be more occupationally stressed than their unmarried counterparts may be due to the fact that married female teachers shoulder the responsibility of caring not only their own selves but their husband, children and even the larger responsibility in the case of joint family also resulting in more stress in their workplaces though this difference is found to be insignificant (Table 3).

Table 2 presents the degree of the level of occupational stress into three categories – high, average and low. The categories (of the levels) of occupational stress are made on the basis of M±1SD as follows:

High Level > M+1SD
M+1SD = Middle Level = M-1SD
M-1SD > Low Level

From Table 2 it is clear that 26 per cent of the respondents are found to be highly stressed whereas 53 per cent have average level of occupational stress. Only 21 per cent of the respondents are found to have low level of occupational stress. Among the Type A personality pattern (having the characteristics of tenseness, impatience, restlessness, achievement orientation, domineering and workaholic) the percentage of highly stressed female teachers is found to be significantly more (39 per cent) as compared to their low stressed counterparts of Type B (characterised by complacent,

Table 2
Degree of the level of occupational stress (OS) among the respondents

Level of OS	Total Teachers	Personality Type A (A1)	Personality Type B (A2)	Personality Type C (A3)	Married (B1)	Un-married (B2)	Groups compared	C.R.
High	31 (26%)	20 (39%)	08 (17%)	03 (13%)	23 (30%)	08 (19%)	A1 & A2 A1 & A3	3.46** 4.19**
							B1 & B2	1.81
Average	64 (53%)	31 (61%)	17 (36%)	16 (70%)	37 (47%)	27 (64%)	A1 & A2 A1 & A3	3.54** -1.34
							B1 and B2	-2.42
Low	26 21%)	00 (00%)	22 (47%)	04 (17%)	18 (23%)	08 (19%)	A1 & A2 A1 & A3	-7.84** -4.31**
							B1 and B2	0.69

The values in the brackets show the corresponding percentages and **=p<0.01

easy going, non-assertive, relaxed and patience) (17 per cent) and Type C (13%), i.e., the female teachers not having clear personality pattern of type A or type B. Moreover, the percentage of highly stressed married female teachers is found to be 30 per cent as compared to their unmarried female teacher counterparts (19 per cent) which differ non-significantly.

In order to verify the hypotheses, ANOVA in AxB factorial design was applied and results were presented in Table 3:

Table 3
Summary of ANOVA

Sources of variation	Sum of squares	df	Mean square	F-ratio
Personality type (A)	46400.19	2	23200.10	21.26***
Marital status (B)	2848.19	1	2848.19	2.61
AxB	2154.95	2	1077.48	0.99
Error	125503.51	115	1091.34	--
Total	3059522.00	121	--	--

***=p<0.001

From the observation of Table 3, it is clear that only the main effect of personality type (difference among the three levels of personality types, i.e., Type A, Type B and Type C) is found to be significant whereas the other main effect, i.e., of marital status (difference between married and unmarried female teachers) and the interaction are found to be insignificant.

In order to locate the difference in levels of occupational stress of the female teachers with respect to their personality pattern the Scheffe technique was applied and the results are presented in Table 4.

Table 4
F-ratio for different levels of personality

Types of personality	N	M	F-ratio
Type-A	51	179.45	55.61***
Type-B	47	129.64	
Type-A	51	179.45	15.38**
Not clear	23	146.91	
Type-B	47	129.64	4.22*
Not clear	23	146.91	

*=p<0.05, **=p<0.01, ***=p<0.001

From the above Table it is clear that type-A personality respondents are found to be significantly more stressed than the type-B respondents and the respondents who don't have clear type-A or type-B personality. Similarly, the comparison between the mean occupational stress scores of the respondents of type-B personality with not clear personality, it is found that the later are significantly more stressed then the former one.

The mean occupational stress scores of the married and unmarried female teachers are found to differ non-significantly as well as the interaction of personality type with the marital status was also found to be non-significant as has been already stated.

Results and Discussions

The hypothesis, "H_{01}: There will be no significant difference in the level of occupational stress among female teachers in relation to their personality type," is rejected as the main effect of personality type (difference among the three levels of personality types, i.e., Type A, Type B and Type C) on the occupational stress of the respondents is found to be significant (Table 3). The respondents having type A personality pattern are significantly more stressed followed by the respondents of not clear and type-B personality patterns. Moreover, the not clear personality pattern respondents are significantly more stressed than the respondents of type B personality pattern (Table 4). This result is corroborated by the research findings of Ram and Abhiyankar (1986) who reported that type A behaviour was higher and statistically significant in professional women, Mittal (1992) who found positive and significant association of

type A behaviour with total role stress, Sharma et al. (1998) who reported that type A subjects (nurses) were significantly higher on occupational stress whereas Jepson and Forrest (2006) also reported positive and significant relationship between type A behaviour and perceived stress.

The hypothesis, "H_{02}: There will be no significant difference in the level of occupational stress among female teachers in relation to their marital status," stands accepted as the main effect of marital status (difference between married and unmarried female teachers) on the occupational stress of the respondents is found to be insignificant (Table 3). Both the married and unmarried female teachers are found to have equal level of occupational stress. This result is surprising one and contradicts the findings of Gupta (1982) who revealed the significant association between marital adjustment and occupational stress, Apte (1984) who found that the presence of conflict in marriage was accompanied by stress in females, Duxbury and Higgins (2002) who reported that women with children faced greatest stress level trying to balance work and home life and Ahmad et al. (2003) who also reported that married teachers enjoyed greater level of job satisfaction than their unmarried counterpart.

From Table 3 it is also clear that the interactional effect of both the variables, i.e., of personality type and marital status (A×B) is also found to be insignificant effect on the occupational stress of the respondents. This shows that the personality type and marital status do not interact significantly in determining the occupational stress of the female teachers. Thus, the hypothesis, "H_{03}: personality type and marital status do not interact significantly to determine occupational stress of female teachers," stands accepted.

As the personality type A are having the high level of occupational stress, it can be inferred that if they (the female teachers having the personality type A) are any how convinced/motivated to control their behavioural pattern, they may be able to come down to the moderate level of occupational stress and of course, that will contribute positively to the work performance. The following strategies may be adopted and prove to be helpful regarding this:

- Such type of female teachers may be given any assignment well in advance so that they may be able to complete the assignment without taking tension.
- As the teachers of type A personality pattern are characterised by impatience, their work requirements may be fulfilled well in time to avoid any type of work stress on such persons.

- They may be given such task in which they can work with relaxed mood and not feel restlessness.
- These type of female teachers are achievement oriented, so it is better to give them chance and work in which they can prove their worth.
- They can be engaged in some type of supervisory work as these type of female teachers try to dominate over others.
- Furthermore, these type of persons have the tendency of doing something all the time, they may be given the responsibility of organising curricular and co-curricular activities, so that such tendency may be fulfilled in an easy going way.

Conclusion

The main thrust of this paper was to identify individual factors (personality type and marital status) in order to understand why under nearly the same environmental conditions some female teachers suffer much greater levels of occupational stress than the others. The high level of stress caused by the individual factor, i.e., the personality type A in teaching profession irrespective of the other influencing factors has serious implications for the healthy functioning of the individual teachers, schools and the entire educational system. The stress can take variety of forms and have many different sources. Depending upon the particular sources of stress within a given school or classroom several approaches may be effective in reducing work related stress. Formal assessment, i.e., identifying the individual factor is an important step because without an accurate and objective understanding of the principal types and sources of stress within a given system it is difficult to design the focused and effective stress reduction programme.

While teachers must strive towards excellence, providing them the hygienic environment to succeed is an essential component of their growth and development as professionals. As a blueprint for moving forward, this paper has proposed strategies for helping those teachers who suffer more from the stress at work. The administrators, planners, and policy makers should ensure that the implementation on those strategies is taking place in the schools in order to foster sustainable teacher commitment.

REFERENCES

Ahmad, N., Raheem, A. and Jamal, S. 2003. Job satisfaction among school teachers. *The Educational Review*. 46 (7). 123-126.

Anderson, C.R. 1976. Coping behaviours as intervening mechanisms in the inverted 'U' stress-performance relationship. *Journal of Applied Psychology*. 61. 30-34.

Apte, V.A. 1984. Role of some cognitive factors in martial conflict. *Unpublished Ph.D. Thesis*. University of Poona, Pune.

Bachkirova, T. 2005. teacher stress and personal values: An exploratory study. *School Psychology International*. 26 (3) 340-352.

Beehr, T.A. and Newman, J.E. 1978. Job stress, employee health and organisational effectiveness: A facet analysis, model and literature review. *Personnel Psychology*. 31. 665-69.

Betoret, F.D. 2006. Stressors, self-efficacy, coping resources and burnout among secondary school teachers in Spain. *Educational Psychology*. 26 (4). 519-539.

Borg, M.G. and Falzon, J.M. 1989. Stress and job satisfaction among primary school teachers in Malta. *Educational Review*. 41. 271-279.

Bridges, L. 2003. Coping as an element of developmental well-being. In M.H. Bornstein, L. Davidson, C.L.M. Keyes and K.A. Moore (eds.). *Well Being*. Erlbaum, Mahwah NJ.

Brindley, D.N. and Rolland, Y. 1989. Possible connections between stress, diabetes, obesity, hypertension and altered lipoprotein metabolism that may result in atherosclerosis. *Clinical Science*. 77. 453-461.

Broiles, P.H. 1982. An inquiry into teacher stress: Symptoms, sources, and prevalence. *Dissertation Abstracts International*. 43(4). 1077-A.

Capel, S.A. 1987. The incidence of and influences on stress and burnout in secondary school teachers. *British Journal of Educational Psychology*. 57. 279-299.

Caplan, R.D., Cobb, S. and French, J.R.P. 1975. Relationships of smoking with job stress, personality and social support. *Journal of Applied Psychology*. 60. 211-19.

Cooper, C.L 1986. Job distress: Recent research and the emerging role of the clinical occupational psychologist. *Bulletin of the British Psychological Society*. 39. 325-331.

Cooper, C.L., and Marshall, J. 1976. Occupational sources of stress: A review of the literature relating to coronary heart disease and mental ill health. *Journal of Occupational Psychology*. 49. 11-28.

Daga, N. 1997. Influence of social family role stress and social support on quality of life. *Unpublished Ph.D. Thesis*. Aligarh Muslim University. Aligarh.

Dhar, U. and Jain, M. 2001. *Type A/B behavioural pattern scale (ABBPS). Manual*. Ankur Psychological Agency, Lucknow.

Duxbury, L. and Higgins, C. 2002. The 2001 national work-life conflict study. *Report One*. Ottawa, Health, Canada.

Eckles, R.W. 1987. Stress-making friends with the enemy. *Business Horizons*. March-April. 74-78.

Farber, B.A. 1984. Teacher burnout: assumptions, myths and issues. *Teachers College Record*. 86. 321-338.

French, J.R.P. Jr., Rodgers. W. and Cobb. S. 1974. Adjustment as person-environment fit, In G.V. Coelho, D.A. Hamburg, and J.E. Adams (Eds.). *Coping and Adaptation*. Basic Books, New York.

Grebennikov, L. and Wiggins, M. 2006. Psychological effects of classroom noise in early childhood teachers. *Australian Educational Researcher*. 33 (3). 35-53. Retrieved from http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/29/94/c0.pdf on 29.01.2008.

Guglielmi, R.S. and Tatrow, K. 1998. Occupational stress, burnout and health in teachers: A methodological and theoretical analysis. *Review of Educational Research*. 68 (1). 61-99.

Gupta, A. 1982. Stress among working women: Its effect on martial adjustment. Paper presented at the UGC Seminar on *Stress in Contemporary Life: Strategies of Coping*. New Delhi.

Gupta, A. 1999. Moderating effect of job attribution on the relationship of role stress and job behaviour and health. *Doctoral dissertation*. Banaras Hindu University.

Hall, D.T. and Lawler, E.E. 1971. Job pressure and research performance. *American Scientist*. 69. 271-273.

Hansen, J. and Sullivan, B.A. 2003. *Assessment of workplace stress: Occupational stress, its consequences and common causes of teacher stress*. Retrieved from http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/1b/58/4f.pdf on 29.01.2008.

Hendrickson, J.M. and La Barca, A. 1979. *Spice of life*. Harcourt, Brace Jovanovich, New York.

Hinkle, L.E. 1973. The concept of stress in biological and social sciences. *Science, Medicine and Man*. 1. 31-48.

Ivancevich, J.M. and Matteson, M.T. 1980. *Stress and work: a managerial perspective*. Gleinview IL, Scott Foresman.

Jarvis, M. 2002. Teacher stress: a critical review of recent findings and future research directions. *Stress News*. January 2002.

Jepson, E. and Forrest, S. 2006. Individual contributory factors in teacher stress: The role of achievement striving and occupational commitment. *British Journal of Educational Psychology*. 76 (1). 183-197.

Kahn, R.L., Wolfe, D.M., Quinn, R.R., Sonek, J.D., and Rosenthal, R.A., 1964. Organisational Stress: Studies in Role Conflict and Ambiguity, New York: Wiley.

Ketz de Vries, M.F.R. 1984. Organisational Stress Management Audit. In A.S. Sethi and R.S. Schuler (Eds.). *Handbook of Organisational Stress and Coping Strategies*. Cambridge MA, Ballinger.

Kobasa, S.C. 1979. Personality and resistance to illness. *American Journal of Community Psychology*. 21. 595-598.

Kyriacou, C. and Prati, J. 1985. Teacher stress and psychoneurotic symptoms. *British Journal of Educational Psychology*. 55. 61-64.

Kyriacou, C. 2001. Teachers Stress: Directions for future research. *Educational Review*. 53 (1). 27-35.

Kyriacou, C. and Sutcliffe, J. 1978. Teachers Stress: Prevalence, sources and symptoms. *British Journal of Educational Psychology*. 48. 159-167.

Lazuras, L. 2006. Occupational stress, negative affectivity and physical health in special and general education teachers in Greece. *British Journal of Special Education*. 33 (4). 204-209.

Lazarus, R.S. 1996. *Psychological stress and the coping process*. McGraw Hill, New York.

Lobel, M. and Dunkel-Schetter, C. 1990. Conceptualising stress to study effects on health: environmental, perceptual and emotional components. *Anxiety Research*. 3. 213-230.

Margolis, B.L., Kores, W.H. and Quinn, R.P. 1974. Job stress: An unlisted occupational hazard. *Journal of Occupational Medicine*. 16. 654-61.

Malow-Iroff, M. and Johnson, H.L. 2006. Family stress and coping. In S.J. Farenga and D. Ness (eds). *Encyclopedia of Education and Human Development*. Pentagon Press, New York. 887.

Mittal, U. 1992. Coping styles as related to role stress, locus of control and personality type. Unpublished Ph.D. Thesis. University of Rajasthan. Jaipur.

O' Connor, P.R. and Clarke, V.A. 1990. Determinants of teacher stress. *Australian Journal of Education*. 34. 41-51.

Payne, R. 1980. Organisational stress and support. In C.L. Cooper and R. Payne (Eds.). *Current Concerns in Occupational Stress*. John Wiley, New York.

Pierce, C.M.B. and Molloy, G.N. 1990. Psychological and biographical differences between secondary school teachers experiencing high and low levels of burnout. *British Journal of Educational Psychology*. 60. 37-51.

Pithers, R.T. and Soden, R. 1998. Scottish and Australian teacher stress and strain: A comparative study. *British Journal of Educational Psychology*. 68, 269-279.

Quick, J.C. and Quick J.D. 1984. *Organisational stress and preventative management*. McGraw-Hill, New York.

Ram, U. and Abhiyankar, S. 1986. JAS scores and occupational status in women. Personality Study and Group Behaviour. 6(12).

Robinson, M. (ed.). 2007. Chamber's 21st century dictionary. Allied Chambers (India) Limited, New Delhi. 1395.

Schuler, R.S. 1980. Definition and conceptualisation of stress in organisations. *Organisational Behaviour and Human Performance*. 24. 115-30.

Sharma, S., Sood, N and Spielberger, C.D. 1998. Occupational stress, anxiety, anger and type-A behaviour. In D.M. Pestonjee, U. Pareek and R. Agrawal (Eds.). Studies in Stress and its Management. Oxford and IBH, Delhi.

Soloman, R. and Feld, M. 1989. Occupational stress: Perceptions of teachers in catholic schools. *Journal of Educational Administration*. 27. 55-68.

Speilberger, C.D. 1979. *Understanding stress and anxiety*. Harper and Row, New York.

Srivastava, A.K. and Krishna, A. 1992. Moderating effect of locus of control on relationship of occupational stress and job tension. *Journal of Psychological Researches*. 36. 53-58.

Srivastava, A.K. and Singh, A.P. 2003. *Occupational Stress Index (OSI). Manual*. Manovaigyanik Prakchhan Sansthan, Varansi.

Sultana, A. 1995. Gender differences in organisational role stress of professional and non-professional teachers of higher educational institutions. Unpublished M.A. Dissertation. Lucknow University. Lucknow.

Tytherleigh, M.Y., Webb, C., Cooper, C.L., and Ricketts, C. 2005. occupational stress in UK higher education institutions: A comparative study of all staff categories. *Higher Education Research and Development*. 24 (1) 41-61.

Zhang, L. 2007. Teaching styles and occupational stress among Chinese university faculty members. Educational Psychology. 27 (6). 823-841.

A Study of Learner Characteristics, School Environment, Achievement and Placement of Scheduled Caste Students of Madhya Pradesh

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ABSTRACT

The Constitution of India has provided special provision for the upliftment of Scheduled Castes. To impart quality education with all facilities in the same premises Government of Madhya Pradesh started Residential Schools exclusively for Scheduled Caste students at seven divisions. The aim of the programme is to provide nutritious food, rich library, infrastructural facilities and provide an environment which is more conductive to learning. In the present study learner characteristics, school environment, achievement and placement of Scheduled Caste Students have been studied. It was found that these schools have medium level of learning environment. Learners of these schools mostly belonged to the lower strata of the society, thus the scheme of residential schools is helping the poor scheduled caste students in getting quality education. Present study clearly revealed that good percentages of students are joining higher studies after completion of their 12th standard. Thus these schools should be continued and strengthened. Academic achievement of the learners of these schools also revealed that remedial teaching or extra coaching should be introduced in these schools for students who are poor in Physics, Chemistry, Mathematics and English subjects.

1. Introduction

India is a nation with complex cultural diversity. The main aspects of Indian social stratification are caste and class system. Our ancient society was classified into the categories like-Brahmin, Kshatriya, Vaishya and Shudra. Brahmin, Kshatriya and Vaishya were upper classes and Shudra was lower deprived class. Only the upper classes had the privilege of education. It has been seen

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that the people of various categories, castes and creed differ in their abilities. The social practices of untouchability and social relations of servility vary greatly in different parts of the country. The widespread upsurge of atrocity signifies continued caste based oppression. However, economic exploitation and economic disadvantage and concentration in menial occupations continue to sustain and reinforce the degraded social position of the majority of deprived.

After independence, democratic socialist and welfare state has been established. To compensate the discrimination, exploitation and marginalisation of the deprived classes, the constitution of India has provided special provisions for members of these castes. Article 341 and 342 include list of castes and tribes entitled to such benefits are referred to as Scheduled Castes and Scheduled Tribes respectively.

Constitutional provisions have been made to protect the rights to upgrade the status of the weaker sections of the Indian society. Constitutional directives to the education of SC and ST children are contained in articles 15(4), 45 and 46 of the Indian constitution. Article 45 declares the state's endeavour to provide free and compulsory education for all children until they complete the age of 14 years. Article 46 expresses the specific aim to promote with special care to the educational and economic interests of SC/ST. Article 46 of the Constitution states that, "The State shall promote, with special care, the education 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 social exploitation." The demand for schooling by Scheduled Caste and Scheduled Tribe families has been not matched by supply of quality education (Kamat and Sedwal, 2007). Right To Education Act 2009 which came into effect from 1st April 2010 is a step to achieve this objective. Through this act legal obligation has been imposed on the Central and state governments to implement this fundamental right of every child, as enshrined in the Article 21A of constitution.

Education exercises a determining influence on the socio-economic development and cultural rejuvenation of the country. Keeping this in view, the NPE laid special emphasis on the removal of disparities and equalising educational opportunities by attending the specific needs of those who have been denied equality so far. In this endeavour, special emphasis has to be laid on the education

of Scheduled Castes and Scheduled Tribes in order to ensure their equalisation with the general population at all stages and levels of education (NPE, 1986). Education was seen as the key instrument for bringing about social order based on value of equality and social justice (NFG, NCERT, 2007).

In India, since independence, many attempts have been made through committees and commissions to reform the educational system with a view to make it an instrument of national reconstruction and development. However, despite all these efforts, a majority of our people remains deprived of education. In its effort to offset educational and socio-historical disadvantage, the Indian state conceived a range of enabling provision that would facilitate access to and ensure retention of SC and ST children in school. Both Central and State governments took up the responsibility of special educational provision. Special schemes pertaining to school education of SC/ST children currently include- (i) Free supply of text books, uniforms and stationery at all stages of school education (ii) Free education at all levels (iii) Pre-matric scholarship and stipends to students (iv) Special scheme of pre-matric scholarships for children of castes and families engaged in unclean occupations like scavenging, tanning and flaying of animal skin (v) Post matric Scholarships (vi) Girls and boys hostels for SC/ST students (vii) Ashrams schools for deprived children started with intention of overcoming the difficulties of provision in remote regions and also rather patronisingly to provide an environment "educationally more conducive" than their local habitat. In addition, several states have instituted schemes such as scholarships to SC students studying in private schools. Merit scholarships attendance scholarships for girls, special school attendance prizes, remedial coaching classes, reimbursement of excursion expenses and provision of mid-day meals.

Scheduled Castes in India and Madhya Pradesh: Scheduled castes are notified in 31 States and UTs of India. 16.6 per cent population of Indian population are Scheduled Castes (Census 2011). Madhya Pradesh is the 8th largest state in India having 1.13 crore (15.5%) Scheduled Caste population. The decadal growth of Scheduled Caste population is 23.9 per cent. 48 castes are notified in the state. (Census 2011). Total literacy rate in Madhya Pradesh as per census 2001 is 63.7 per cent and that of SC's is 58.6 per cent. Where as at national level the total literacy is 64.8 per cent and that of SC's is 54.7 per cent. Thus literacy among SC's in the state is still less than the national average.

Initiatives taken by Government of Madhya Pradesh: Besides the programmes mentioned in the preceding pages, Government of Madhya Pradesh introduced various schemes for the upliftment of Scheduled Castes. Hostel and ashrams were instituted to provide residential facilities for scheduled caste students. Centres of Excellence were also instituted in 90 district and 281 block head quarters. In these centres besides residential facilities, nutritious diet, coaching, library and computer training are also provided.

National Focus Group constituted under National Curriculum framework 2005 on problems of Scheduled Caste and Scheduled tribe children recommended the need for equitable provision in terms of quality of schooling at different levels, educational infrastructure and other facilities, qualified teachers and teaching learning materials including texts.(NFG-2007). Education is a vehicle for integration and assimilation of SC and ST students into to main stream. Some academic studies have advocated separate schools for Scheduled Castes. Equity in education can only be taken place in schools that are set up exclusively for scheduled castes (Illiah, 2000). To fill the gap between the scheduled castes and others, 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.

Government of Madhya Pradesh opened Residential Schools exclusively for Scheduled Caste students in the year 2003-04 in all seven divisions. The purpose of the scheme is to provide quality education, a congenial environment, nutritious food, rich library and infrastructural facilities free of cost. These schools have separate residential facility for boys and girls studying in classes 6th to 12th. The total strength of the school is 280 and maximum students in each class is 40. Besides normal diet, nutritious food are also provided. Rs.2000/- per student per year is also provided for their uniform and stationery.

The present study is an effort to evaluate the scheme of Residential Schools with respect to some learner characteristics, School environment, achievement, impact of learner characteristics on achievement and placement of Scheduled Caste students.

2. Statement of the Problem

The statement of the present study is as follows:
A Study of Learner Characteristics, School Environment, Achievement and Placement of Scheduled Caste Students of Madhya Pradesh.

3. Operational Definitions of Terms Used

Operational definitions of terms used in the present study are given below:

Learner Characteristics

In the present study Learner Characteristics includes Study Habits and Socio-Economic Status of the learners of Residential Schools.

Achievement

Marks obtained by the learners of Residential Schools in the 12th board examinations conducted by the Board of Secondary Education, Madhya Pradesh, Bhopal is considered as achievement.

Placement

In the present study, placement means the present status of passed out students of Residential Schools, whether they are engaged in gainful employment, self-employment or pursuing higher education.

Scheduled Caste Students of Madhya Pradesh

Scheduled Caste students admitted and passed out from Residential Schools of Madhya Pradesh.

4. Objectives

Following objectives were framed for the present study:

1. To study various learner characteristics viz. Study Habits and Socio-Economic Status of students of Residential Schools (Sambhagiya Awasiya Vidyalaya) of Madhya Pradesh.
2. To reveal the status of school environment of Residential Schools (Sambhagiya Awasiya Vidyalaya) of Madhya Pradesh.
3. To examine the outcome of schooling in terms of Achievements of students of Sambhagiya Awasiya Vidyalaya of Madhya Pradesh.
4. To examine the impact of school environment and learner characteristics on the achievement of students of Residential Schools (Sambhagiya Awasiya Vidyalaya) of Madhya Pradesh.
5. To examine the status of placement of pass out students of 'Sambhagiya Awasiya Vidyalaya' of Madhya Pradesh in terms of: (a) Employment— wage and self (b) Higher Studies

5. Delimitations of the Study

The present study is delimited to:

- Study habits of learners and Socio-Economic Status are selected as learner characteristics.

- Placement of Scheduled Caste students of residential Schools of Madhya Pradesh, in respect to only whose details are known.

6. Methodology

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

6.1 Design of the Study

Design of the study provides clear guidelines about selection of research design, selection of the sample, development and selection of tools, collection of data, analysing the data, generalising the results and reaching the conclusion. The present study is mainly descriptive survey type of Study. Based on the objectives of the study, the survey research design was most appropriate.

6.2 Sample

1. The study was carried out in all the seven Residential Schools situated in divisional headquarter.
   (a) School-wise sample is shown in Table Number 1

Table 1
Number of Students

S. No	Residential Schools	No. of Students
1	Jabalpur	55
2	Indore	35
3	Gwalior	31
4	Ujjain	52
5	Rewa	16
6	Sagar	12
7	Bhopal	8
Total		209

   (b) To study the achievement and placement of pass out students, learners of Class 12th studied during 2006 to 2009 were chosen for the study. School-wise detail is furnished in Table No. 2

6.3 Tools

The investigator selected following tools for the present study:

1. School Environment Inventory (SEI): Inventory developed by Dr. K.S. Mishra (1984)
2. Study Habits: PSSHI, Inventory developed by Palsane and Sharma, 1989

Table 2
Number of pass out students of Residential Schools

S No.	Residential Schools	Number of students			
		2006-07	2007-08	2008-09	Total
1	Jabalpur	13	21	17	51
2	Indore	12	7	9	28
3	Gwalior	4	6	7	17
4	Ujjain	8	14	8	30
5	Rewa	2	2	5	9
6	Sagar	5	1	5	11
7	Bhopal	4	1	6	11
	Total	48	52	57	157

3. Socio-economic Status Scale: Developed by G.P. Srivastava, 1991

Following tools were developed by the researcher for the present study:

Questionnaires: In order to elicit the data from different sources the investigator has devised following two questionnaires.

1. Questionnaire for Principals
2. Questionnaire for pass out students

These questionnaires were tried out and it was finalised in the light of feedback emanating from the process of try out. These questionnaires were also validated with the help of principal of one of the residential schools for the authenticity of the content and language of the tool before actual use.

Data Collection: The investigator visited all the seven residential schools. Administered tools in these schools. Addresses of passed out students were gathered. The questionnaire meant for pass out students was mailed to them. Effort was made to get the filled-in questionnaire from the entire pass out students. Some of the non-respondent students were contacted telephonically and requested to send the questionnaire. The collected data were coded according to the answer keys and score of each item of each respondent were abstracted and summated accordingly. The scores were tabulated for appropriate statistical treatments.

Data analysis techniques employed in the present Study

The process of data analysis and interpretation was organised on the basis of objectives of the study. The statistical techniques used for data analysis include frequency, percentage analysis and ANOVA. The results derived from the statistical treatment of data were interpreted.

7. Analysis and Interpretation

7.1.1 Study Habits

Study habits of learners play an important role in their academic life. It is believed that good study habits inculcated during schooling help them to get success in their life. The study habits of students of Residential Schools were studied. The study habit Inventory by Palsana and Sharma was used to know the study habits of learners of Residential Schools. The Inventory was administered among the learners of all Residential Schools. On the basis of the scores obtained, the learners were categorised into five Category viz. Students having Excellent, Good, Average, Unsatisfactory and Very Unsatisfactory Study Habits.

Table 3
Study Habits of Learners School-wise

Schools	Excellent	Good	Average	Unsatisfactory	Very Unsatisfactory	Total
Jabalpur	12	3	22	4	14	55
Indore	4	4	16	4	7	35
Ujjain	23	6	13	0	10	52
Gwalior	8	4	10	2	7	31
Rewa	1	1	6	3	5	16
Sagar	0	0	6	2	4	12
Bhopal	6	0	1	1	0	8
Total	54 (25.8%)	18 (8.6%)	74 (35.4%)	16 (7.7%)	47 (22.5%)	209

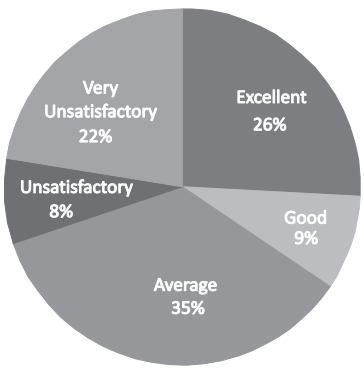

Figure 1: Study Habits of Learners of Residential Schools

Table No. 3 and Chart No. 1 show the study habits of learners of Residential Schools. 26 per cent learners have the highest category excellent Study habits. Nine per cent of the learners have good study habits, whereas 35 per cent learners have average study habits. Learners with unsatisfactory study habits are 8 per cent and very unsatisfactory are 22 per cent.

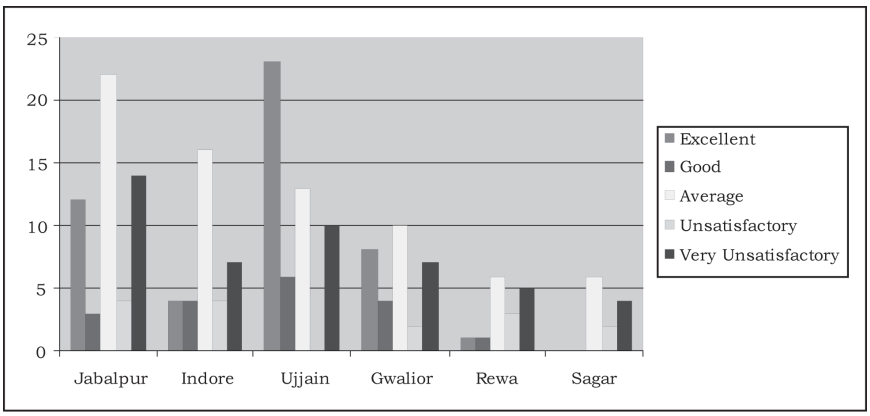

Figure 2: Study Habits of learners of Residential Schools— School-wise break-up

School-wise categorisation of Study Habits of learners show the Residential School Ujjain has maximum students with excellent study habits, followed by Residential School Jabalpur, Gwalior, Indore and Rewa. Thus majority of the learners of Residential Schools have average study habits.

7.1.2 Socio-Economic Status (SES)

Learners of Residential Schools hails from different families of various districts of the division. Thus the Socio-Economic Status of these learners may also differ. To find out the Socio-Economic Status of the learners Socio-Economic Status Scale (Urban) developed by G.P. Shrivastava was used, Its reliability is 0.94. The content, concurrent and construct validity of the tool was established. The tool was administered among the students of Residential Schools. On the basis of the scores of students they were categorised into five groups namely upper class, upper middle class, lower middle class, lower class and lower lower class. This categorisation is depicted in Chart No. 3.

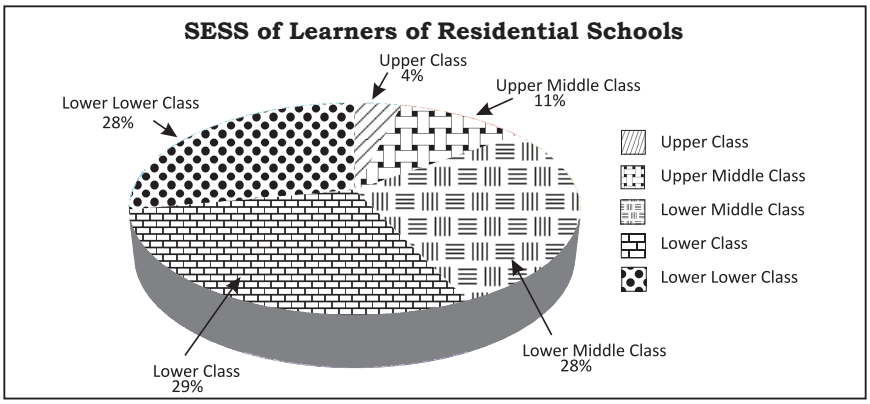

Figure 3: Socio-Economic Status of Learners of Residential Schools

Chart No. 3 shows that 29 per cent Scheduled Caste learners of Residential Schools belong to lower Class, 28 per cent learners belong to lower lower Class and 28 per cent belong to lower middle class. 11 per cent learners belong to upper middle class and only 4 per cent learners belong to upper class. Thus most of the students (85%) of Residential Schools belong to the lowest three Socio-Economic Status category viz. lower middle, lower and lower-lower class.

Table 4
SES Status of Learners of Residential Schools—School-wise break up

Schools	Upper Class	Upper Middle Class	Lower Middle Class	Lower Class	Lower Lower Class	Total
Jabalpur	2	5	15	16	17	55
Indore	0	7	13	9	6	35
Ujjain	2	5	18	16	11	52
Gwalior	2	0	8	12	9	31
Rewa	0	3	3	3	7	16
Sagar	2	1	1	3	5	12
Bhopal	0	2	1	2	3	8
Total	8 (4%)	23 (11%)	59 (28%)	61 (29%)	58 (28%)	209

Thus students who are being benefited by the scheme of Residential Schools belong to low Socio-Economic Status. Thus it fulfills the desire of the Government to benefit the poorest section of the society.

7.2 Objective 2

To reveal the status of school environment in Residential Schools (Sambhagiya Awasiya Vidyalaya) of Madhya Pradesh.

School Environment is supposed to be one of the major factor which exerts impact on the learning of students. In the present study, School Environment Inventory developed by K.S Mishra was used for obtaining scores from learners of Residential Schools. The raw scores so obtained have been analysed and is presented in Table No. 5. The same is depicted in Chart No. 4.

Table 5
School Environments of Residential Schools

High	Medium	Low	Total
48(23%)	131(63%)	30(14%)	209

Table No. 5 and Chart No. 4 shows that out of the three categories viz. High, Medium and Low, maximum learners (63%) feel that the school environment of their school is of medium category, 23 per cent learners feel the school environment is High and 14 per cent learners feel that the school environment of their school is of low category.

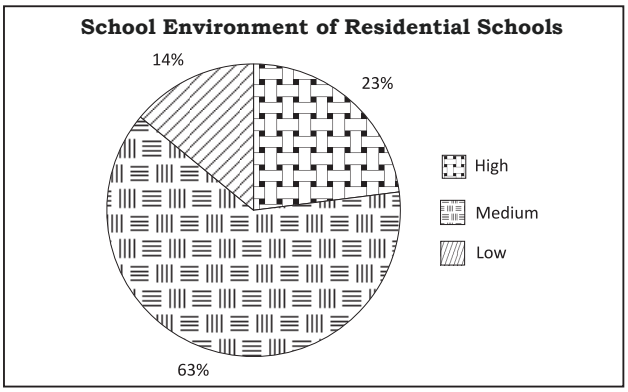

Figure 4: School Environment of Residential Schools

Thus most of the Residential Schools of Madhya Pradesh have school environment of 'Medium' category, followed by 'High' and 'Low' category.

7.3 Objective 3

To examine the outcome of schooling in terms of Achievements of students of Residential Schools 'Sambhagiya Awasiya Vidyalaya' of Madhya Pradesh

The third objective of the study was to study the outcome of schooling in terms of achievement of students of Residential Schools. In the present study the total marks obtained by the learners in their 12th standard board examination i.e. Board of Secondary School Examination, Madhya Pradesh, Bhopal was taken as the achievement score. Thus the detailed result of Class 12th of all Residential Schools for the period of study (from 2007 to 2009) was collected from these schools. The year-wise achievement of learners is shown below in Table No. 6 and the same is also shown in Chart No. 5

Table 6
Year wise Result of Residential Schools in Board Examinations in Percentage-Class 12th

Schools	Per cent of Result		
	2007	2008	2009
Jabalpur	90.0	100.0	100.0
Indore	91.7	76.5	83.3
Ujjain	86.7	83.9	60.9
Gwalior	88.9	71.4	94.1
Rewa	40.0	100.0	91.7
Sagar	64.7	100.0	88.9
Bhopal	42.1	100.0	100.0
Total	75.2	86.9	86.6

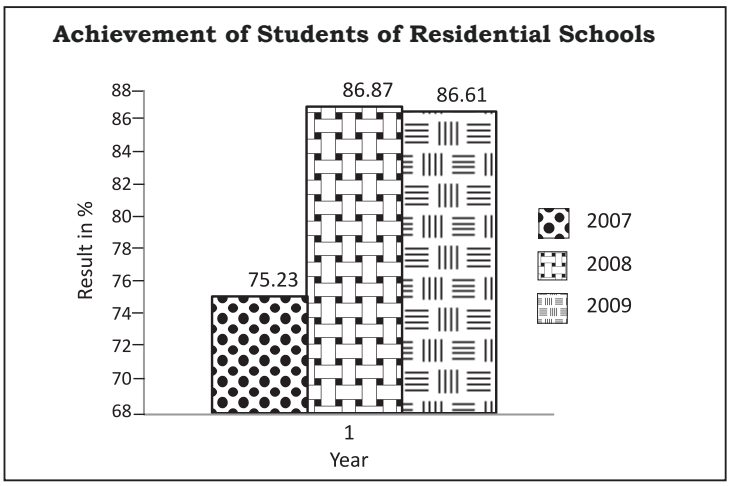

Figure 5: Year-wise result of Residential Schools in Board Examinations (in Percentage)–Class 12th

The chart and Table shows the over all result of Residential Schools. In the year 2007, 75.2 per cent students passed the 12th board examination, in 2008 it increased to 86.87 per cent and in the year 2009 it remained 86.61 per cent.

7.3.1 Analysis of Achievement of learners

Only the percentage of passed students doesn't show the complete picture of achievement of learners. Thus a micro analysis of result is necessary. Year-wise micro analyses of result of learners of Residential Schools are presented in the following pages.

Categorisation of passed students on the basis of their score: According to the marks obtained by the passed learners in the 12th board examination, the learners were categorised into four groups viz. above 79 per cent, 70 to 79 per cent, 60 to 69 per cent and 45 to 59 per cent.

Table 7
Categorisation of passed students on the basis of their achievement (marks)

Category based on % of marks	2007	2008	2009
>79	5(6%)	5(6%)	1(1%)
70-79	19(23%)	21(24%)	19(20%)
60-69	28(34%)	36(42%)	49(50%)
45-59	30(37%)	24(28%)	28(29%)
Total	82(100%)	86(100%)	97(100%)

Table No. 7 shows that in the year 2007, maximum learners (37%) passed falls under 45-59 per cent category i.e. in second division. 34 per cent students have scored marks between 60-69 per cent. 23 per cent learners scored marks between 70-79 per cent. Only 6 per cent students scored more than 79 per cent marks.

In the year 2008, out of the passed students 28 per cent students scored marks between 45-59 per cent, 42 per cent students scored marks between 60-69 per cent, 24 per cent students scored marks between 70-79 per cent and 6 per cent students scored above 79 per cent marks. In the year 2009, 29 per cent passed students scored marks between 45-59 per cent. Maximum students (50%) scored marks between 60-69 per cent in this year. 20 per cent students scored marks between 70-79 per cent and only 1 per cent student scored more than 79 per cent marks.

During the three year of execution of the programme of Residential Schools, there was no increase in first category i.e. above 79 per cent, but it decreased from 6 per cent to 1 per cent in 2009. Similarly, under the 70-79 per cent category the percentage of learners varied, it was 23 per cent in 2007, then increased to 24 per cent and in 2009 it became 20 per cent. The number of learners is consistently increasing in 60-69 per cent category, it was 34 per cent, 42 per cent and 50 per cent during the year 2007, 2008 and 2009 respectively. The number of learners passed with marks between 45-59 per cent decreased from 37 per cent in 2007 to 29 per cent in 2009. Thus learners are achieving higher marks with duration of execution of the programme.

Table 8
Analysis of Result of Residential Schools 2007

School	Total no. of Students	No. of pass Students	I	II	% of Result	No. of Supplem-entary or Fail	% of failure	Subject-wise no. of students failed			
								Phy-sics	Chem-istry	Ma-ths	Gen. Engl-ish
Jabalpur	20	18	15	3	90.0	2	10	1	2		
Indore	24	22	14	8	91.7	2	8	2	1	2	
Ujjain	15	13	8	5	86.7	2	13		2		2
Gwalior	9	8	4	4	88.9	1	11	1			
Rewa	5	2	1	1	40.0	3	60	2	3		
Sagar	17	11	5	6	64.7	6	35	3	2	4	
Bhopal	19	8	5	3	42.1	11	58	4	5	6	
Total	**109**	**82**	**52**	**30**		**27**	**25**	**13**	**15**	**12**	**2**
%		75.23	63.41	36.59		24.77					

Table No. 8 shows the detailed result of all Residential Schools in the year 2007. It also shows the Subject-wise number of students awarded supplementary or failed. The over all result of Residential Schools in 2007 was 75.23 per cent. In this year 63.4 per cent students passed in first division, where as 35.6 per cent students passed in second division. Total 24.77 per cent students failed in different subjects. If we examine the Subject-wise number of students failed, maximum 15 students failed in Chemistry followed by Physics(13), Mathematics(12) and General English(2).

Table 9
Analysis of Result of Residential Schools 2008

School	Total no. of Students	No. of pass Students	I	II	% of Result	No. of Supplem-entary or Fail	% of failure	Subject-wise no. of students failed			
								Phy-sics	Chem-istry	Ma-ths	Engl-ish
Jabalpur	29	29	25	4	100	-	-	-	-	-	-
Indore	17	13	9	4	76.5	4	23.53	4	-	-	-
Ujjain	31	26	20	6	83.9	5	16.13	-	5	-	-
Gwalior	14	10	9	1	71.4	4	28.57	2	1	2	1
Rewa	4	4	4	0	100	0	0.00	-	-	-	-
Sagar	3	3	2	1	100	0	0.00	-	-	-	-
Bhopal	1	1	1	0	100	0	0.00	-	-	-	-
Total	**99**	**86**	**70**	**16**	**86.9**	**13**	**13.13**	**6**	**6**	**2**	**1**
%	-	86.87	81.40	18.60		13.13	-	-	-	-	-

Table No. 9 shows the detailed result of Residential Schools in the year 2008. The over all result of these schools were 86.87 per cent. Out of the passed students 81.4 per cent students passed in first division, where as 18.6 per cent students passed in second division. The Table also reveals that 13.13 per cent of students failed in different subjects in the year 2008. In Physics and Chemistry 6 students failed. Two students in Mathematics and 1 student in General English failed in this academic year.

Table 10
Analysis of Result of Residential Schools 2009

School	Total no. of Students	No. of pass Students	I	II	% of Result	No. of Supplem-entary or Fail	% of failure	Subject-wise no. of students failed			
								Phy-sics	Chem-istry	Maths	Eng-lish
Jabalpur	26	26	22	4	100	-	-	-	-	-	-
Indore	18	15	8	7	83.3	3	16.67	3		-	
Ujjain	23	14	11	3	60.9	9	39.13	-	7	-	2
Gwalior	17	16	7	9	94.1	1	5.88	-	-	-	1
Rewa	12	11	10	1	91.7	1	8.33	1	1	-	-
Sagar	9	8	7	1	88.9	1	11.11	1	-	-	-
Bhopal	7	7	4	3	100	-	-	-	-	-	-
Total	**112**	**97**	**69**	**28**	**86.6**	**15**	**13.39**	**5**	**8**	**-**	**3**
%		86.6	71.1	28.9		13.4					

The detailed result of Residential Schools in the year 2009 is shown in Table No. 10. The overall result was 86.6 per cent. Out of the passed students 71.1 per cent students passed in first division and 28.9 per cent students passed in second division. 13.4 per cent students failed this year. In this year maximum students failed in Chemistry (8) followed by Physics (5) and General English (3).

7.4 Objective 4

To find out the relationship of school environment and learner characteristics with achievement of students of Residential Schools of Madhya Pradesh.

7.4.1 Study Habits and Achievement Score

The status of Study habits and achievement of learners of Residential Schools have already discussed in Objective No. 1 and 3 respectively. The Study habits of the learners was measured and the achievement score of each learner taken in to consideration. There are five categories of Study habits according to the test. Study habits of learners have been categorised into Excellent, Good, Average, Unsatisfactory and Very Unsatisfactory group. These groups of Study habits and their respective mean achievement score is given in Table No. 11.

Table 11
Study Habits and Achievements

Categories of Study Habits	N	Mean	Std. Deviation
Excellent	54	326.89	45.54
Good	18	316.67	36.88
Average	74	312.16	46.21
Unsatisfactory	16	308.25	43.69
Very Unsatisfactory	47	320.74	41.88
Total	209	317.98	44.23

Table No. 11 shows different categories of Study habits, mean achievement scores and standard deviation. The mean score of achievement varies from 308.25 to 326.89 in different categories. Learners with Excellent Study habits have mean achievement score higher compared to other lower categories of Study habits. However, learners with good, average, unsatisfactory and very unsatisfactory study habits have mean achievement almost close to each other.

Analysis of Variance (ANOVA) of Achievement scores of learners within the Categories of Study habits:

The mean square of between groups and within groups, degree of freedom, F value and significance level is shown in Table No.12.

Table 12
Analysis of Variance (ANOVA) of Achievement scores of learners and Study habits

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	8695.63	4	2173.91	1.114	Non Significant at 0.05 level
Within Groups	398231.32	204	1952.11		
Total	406926.96	208			

Table No. 12 shows the Analysis of variance of learners' achievement scores within the five categories of Study habit groups. The five groups contributes in order to find out mean differences within the group with df =4/204 and F- value is 1.114 which is not significant even at 0.05 level. The F- value shows that achievement of learners in different Study habit categories do not significantly differ from each other.

Findings

Thus it can be inferred that achievement of learners is independent of study habits of learners in Residential Schools.

7.4.2 Socio-Economic Status and Achievement Score

The Socio-Economic Status of the learners was measured and the achievement score of each learner was taken in to consideration. There are five categories of Socio-Economic Status. Socio-Economic Status of learners have been categorised into upper class, upper middle class, lower middle class, lower class and lower lower class. These groups of Socio-Economic Status and their respective mean achievement score are given in Table No. 13.

Table 13
Socio-Economic Status and Achievements

Categories of Socio-Economic Status	N	Mean	Std. Deviation
Upper class	8	331.50	62.59
Upper Middle Class	23	332.78	33.31
Lower Middle Class	59	311.00	45.04
Lower Class	61	315.26	47.46
Lower Lower Class	58	320.22	40.21
Total	209	317.99	44.23

Table No. 13 shows different categories of Socio-Economic Status, mean achievement scores and standard deviation. Although the mean achievement score of upper middle class is higher than all categories, mean achievement scores of all categories of Socio-Economic Status are almost close to each other.

Analysis of Variance (ANOVA) of Achievement scores of learners within the Categories of Socio-Economic Status:

The mean square of between groups and within groups, degree of freedom, F value and significance level is shown in Table No.14.

Table 14
Analysis of Variance (ANOVA) of Achievement scores of learners and Socio-Economic Status

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	10119.15	4	2529.79	1.301	Non significant at 0.05 level
Within Groups	396807.80	204	1945.14		
Total	406926.96	208			

Table No. 14 shows the Analysis of variance of learners' achievement scores within the five categories of Socio-Economic Status groups. The five groups contributes in order to find out mean differences within the group with df=4/204 and F- value is 1.301 which is not significant at 0.05 level. The F- value shows that achievement of learners in different Socio-Economic Status categories do not significantly differ from each other.

Thus it can be inferred that there is no significant relationship between Socio-Economic Status and achievement of learners in Residential Schools

Findings: It is found that achievement of learners is independent of their Socio-Economic Status of learners of Residential Schools.

7.4.3 School Environment and Achievement

The school environment of the learners was measured and the achievement score of each learner was taken into consideration. There are five categories of School environment according to the inventory. School environment of learners have been categorised into High, medium and low. These groups of school environment and their respective mean achievement score are given in Table No.15.

Table 15
School environment value and Achievements

Categories of Environment value	N	Mean	Std. Deviation
High	48	316.50	50.01
Medium	131	316.26	42.40
Low	30	327.90	42.44
Total	209	317.99	44.23

Table No. 15 shows different categories of school environment, mean achievement scores and standard deviation. The mean score of achievement varies from 316.50 to 327.90 in different categories. Learners with low school environment value have mean achievement score higher compared to other two categories of school environment. However, learners with high, medium and low school environment have mean achievement almost close to each other.

Table 16
Analysis of Variance (ANOVA) of Achievement scores of learners and School environment

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	3445.08	2	1722.54	0.879	Non significant at 0.05 level
Within Groups	403481.88	206	1958.65		
Total	406926.96	208			

Table 16 shows the Analysis of variance of learners' achievement scores within the three categories of School environment groups. The three groups contributes in order to find out mean differences within the group with df=2/206 and F- value is 0.879 which is not significant at 0.05 level. The F- value shows that achievement of learners in different school environment categories do not significantly differ from each other.

Thus it can be inferred that there is no significant relationship between School environment and achievement of learners in Residential Schools.

Findings: It is found that achievement of learners is independent of school environment of learners of Residential Schools.

7.5 Objective 5

To study the status of placement of 12th board exam pass outs of 'Sambhagiya Awasiya Vidyalaya' of Madhya Pradesh in terms of:

(a) Employment wage and self
(b) Higher Studies

The first batch of students of Class 12th of Residential Schools passed out in the year 2007. No proper record was found in any of the Residential Schools about the present status of ex-students of Residential Schools. Thus details of passed out students of 2007 were collected from all Residential Schools and addresses of admitted students were collected in subsequent years i.e. 2008 and 2009. After declaration of the result the passed out students were identified. Questionnaires were sent to the passed out students of the year 2007, 2008 and 2009 of residential schools by post with self addressed envelopes. The number of passed out students in this period were 82, 86 and 97 respectively. But responses were received from only 157 ex-students.

In the present study the placement of students means whether students were employed or continuing higher studies. The employed students were further catergorised to wage and self. The required information from ex-students of Residential Schools was sought from questionnaire meant for pass out students. The collected information is compiled and presented in Table No. 17.

Table 17
Employment Status of pass out students of Residential Schools 2007-2009

Year	Employment		Higher studies			Doing nothing	Total
	Wage	Self	Professional Courses	Other Courses	Total		
2007	3	-	17	27	44	1	48
2008	4	-	19	29	48	-	52
2009	5	-	21	29	50	2	57
-	-	-	57 (40.1%)	85 (59.9%)	142 (100%)	-	-
Total	12 (8%)	-	-	-	142 (90%)	3 (2%)	157

Table No. 17 shows the status of passed out students of Residential Schools in various years. It reveals that maximum (90%) passed out students continued their studies in higher classes. The Table further reveals that out of the students enrolled for higher studies. 40.1 per cent learners opted for professional courses where as 59.9 per cent learners opted for other courses. Some learners (8%) joined service (wage employment). None of the ex-students from any of the Residential Schools established their own business. 2 per cent students left their studies and are not doing any job.

Thus it is found that majority of the ex-students of Residential Schools opted for higher studies including professional and other courses.

8. Findings and Suggestions

- Achievement of learners of residential schools in subjects like Physics, Chemistry, Mathematics and General English is not good. This requires proper care on the part of subject teachers. Concept of remedial teaching may be introduced in these schools especially for students who are poor achiever in these subjects.
- Learning environment plays an important role in the overall achievement as well as the development of the learners. There is need to create congenial environment to promote learning in the campus of Residential Schools and Hostels.
- The placement statistics in the present study clearly reveals that good percentages of students are taking up higher studies after completion of their 12th standard. It clearly indicates the need of such schemes in existing scenario of Scheduled Caste students in the state.
- It was found that the fee of private professional institutions are decided by fee regulatory commission in the state. Students admitted in private professional college get only fee reimbursement up to the amount approved for government colleges. Rest of the fee which is almost double than government fee, is to be deposited by the poor scheduled caste learners. Thus the government should reimburse the whole fee of such students.

On the whole residential schools are facilitating access to middle and higher level education to Scheduled Caste students. The level of achievement of students of these schools are improving. This programme should further be strengthened and extended to three newly created divisions.

REFERENCES

Census. 2011. (India): *Primary Census Abstract*.

Census of M.P. 2001.(India): State Primary Census Abstract for SC's Census 2011(India): *Primary Census Abstract*.

Kamat, Sangeeta and Sedwal, M. 2007. Education and Social equity with special focus on Scheduled Castes and Scheduled Tribes in elementary Education-review paper-CREATE

M.H.R.D. 1993. Base Statistics on literacy and primary Education, NUEPA. New Delhi.

____1986. *Programme of Action National Policy on Education*, New Delhi.

Mishra, K. S. 1984. *School Environment Inventory*, Ankur Psychological Agency, Lucknow.

NCERT. 1987. *Education for Indian Emerging Society*, N.C.E.R.T.

____ 2007. *National Focus Group on Problems of Scheduled Castes and Scheduled Tribe Children*. Position paper 3.1. pp 2.

Palsane, M. N. and Sharma, A. 1989. *Study Habits Inventor*y, National Psychological Corporation, Agra.

SC/ST Welfare Deptt. Prashasanik Prativedan-2008-09.

____ Prashasanik Prativedan-2009-10.

Shrivastava, G.P. 1991. *Socio-Economic Status Scale*, National Psychological Corporation, Agra.

Developing Reading Profile of Students without using Standardised Tools—Is it Possible?

Bharti*

Abstract

School students in India study three languages at the elementary level, namely mother tongue, regional language and a foreign language. The foreign language is usually English in the majority of the schools. The medium of instruction in the school could be English or Hindi (national language) or mother tongue depending on the school management and the choice of the parents. The present paper is an attempt to assess the reading errors committed by the class III students studying in a Kendriya Vidyalaya situated in the heart of the capital of India. The assessment data is compiled to create reading error profile of the class and individual students. The reading error profile provides significant information to develop remedial education programme leading to reduction of reading errors. The vital element of the entire process is the use of informal means of assessment without using the standardised reading tests.

Introduction

Reading is one of the basic skills taught in the schools as an integral part of the curriculum, yet it is often found that children commit a number of errors while reading the age and class appropriate text even in their mother tongue. This fact emerged during discussion with the principal Kendriya Vidyalaya (KV), National Council of Educational Research and Training (NCERT) and other teachers. The discussion also revealed that in every class of 40 students, there are minimal 10 per cent students who are not able to read at par with their classmates.

According to the position paper of the National Focus Group on Teaching of Indian Language1, " It is important to realise that all children learn the basic systems and subsystems of their language, including a substantial part of their sociological correlates (i.e. they acquire not only linguistic but also communicative competence)

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before they are three years old. It is eminently possible to engage in a meaningful conversation with a three year old on any subject that falls within his/her cognitive domain." This clearly indicates that even before the child's entry to the formal school and his/her introduction with the basic learning, comprising of reading and writing, the child has some proficiency in language. Although it is different matter that this proficiency is usually in the mother tongue, which may encourage us to conclude that if the child's mother tongue is Hindi then he/she will have either no or minimum problems in acquiring the reading and writing skills in the Hindi Language. This may be true in most of the cases, but in every class we find few students whose performance in reading and writing of Hindi falls below the class average in spite of this being their mother tongue. The difficulties in learning language multiply in case of learning of second and third language. As far as learning of English is concerned the foremost difficulty is, no support at home from family members in learning to read and write English, as often the family members themselves are not familiar with the language.

The Annual Status of Educational Report (ASER) released by Pratham for the year 2012 revealed that "For all children in Std. V, major decline in reading levels (of 5 percentage points or more) between 2011 and 2012 is seen in Haryana, Bihar, Madhya Pradesh, Maharashtra and Kerala. Even private schools in Maharashtra and Kerala, with a large proportion of aided schools; show a decline in reading ability for Std. V." (Source: http://www.pratham.org)

However, the report doesn't throw any light about the reasons for good performance or the poor performance. The language teachers hardly conduct error assessment drive for their students due to lack or easy access of the standardised tools. Many a times teachers tend to interpret meanings from the student's erroneous sentences. This works well if done in the presence of the student, but may fall short of success in the absence of the student. (Md. Obaidul Hamid, 2007). The students learning English as second language face some specific problems in learning English as a second language, in writing essays, phrases and idioms, using conjunctions and sentence patterns (Singaravelu, 2006). The reading errors can be related with the comprehension or with the mechanical aspect of reading with or without comprehension.

The present study focuses only on the reading errors committed by the students without getting into the depth of the comprehension level of the child.

Specific Objectives

- To identify reading errors made by students during loud reading of English text
- To develop reading error profile of class
- To prepare loud reading profile of individual students

Sample

Forty children studying in Class III of KV constituted the sample for the present study. The sample school had two sections of Class III each having 40-43 students. The discussion with the principal before data collection resulted in selection of the section having maximum number of below average readers, as perceived by teachers.

Data Collection

Few excerpts from the NCERT Class III language textbooks were chosen and opinion of the experts was sought on the usage of text as a tool for recording reading errors. The loud reading error profiles thus developed would facilitate in planning remedial strategies both for the class as well as individual students. The text opined as most suitable for the purpose was selected and its multiple copies were prepared, one for each child. Each child was requested to read aloud the text and the observation was recorded as:

1. The words in which the child required some assistance from the researcher were underlined, say for example around.
2. The words at which the child hesitated but doesn't needed any help were √ above the words. Say for example little √.
3. If the child has made some insertions between two words in the text then ^ was inserted between the two words and the word inserted was also mentioned there.
4. For words which were mispronounced, the same is written above the word.
5. Omitted words were circled.
6. If the child has reversed the order of words while reading then ∪ was inserted to mark the reversal.
7. The punctuation marks deleted by the child while reading were circled and additions if any by the child were mentioned there.
8. If the child repeats the words while reading then ~~~was made beneath the word.
9. If the child reads a word incorrectly and then realises the mistake and self corrects the mistake, then in that case "sc" was written along with the word.

10. If the child makes some substitution while reading then the substituted word is stroked out and the new word is written over it.

The above errors were adopted from page 242 "Assessment of children, fundamental methods and practices" by Joseph C Witt, Stephen N Elliott, Jack J. Kramer and Frank M. Gresham5.(1994)

Data Analysis and Discussion

The paragraphs below present the analysis of the data with respect to each of the above mentioned ten error behaviours.

1. Error behaviour ***words aided***

The text read by the students contained around 70 words. The data for the number of words aided with respect to number of students is presented in the figure 1 below.

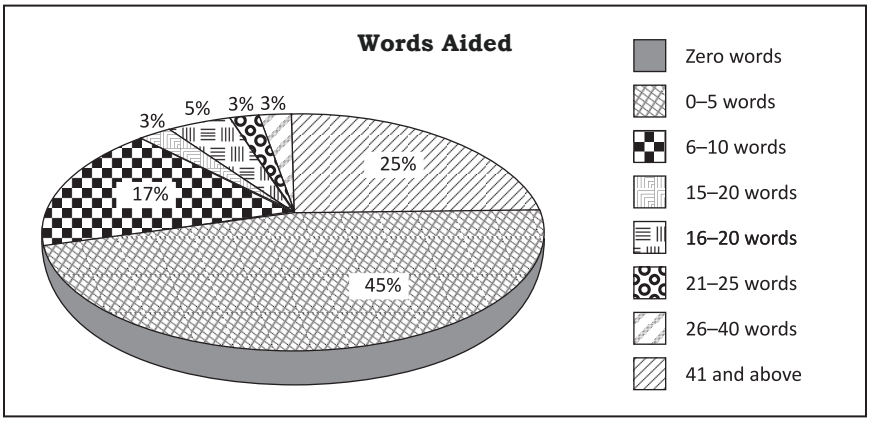

Figure 1: Words aided with respect to number of students

Total number of students in the class=40

There were 10 students who didn't required any help in reading the text given, where as 18 students required help in reading at the most 5 different words. Only 1 child needed assistance in 41 different words.

Table 1 shows the number of times a word was aided and for how many students. Here the frequency is inclusive of the situation where the child sought help more than once for the same word appearing at different place in the text i.e. why difference in the number of frequency and number of students.

Table 1
Words Aided

Word Aided	Frequency	Number of students
Repeatedly	21	21
Butterflies	17	11
Chases	13	13
Wind	11	11
Buried	10	10
Ratan	8	6
Through	8	8
With	8	6
Birds	7	6
Fields	6	6
Plants	6	5
Tosses	6	6
Colorful	5	5
Around	5	5
Corner	5	5
Peeps	5	5

The words 'butterfly', 'chases', 'repeatedly' seems to be the new ones as maximum students faced difficulties in reading them.

The table indicates that the text selected for reading was age and ability appropriate as 70 per cent students in the class were able to read it without much assistance. As per Fig.1 only five per cent i.e. 2 students required assistance in more than 20 words.

2. Error behaviour ***Hesitated but no help needed***

This error behaviour is said to be exhibited when the child stops at a word for may be less than five seconds and then reads it correctly without any help. The table below presents the data regarding this behaviour.

Here hesitation denotes that the child has acquired basic reading skills but somehow lacks confidence or is afraid of the mistakes. The error behaviour 'hesitation' is different from the previous error behaviour of 'words aided' in the aspect that in hesitation the child hesitates but didn't ask for help whereas in the words aided the student was asking for help, and moreover there were no obvious visual signs of struggle to read as they were present in the hesitations.

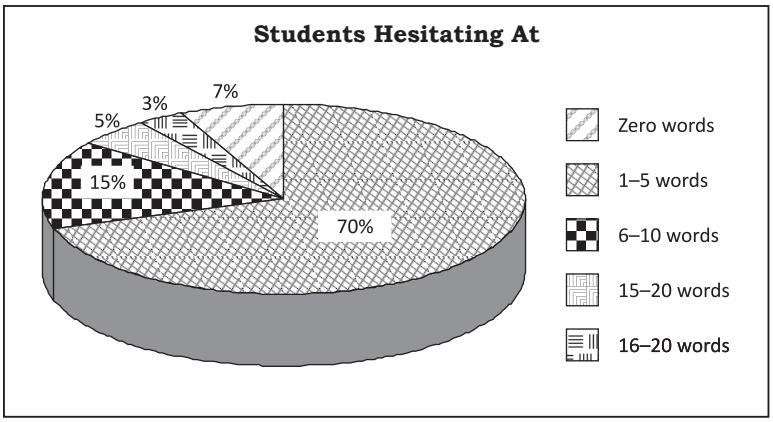

Figure 2: Hesitation with respect to number of words

Fig. 2 above shows that 70 per cent of the students were hesitating at five words but they didn't need any help in reading these words. The table 2 below presents the data with respect to the words at which students hesitated versus the number of students.

Table 2
Error Behaviour "Hesitation"

Words	No of students hesitating
Butterflies	12
Fields	8
Colorful	8
Plants	6
Ask	6
Paddy	6
Rattan	6
Goes	5
peeps	5

The maximum students (12) were found to hesitate at the word "butterflies" followed by (8) students hesitating at the words "fields" and "colorful". Linking it to figure 2, 70 per cent students lie in the range of 1-5 words for this error behaviour, one may expect long list of different words eliciting error behaviour, however from the list of words in table 2, two common words i.e. 'butterflies' and 'fields' can be identified at which 50 per cent of the sample population exhibited the error behaviour. These words might be the new/unfamiliar words for the class.

3. Error behaviour ***Insertions***

The error behaviour insertions implies the situation where a child may add a word in between the text or add a letter as prefix or suffix say for example reading "flowers" in place of "flower", or reading "Rohit is a good boy" instead of "Rohit is a boy".

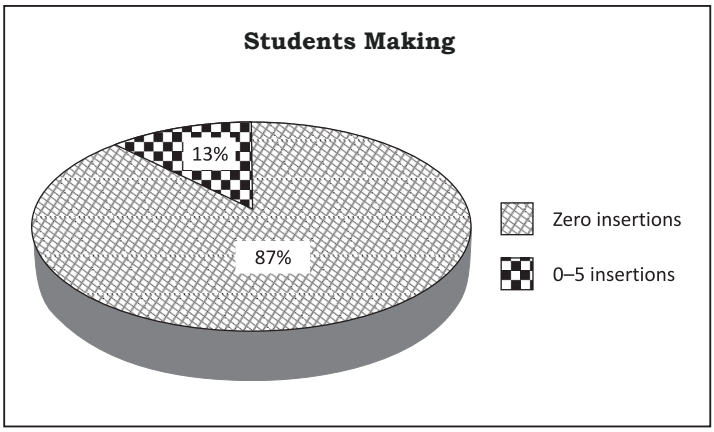

Figure 3: Insertions with respect to number of students

It is evident from Fig. 3, the sample students committed least number of insertions both as a group as well as individual. Majority (87%) students could read without any insertions. The observed insertion behaviour might have occurred due to carelessness, or in the enthusiasm of reading in front of a stranger and that too from a text yet to be covered in the class. Moreover this error behaviour lacks consistency as observed by the researcher both during the data collection as well as its analysis. The error committed at one place was not necessarily repeated with the same word occurring at other place in the text given for loud reading.

4. Error behaviour ***Mispronounciation***

The data analysis revealed, students using different pronunciations for the same words occurring at different places in the text. Say for example "Ratan" was read as "Reytan" at one place and as "Ratta" at another place by the same child. One child misread "the" at all the places.

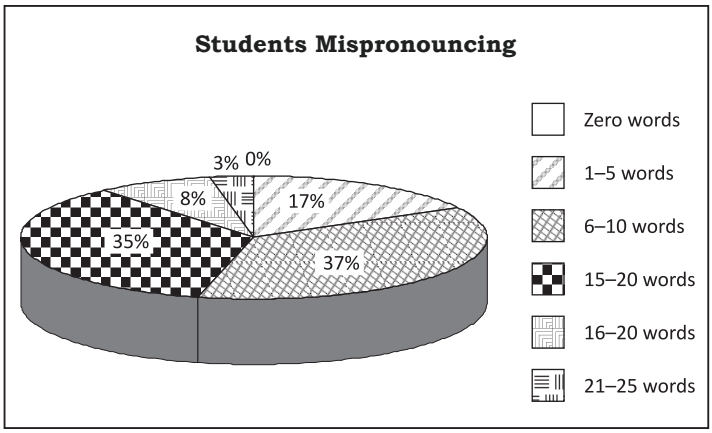

Figure 4: Mispronunciation with respect to number of students

No student was observed to read the entire text without a single mispronunciation, the minimum number of mistake committed by a child was 2. There was only one student who mispronounced 2 words "wind" and "Come" whereas the same child was able to correctly read the supposedly difficult word "repeatedly" in the text.

The table below presents the different words which was mispronounced by the students and the various pronunciation used by different students.

Table 3
Different Pronunciations used by students for same word

S. No.	Word	Frequency	Pronounced by students as
1	Ratan	23	राता रेटन (2) रिटन(2) रीटा रेन (2) रैट रताना राटना रिटिना रटान (2)रिटन (3) रटा रटाना रेटिना रेन्तन रटना (2) रीना रेन्टस रेन्ट(2) राटा रेनू राटन रटन
2	Wait	14	वीट वेत्स विद विन्ट वट (2) वेन्ट (3) वाट वो वाल वर्ड वेर वोट ओट वे
3	Tears	11	टराइज ट्रइस टाइमस टेरस टराइस ट्राइस टीस टीस ट्रीज टेयर्स ट्रस
4	Corner	11	कोर्न कलोसर कुनर कलोनर कर्निस कोरना कानर (2) केरनर कार कोरन कोनड
5	Plants	10	प्लेत्स प्लेटी प्लींटस प्लेन्टस (3) पाटस प्लेटस प्लेडस प्लेस (2)पलानेटस प्लेट
6	Repeatedly	9	रेपटड रीपिटली रिपेटली रिप्लाइड रिलाटड रिटेपरडली रिप्लाटली रिपीट रिपलाइटली
7	Windows	9	वानडो वरडिंग वाइन्ड विन्डस वालडो वुन्ड विन्डस वैन्ड वोन्ड

8	Peeps	9	पेंपिस पेपर पीपल पीपरस पाकी पेपरस पीस (6) पीन्स प्लाटस
9	Tosses	8	टोयस टसस टोस(3) टोशिस टस (2) टासड टूसस टायस
10	Buried	8	बारिड वैलड ब्राइड (2) बर बरड बुरीड (2)बर्ड ब्रउड
11	Wild	8	वे (2)विलड(4) विटस विल्ड (8) वाइन्ड (2) विन्ड (2) वोल्ड वोन्ड
12	Talk	8	टेकन (7) टल्क टक टेल (3) टेल्क (2) टोल टैक टेलक (2)
13	Field	8	फेल्ड (5) फेट फेल्डस (3) फाइलड फाइल्डस फाइल्ड फलाइड फलाइन्ड
14	Flies	8	फिलस (8) फिज फिलीश फलीस (2) फूलस फील्स (2) प्लीपस फलाइ
15	Chases	7	चेस (3) चेसिस (3) केस चिस चूस चस चाइस
16	Through	6	थराऊ (2) था (2) थ्राऊ थाट थ्रुम थो
17	Wind	6	वैड वाइन्ड (5) वेन्ड विड वेड विड
18	Head	6	हिड (4) हड (2) हेन्ड हेयर हीड हेथ
19	Wet	5	वेन्ट (11) वेव्ट विंट(2) वेन्ड वेस्ट
20	Paddy	5	प्रेडी (2) पाइड रेडी बोडी पाडी
21	Toss	5	टोज टायस (2)टोसिस टूस (7)टस (4)
22	Goes	5	गूज (3) इस गस (2)गोट डस
23	Heads	5	हिल्डस हिडस (3) हिड हेन्डस हेन्डस
24	Come	4	केम (4) कोम सेमी केमी
25	Eyes	4	ऐवरी आइसस ऐवर ऐक्सी
26	His	3	हैज़ हेस द
27	Little	3	लाइट लेटर लिड
28	Find	3	फिन्ड (2) फील्ड (2) फलीट
29	Does	3	इस डूस डू
30	Has	3	हिस वास (2) हेड
31	Sweet	3	स्लोली स्वेंट सैवट
32	Says	3	सन्स बेथस स्लोली
33	Crying	2	कैरिंग (14) क्रिंग
34	The	2	दे टू (2)
35	Around	2	अन्डरस्टेन्ड अरन्ड
36	He	2	हर हिडस
37	Why	2	वे (3) वो
38	Now	2	नो (2) ओन
39	Butterflies	2	यूटीफुल वटरफीलस (3)
40	Loves	2	लवली (2)लीवस (2)

The table above shows that the same word has been pronounced in amazingly different ways by the students. The frequency here denotes the number of different pronunciations used by the students for a particular word. The number in bracket's along with

the words in column four in the above table shows the number of times the word has been spoken like that by the students, not necessarily the same student. Say for example the word "crying" has frequency 2 indicating only 2 ways of mispronunciation of this word by the students, but the number in the bracket after the word कैरिंग is 14 which indicate that 14 times the same mispronunciation for the word "crying" has been used by the students while reading the text. The word "crying" has appeared only once in the text. This is a very interesting and thought provoking observation in the sense that 45 per cent of the class was found to be committing the same mistake without any apparent reason. This may point that the children are more or less on the same reading level. It may also mean that students are facing the same difficulty with respect to the same phonetics. This may be interpreted as the need for making some relevant changes in teaching loud reading for the benefit of whole class.

5. Error behaviour ***Omissions***

This error behaviour may be present in the expert loud readers as well as the beginning loud readers, though the reason for its existence may be entirely different. In the fast readers the behaviour may occur due to their carelessness or may be due to their hurry to finish the reading whereas in the beginner readers the same may occur due to their lack of confidence in their own abilities to read the words. Hence they may tend to omit few words which are perhaps self-perceived to be beyond their own reading ability.

The data analysis revealed that only six students (15 %) out of the 40 were able to read the entire text without any omission, and the rest of the class had exhibited the error behaviour omission. Most of the students had omitted the "s" and "es" wherever they appeared as suffix in the text say for e.g. in plants or tosses etc. This might be happening due to carelessness on the part of the students. The data analysis suggested more practice for reading plurals should be done in the class.

Interestingly, many students who have shown this behaviour have omitted words or sentences from the second paragraph of the text. This might have happened due to fatigue or decrease in the children's motivation to read by the time they reached second paragraph or he/she might be in a hurry to finish the work.

6. Error behaviour ***Reversals***

It was observed that the error behaviour reversal was not at all displayed by any of the sample student. The reason for absence

of this behaviour might be found in the manner, the text was read aloud i.e. reading the text by blending the letters. The reversal may occur at three levels one at the level of letters and second at the level of words and the third at the level of sentences but none has been shown by the sample students; this marks the lack of perceptual errors. This may also lead to the inference that none of the child has specific learning disability as frequent consistent reversals are one of the indicatory symptoms.

7. Error behaviour ***Punctuation***

The students were divided into two categories on the basis of their reading performance i.e. the students reading none of the punctuation correctly and the students reading all correctly. Figure below shows pictorial representation of the same.

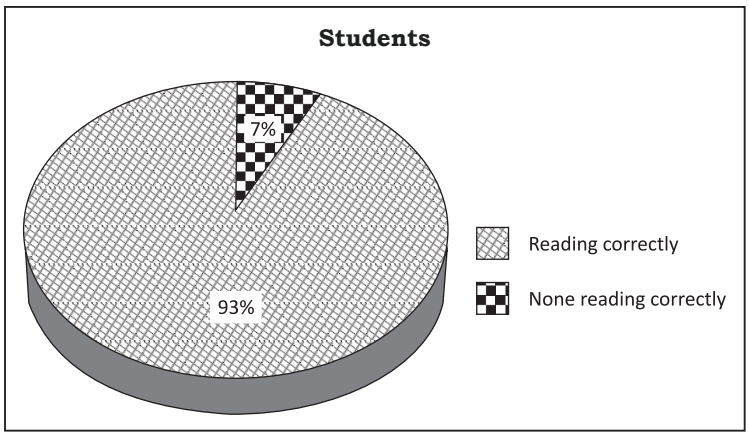

Figure 5: Punctuation with respect to number of students

Most of the students were observed to be beginner readers. Out of 40, only three students were able to loud read the entire text with correct punctuation. Hence it may safely be inferred that these students possess advance reading skills as compared to their classmates. This strongly implies that while teaching loud reading students should be sensitised towards recognising as well as reading of punctuation marks.

8. Error behaviour ***Repetition***

This behaviour might be exhibited in the initial stages of learning to read loudly when the child himself or herself is not very confident

of the correctness of the word being read by him/her. The pictorial presentation of data for this error behaviour.

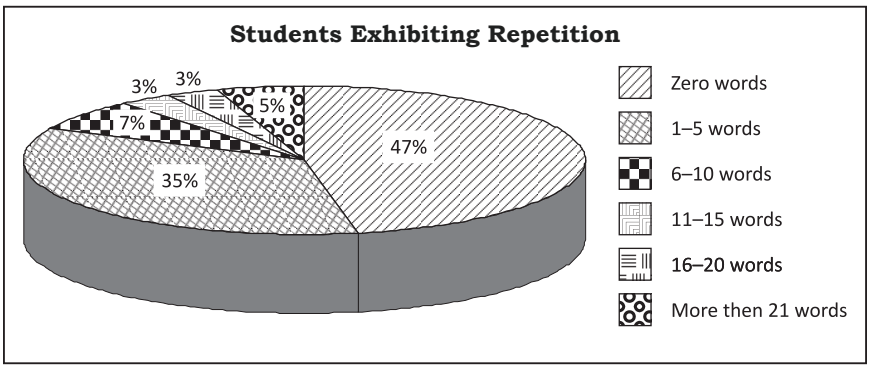

Figure 6: Repetitions with respect to number of students

As evident from the figure almost 50 per cent of the class was found to be lacking the behaviour, which may indicate the comfort level of students with the text chosen. The two students who exhibited the error behaviour for more than 21 words were observed to be showing this for the whole sentences, including the words which they were able to read correctly in the previous sentences. These two students could be the potential case for designing and implementing the loud reading improvement intervention programme.

9. Error behaviour ***Self-correction***

Often student tend to read a word incorrectly and then realise the mistake themselves and self correct the same. This behaviour may occur due to carelessness in the expert reader, whereas in the

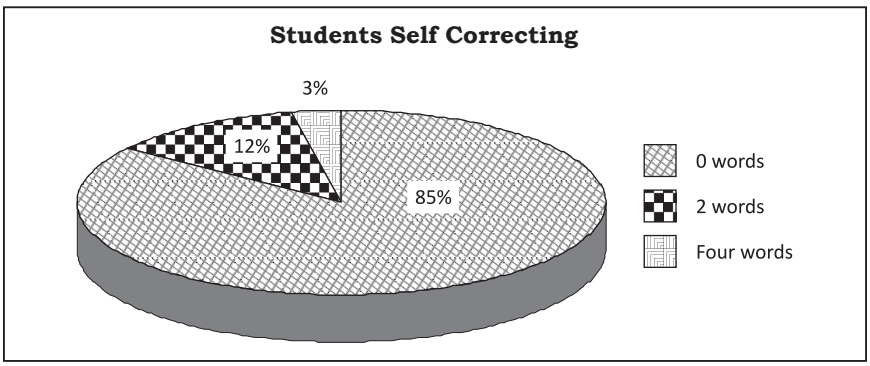

Figure 7: Self-correction with respect to number of students

beginner readers this may indicate the confusion between the words having similar spellings with same or different pronunciation along with being careless and over confident. The figure below pictorially represents the data for this error behaviour.

Possible explanation for this observation could be students' confidence in their own reading.

10. Error behaviour ***Substitutions***

The error behaviour substitution is very different from the error behaviour mispronunciation or omission. In mispronunciation the word in the text and the word spoken by the child usually have some similarity and in omission the word or the text is completely ignored whereas in substitution the actual word or letter from the text is replaced by new words or letters. The analysis for substitution is given below.

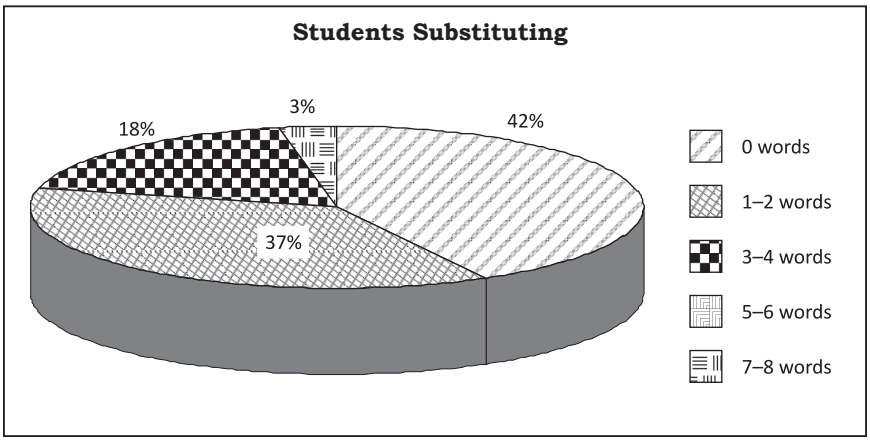

Figure 8: Substitution with respect to number of students

As shown in figure 8 almost fifty per cent of the group hasn't exhibited this behaviour. The behaviour as and when observed denote individual problem. The data analysis failed to reveal any pattern in the error behaviour observed. Only four students were found to be reading "his" as "he" which could also be the case of mispronunciation as well as chance. While analysing data for this behaviour and also during the planning of intervention it is important to consider the words or the texts immediately before and after the words substituted. Often it has been found that the students tend to replace the words or the text with the words which are either being used frequently in daily life by the significant

adults or has some relation with some recent concept taught or discussed in the class.

Inference

The analysis above shows that the errors exhibited by the group are more or less of the individual nature, except for the three error behaviours namely ; mispronunciation, omission, and punctuation. The regular teacher teaching the group needs to focus on the loud reading with proper punctuation and more emphasis should be given on correct pronunciation.

Hesitation while reading may denote a stage or situation wherein the child is trying to read a word with obvious efforts, like he/she will read the spelling first and then try to read it in parts and may be after that he/she may read the word correctly. The entire process may take few seconds and may not necessarily occur in the sequence described here. This error behaviour might be compared with another error behaviour "self correction", the later may occur with the fast and the confident readers due to their carelessness. Another set of similar meaning error behaviours is mispronunciation and substitution. The former is the situation where "the" is read as "they", and if the child reads "the" as " cat" then this is clearly the case of substitution. In mispronunciation the children may read the words incorrectly but phonetically very close to the correct pronunciation.

The reading profile of the class in mathematical language can be shown as below:

Table 4
Reading profile of class

S. No.	Reading error behaviour	Class average (wrt words)	No of students (Above average)	No. of students (Below average)
	Words aided	5.23==5	12 (30%)	28 (70%)
	Hesitation	4.175=4	12 (30%)	28 (70%)
	Insertions	0.2	05 (13%)	35 (87%)
	Mispronunciation	9.925=10	20 (50%)	20 (50%)
	Reversals	0	0	40 (100%)
	Repetitions	5.7=6	05 (13%)	35 (87%)
	Self Correction	0.25	6 (15%)	34 (85%)
	Substitutions	1.37=1	16 (40%)	24 (60%)

Pictorially the same can be represented as

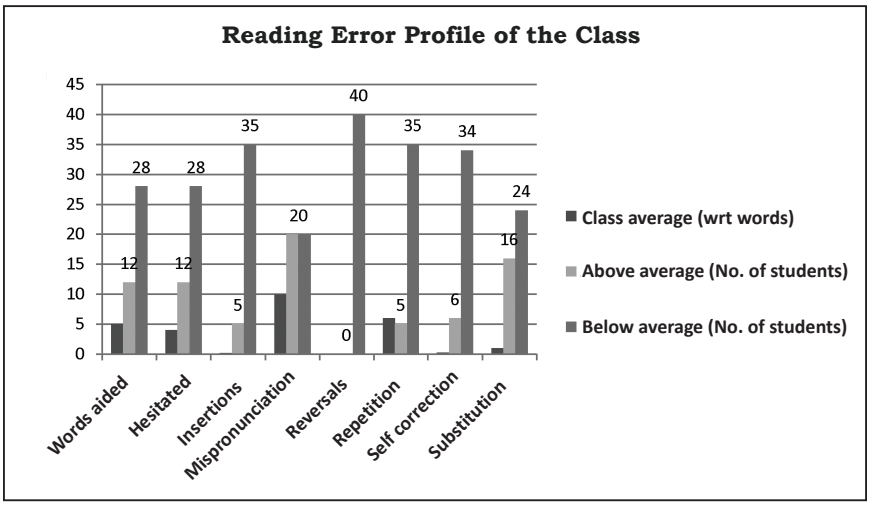

Figure 9: Reading profile of the class

The figures above represent the class profile with respect to 8, out of the ten error behaviour chosen for the current study. The calculation for the error behaviour omissions wasn't possible as the students committed mistakes like removing the suffixes "s" or "es" whenever they appeared. Further, few students were also found to omit either entire paragraph or entire sentences.

Same was the case with the error behaviour punctuation; there were only three students who attempted to read with correct punctuation while the rest of the class completely ignored all the punctuation marks.

The maximum students exhibited error behaviour substitutions, hesitations, words aided, and mispronunciation thereby indicating a need for specialised teaching inputs for the entire class.

Individual student's reading error profile can also be created for the purpose of planning Individualised Education Programme (IEP) in the following manner.

Table 5
Individual student's reading error profile

S. no.	Words Aided	Words Hesitated	Inser-tions	mispronu-nciation	Omiss-ions	Reve-rsals	Punct-uation	Repet-ition	Self correction	Substit-ution
1	47 (5)	4 (4)	-	4 (9)	1/3rd text	-	None read	1 (6)	1 (0.25)	4 (1)
2	22 (5)	11(4)	1 (0.2)	9(9)	Most suffixes	-	None read	-	-	1 (1)

The digits in the brackets denote the class average for the particular reading error behaviour. The table above gives a bird's eye view of the strengths and weakness of the two students with respect to the errors committed by them while reading. The recording of data in this manner is very useful for planning further individual intervention to improve loud reading skill of these children. These two students' had the highest frequency recorded for words aided. Moreover, one of them also omitted maximum text. These students made few mispronunciations; the reason for the same could be their hesitations in reading which was observed during the data collection. Pictorially the same may be represented as in Fig. 10.

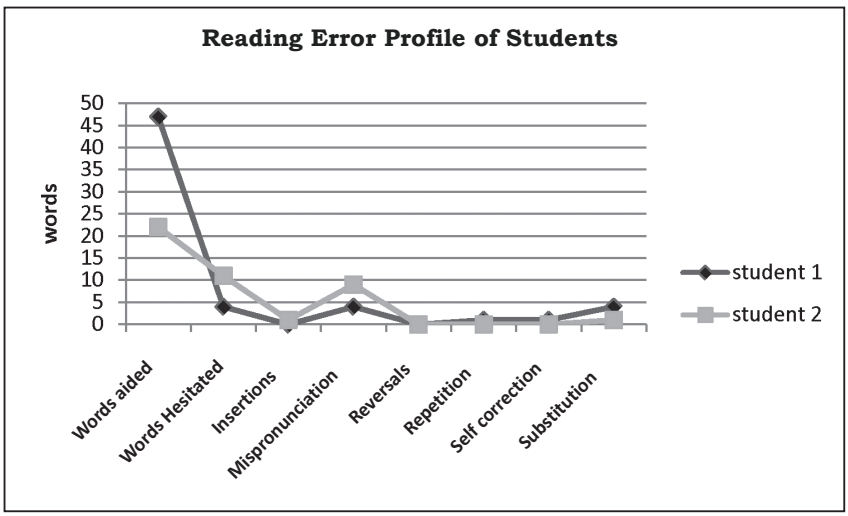

Figure 10: Loud reading error profile of students

Conclusion

The informal assessment can prove to be a very useful tool in identifying the strengths and weaknesses of the students related to any aspect of teaching learning. The only caution that needs to be taken care of is that it should be done in systematical logical and scientific manner.

The paragraphs above clearly indicates that for the sample group the intervention programme for loud reading improvement should be conducted at two levels namely

- The class as a whole
- Individualised Education Plans for the weaker students

The entire process described above was done without the use of standardised testing tools. The teachers can adopt this method for assessing the entry behaviour of their students, in keeping track of the learning, and also in creating the class as well as the students' profile. The above process may also be used to indicate presence or absence of dyslexia which is specific learning disabilities associated with reading. If a child reads with lot of reversals, insertions, substitutions and omissions, then there is a possibility of child being dyslexic but without formal professional assessment one should refrain from labeling the child and doubting his/her abilities.

The informal assessment of students done above doesn't create pressure on the students as both the assessor and the assessment environment is familiar to the student. It is time as well cost effective too.

A word of caution in the end, the assessment of the errors doesn't necessarily implies that the errors made by students had to be corrected in rigid and non flexible manner at the cost of their self expression rather it is a mere indicator of the point of reference from where the teachers had to begin their work.

REFERENCES

Teaching of English 2005. Report of the focus group, National Council of Educational Research and Training

ASER report 2012, Pratham, (http://www.pratham.org/aser08/presspack 08/press08-nf.pdf)

Hamid, Obaidul Md. 2007. Identifying second language errors: how plausible are plausible reconstructions? *ELT Journal*, vol. 61, No.2.

Singaravelu. 2006. A study of the problems of students of higher secondary classes in learning English as a second language in Thiruvarur districts. *Indian Educational Abstracts*, vol. 6, No 2.

Witt, C. Joseph. Elliott, N. Stephen. Kramer, J. Jack. & Gresham, M. Frank. *Assessment of children, fundamental methods and practices* 1994 Brown and Benchmark

Impact of Parental Encouragement on Level of Aspiration and Academic Performance: A Comparative Study on Adolescents of Uttarakhand

Geeta Rai*

Abstract

The present study entitled 'Impact of Parental Encouragement on Level of Aspiration and Academic Performance: A Comparative Study on Adolescents of Uttarakhand', was carried out in secondary and higher secondary schools of Uttarakhand. It was an attempt to determine the effect of Parental Encouragement on Level of Aspiration and Academic Performance of adolescents. A total of 800 respondents were sampled based on random sampling technique. The data was collected by using Parental Encouragement Scale and Aspiration Scale. Academic Performance was measured on the basis of the marks obtained in Class X and data was analysed using suitable statistical methods. Results indicated that majority of students received average amount of parental encouragement. When groups differentiated on the basis of parental encouragement was analysed on level of aspiration, it was found that they differed on Number of Times the Goal Reach Score (NTRS) but no significant differences were found on other two scores i.e. Goal Discrepancy Score (GDS) and Attainment Discrepancy Score (ADS). Hence, the null hypotheses stating that 'students differentiated on the basis of parental encouragement (high, average, low) would not differ significantly on all dimensions of level of aspiration was partially accepted. Further, no significant difference was found between the groups on academic performance. The present study has a lot of significance for parents and adolescents as it deals with the important aspects of adolescent's developmental variables like aspiration and academic performance which is determined by the parental encouragement provided to them.

Parental encouragement refers to the treatment originating from parents toward the child with a view to enhance the possibilities

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of future occurrences of good behaviour by care, concern, approval and guidance. It is an attitude characterised by keen interest and unconditional love for the child that primarily focuses on improvement rather than outcome. Broadly, there are three kinds of parenting style: authoritarian (imposing their wishes on the child), indulgent (providing rules and guidance without being overbearing), and negligent (not being bothered about the child).

Adler in his theory of 'Individual Psychology' mentioned that when children are encouraged, they feel capable and appreciated. Parent who is encouraging regard the child as a person with feelings and respects the child's right and need to express these feelings. They encourage freedom of emotional expression. They guide the child so that the child may not feel disheartened at a particular point of difficulties. They accept their child for the individual he/she is. Hence, Parental Encouragement is all about authority properly exercised.

Studies in the area of parental encouragement have reported that there is a significant relationship between parental encouragement and educational development of children (Agarwal, 1986; Joshi, 1992). Indulgent parents show concern about their child's performance. They help them to develop creative thinking and encourage healthy discussions in family matters. As a result, the children receiving constant encouragement and support from their parents are more intelligent, can easily adjust themselves in critical situations and have a better self-concept (Agarwal, 1986; Rawat, 1994; Rai, 2010).

American psychologist Murray (1893-1988) in his study on personality revealed that human behaviour is goal oriented and the most important thing to know about a person is to find out the direction and intensity of his/her aspirations. 'Level of aspiration' plays an important role in influencing the adolescents' self-concept. In describing a person's level of aspiration, we are in fact describing the person. It is an expression of the self, of the subject's future, of past orientation, confidence in oneself, fear of failure, optimism or pessimism, his/her ambition and courage to face reality. For these and other reasons investigation of an individual's level of aspiration is an effective way of learning to understand his personality.

Family climate plays an important role in the successful attainment of educational aspirations in the case of adolescents (Anshu, 1988; Marjoribanks, 2003; Kirk et al., 2010; Ibtesam, 2010;

and Nicholas et al., 2010). Hence, it was inferred that educational aspirations are enhanced by bringing change in environmental and personal factors (Garg et al., 2002; Grieve, 2009; Salami, 2009; Nicholas et al., 2010 and Kaur, 2011). Contrary to these findings, Roberts et al. (2007) found negative correlation between the two factors while the study of Leigh et al. (2004) and Singh (2011) found no significant relationship with home environment and educational aspirations.

Typically young adolescents set goals beyond their reach, partly because they are unable to assess their capacities accurately and partly because they are subject to parental pressures to get ahead. When they fall below the goals they set for themselves, they are unhappy and dissatisfied. They feel inadequate and this makes them strive to live up to the goals by exerting pressure to do more; this, in turn, leads to anxiety or to the assumption of a defensive stand in which others are blamed for the adolescents' failure.

The present study was conducted on the state of Uttarakhand, constituting of two demographic regions: Kumaun and Garhwal. Uttarakhand is noted for a number of prestigious schools and institutions imparting higher education. District-wise achievement in level of education is found to be quite encouraging except the female literacy which is found to be relatively low in hill areas of Tehri Garhwal, Champawat, Bageshwar and Uttarkashi. Thus, while the plains have developed steadily, the hilly areas have relatively remained educationally backward, poverty being the main cause. Therefore, a need was felt to investigate the reason for this lopsided development, especially in the field of education, resulting in high incidence of academic underachievement. The study further aims to help parents to understand and thereby encourage their adolescent children to explore their capacities, to set up realistic goals such that they can optimise their achievement and gain confidence in themselves, which in turn, may enhance their personality.

Statement of the Problem

'To study the effect of Parental encouragement on Level of Aspiration and Academic Performance of the Adolescents of Uttarakhand.'

Objectives of the Study

1. To find out the level of parental encouragement among adolescents of Uttarakhand State.

2. To study the influence of parental encouragement on the level of aspiration and academic performance of the students.

Hypotheses 1

Students differentiated on the basis of parental encouragement (high, average and low) would not differ significantly on all scores of level of aspiration i.e. Goal Discrepancy Score, Attainment Discrepancy and Number of Times the Goal Reach Score.

Vs

Students differentiated on the basis of parental encouragement (high, average and low) would differ on all scores of level of aspiration i.e. Goal Discrepancy Score, Attainment Discrepancy and Number of Times the Goal Reach Score.

Hypotheses 2

Students differentiated on the basis of parental encouragement (high, average, low) would not differ significantly on academic performance.

Vs

Students differentiated on the basis of parental encouragement (high, average, low) would differ on academic performance.

Methodology

The normative survey method was employed in the present investigation for the purpose of surveying the population under study. A multistage random sampling procedure was followed in the selection of the sample. The sample comprised of 800 students of secondary and higher secondary schools of Uttarakhand.

Tools

In order to collect the data of the present study the tools used were:

1. Parental Encouragement Scale
2. Aspiration Scale
3. Academic Performance

Parental Encouragement Scale

Parental Encouragement Scale (PES) developed and standardised by R. R. Sharma was used. The scale contains 40 items with three response alternatives where the marks allotted were A-0, B-1 and C-2. As given in the manual, scores of higher parental encouragement

group ranged between 79.25 and 71.90; average parental encouragement group ranged between scores 70.80 and 61.30 while low parental encouragement group ranged between scores 60.90 and 42.34. Thus, higher scores on parental encouragement scale reveal higher degree of parental encouragement, whereas, lower scores reveal the lower degree of encouragement.

Aspiration Scale

The Aspiration Scale developed and standardised by Bhargava and Shah (1996) was used. It is a paper-pencil test comprising of eleven parts, one on each page. The procedure of scoring is simple. It provides three types of scores: (i) Goal Discrepancy Score (GDS), (ii) Attainment Discrepancy Score (ADS) and (iii) The Number of Times the Goal Reach Score (NTRS).

The extent and direction of the difference between actual score on the previous trial and goal set up of the next trial is known as Goal Discrepancy Score (GDS). Attainment Discrepancy Score (ADS) is the difference between aspiration (expected score) and the achievement (actual score) on the same trial. Thus in order to obtain ADS expected performance is subtracted from the actual performance. The size of the discrepancy shows the extent to which one surpasses or fails to reach his goal. Number of times the goal reach score (NTRS) is obtained by the number of times where one's actual score is equal or more than the expected score.

Academic Performance

Academic Performance was measured on the basis of the marks obtained in Class X.

Statistical Analysis

Groups were formed on the basis of level of parental encouragement as indicated in the Parental Encouragement Scale described earlier. The three groups categorised on this basis are:

A_1- Students receiving low parental encouragement

A_2- Students receiving average parental encouragement

A_3- Students receiving high parental encouragement

Majority of students received average amount of parental encouragement (Figure 1). Out of 800 samples selected for the study, the number of students receiving high, average and low parental encouragement is 175 (21.87%), 414 (51.75%) and 211

(26.37%) respectively. Thus, we may say that the trait of parental encouragement is normally distributed among the students constituting the sample under study.

Parental Encouragement and Level of Aspiration (LOA)

The three groups formed on the basis of Parental Encouragement were tested on three scores of aspirations i.e. Goal Discrepancy Score (GDS), Attainment Discrepancy Score (ADS), Number of Times the Goal Reach Score (NTRS).

Table 1
ANOVA on Level of Aspiration (LOA) of High, Average and Low Parental Encouragement Groups

Level of Aspiration	Source of variation	df	Sum of Squares	Mean of Squares	F value	Result
GDS	Among group Within group	2 797	6.16 4727.38	3.08 5.93	0.52	NS
ADS	Among group Within group	2 797	30.89 5404.73	15.44 6.78	2.28	NS
NTRS	Among group Within group	2 797	79.04 5347.8	39.52 6.71	5.89	S

GDS: Goal Discrepancy Score
ADS: Attainment Discrepancy Score
NTRS: Number of Times the Goal Reach Score
S - Significant at 0.05 level
NS- Not Significant

The 'F' value obtained on Goal Discrepancy Score (GDS) and Attainment Discrepancy Score (ADS) is 0.52 and 2.28 respectively which is not significant at 0.05 level of confidence. Hence, null hypothesis 1 is accepted on GDS and ADS scores of Level of Aspiration. However, the obtained 'F' value on Number of Times the Goal Reach Score (NTRS) is 5.89 which is significant at 0.05 level of confidence. Hence, the three groups differ on NTRS score of Level of Aspiration. Alternate Hypothesis 1 stating that "Students differentiated on the basis of parental encouragement (high, average and low) would differ on Number of Times the Goal Reach Score" is accepted.

Table 2
Comparison of Means of High, Average and Low Parental Encouragement Groups on Level of Aspiration (NTRS)

Group Comparison	Mean	Difference	Critical Difference
Low Vs Average	4.63* 5.33	0.70	0.41
Low Vs High	4.63* 5.39	0.76	0.51
Average Vs High	5.33 5.39	0.06	0.46

NTRS- Number of Times the Goal Reach Score
*Significant at 0.05 level

A perusal of Table 2 indicates the critical difference and means among high, average and low levels of parental encouragement, when Number of Times the Goal Reach Score was compared. The Low Vs Average parental encouragement group differed significantly as critical difference is less than the mean difference (0.41 < 0.70). Similarly, the Low Vs High parental encouragement group also differed significantly as mean difference is greater than the critical difference (0.76 > 0.51). When Average and High parental encouragement group was compared the critical difference obtained is 0.46 which is greater than its mean difference 0.06. Hence, these two groups did not differ at 0.05 level of confidence.

Parental Encouragement and Academic Performance

The three groups formed on the basis of parental encouragement were tested by employing ANOVA on the scholastic achievement of the students.

Table 3
ANOVA on Academic Performance of High, Average and Low Parental Encouragement Groups

Source	df	Sum of square	Mean of square	F	Result
Among group	2	145.7	72.85	0.47	N.S
Within group	797	124468.06	156.17		
Total	799				

NS- Not Significant

It is evident from Table 3 that the three groups do not differ significantly on academic performance. This is because obtained 'F' value is 0.47 which is not significant at 0.05 level. Therefore,

null hypothesis 2 which stated that "students having high, average and low Parental Encouragement would not differ significantly on academic performance" is accepted.

Discussion

Parents are an efficacious force in students' development. They have the advantage over peers, educators, counselors and other professionals of serving as a continual and perhaps more stable resource for their children over the life span (Trusty, 1998). Encouraging parent value the unique make up of their children and help them to foster the uniqueness within the limits of healthy personality and social adjustment. Results indicate that parental encouragement is normally distributed among the students constituting the sample under study. Out of 800 sample, the number of students receiving average amount of parental encouragement constituted 414 (51.75%), while high and low parental encouragement group constituted of 175 (21.87%) and 211 (26.37%) respectively (Figure 1).

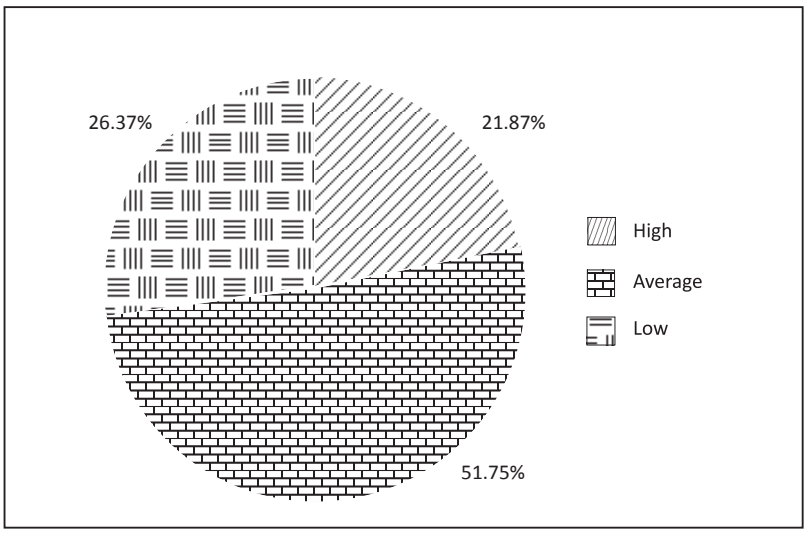

Figure 1: Pie chart showing levels of Parental Encouragement

In analysing the results of the study, the researcher found that no significant difference exists between the three groups formed on the basis of parental encouragement on two scores of level of aspiration i.e. Goal Discrepancy Score (F = 0.52) and Attainment

Discrepancy Score (F = 2.28). Hence, null hypothesis 1 is accepted on GDS and ADS scores of Level of Aspiration.

When the mean scores of all the groups were compared on NTRS i.e. the goal reach score; it was found that the group receiving high parental encouragement (M=5.39) scored more than average (M=5.33) and low (M=4.63) parental encouragement group. The obtained 'F' value on Number of Times the Goal Reach Score (NTRS) is 5.89 which is significant at 0.05 level of confidence. Hence, the three groups differ on NTRS score of Level of Aspiration Scale. Alternate Hypothesis 1 stating that 'Students differentiated on the basis of parental encouragement (high, average and low) would differ on Number of Times the Goal Reach Score is accepted.

The researcher feels that the low parental encouragement group scored minimum on number of times the goal reach score as they fear failure while the average and high parental encouragement group is observed to fix more than realistic target as they are willing to take risk. The findings are corroborative of the results of Bhargava and Shah (1996) and consistent with the previous research reporting which states that male and female undergraduate students did not differ in their level of aspiration (Rahman and Goswami, 2013). Contrary to this, Kruezer et. al. (1992) reported that female students have lower aspiration for their career and to become leaders than their male counterparts whereas Hmingthanzula (2001) and Cochran (2011) found that socio-economic status and ability are important variables that influence the formation of occupational aspirations of adolescents.

A perusal of Table 3 indicates that when students differentiated on the basis of parental encouragement (high, average, low) were compared on academic performance, no significant difference was found (F =0.47) at 0.05 level. The mean difference between Low Vs Average (0.97) and Low Vs High (0.98) is observed to be nominal, whereas for Average Vs High (0.01), it was negligible. The finding is in conformity to the study of Goldenberg et. al. (2001) which stated that there is no significant relation between parental expectations and student achievement. On the contrary, studies of Agarwal (1986) and Haseen and Bhargava (1999) do not agree to our findings. Agarwal (1986) reported that there is significant relationship between parental encouragement and educational development of children. Bhatt and Rajput (1995) further concluded that academic achievement of students, in general was influenced in proportion of their parental encouragement. Sahay (1991) stated

that parental support was the most powerful correlate of academic achievement. Similarly, Fisher and Padmawidjaja (1999) found that parents' high expectations had a strong and lasting influence on students' educational and career development.

On the basis of the findings, the researcher is of the opinion that other factors such as past experience, goal setting and risk taking behaviour, gender differences, interests etc. also influence an adolescent. Further, the present study has shown that the student population is quite competitive amongst themselves; there is an urge for survival, career consciousness, feeling of independence and educational awareness among them which is why parental support does not wholly influence their achievement level. Also as generally seen in the trait of the adolescents, they do not want their parents to wean them or guide them consistently as it challenges their independence.

Thus, it is concluded that parental encouragement does not affect the aspiration level i.e. Goal Discrepancy Score and the difference between expected (aspiration) and actual score (achievement) i.e. Attainment Discrepancy Score for adolescents but significant difference was found on Number of Times the Goal Reach Score. Hence, the null hypothesis 1 stating that "students differentiated on the basis of parental encouragement (high, average, low) would not differ significantly on GDS and ADS scores of level of aspiration" is accepted while alternate hypothesis 1 is accepted on the NTRS score of Level of Aspiration. Further, null hypothesis 2 stating that "there is no significant difference between the three groups (high, average, low parental encouragement) on academic performance" is accepted.

Educational Implication and Conclusion

Adolescence is often portrayed as a period of 'storm and stress'. It is the most important period of human life with its own peculiar characteristics. In order for the adolescent to grow up and become a responsible citizen, and excel in various fields of life, much depends on the proper guidance given by the parents to them.

Today, the society is witnessing degeneration in the values of family system due to replacement of communication with cash, especially so in urban areas. The parents feel that by providing materialistic comforts to the child, they are fulfilling their duty. In turn, their expectation is so high that they force their children to set up unrealistic goals. This often leads to stress and frustration

in them when they face failures. Either they lose confidence in themselves or they adopt unfair practices to achieve success in life. When they grow up as adults they become harmful to the society in which they live.

Therefore, parents are expected to bring up their children in a healthy way so that they can contribute to the upliftment of the society in general and the country in particular. Some parents fulfill these expectations; however, others fail to do so, especially when they want to live their dreams through their children. Thus, parenting is not just upbringing of children; it involves encouragement, involvement, facilitation and role modeling. Parents should realise that a successful child is happy but a happy child is always successful. Carter Hoddings (1907) has rightly quoted 'there are two gifts we can give our children: one is roots, the other is wings.'

Thus the present study has a lot of significance for parents and adolescents as it deals with the important aspects of adolescent's developmental variables like aspiration and academic performance which is determined by the parental encouragement provided to them. The findings of the study will give an insight to parents to develop a positive attitude in their children and provide them with emotional security. This will help them in transforming their attitudes and behaviour from traditional ones to more practical and workable ones. This has also been confirmed by Geckova et. al. (2010) who concluded that in order to stimulate educational aspiration family plays an important role. Besides parents and society, other stakeholders like schools, educationists, should likewise respond in a positive way in the growth and development of the child's personality.

REFERENCES

Agarwal, K. L. 1986. A study of the effect of parental encouragement upon educational development of the students. In M. B. Buch (Ed.), *Fourth Survey of Research in Education*, New Delhi, NCERT, pp. 332.

Anshu. 1988. Level of Aspiration, Achievement Motivation and Adjustment of Adolescents: Effect of Family Climate, Ph.D. thesis abstracts, vol. 23. No.1-4.

Bhargava, M. and Shah, M. A. 1996. *Manual on Level of Aspiration Measure*, National Psychological Corporation, Agra.

Bhatt, P. L. and Rajput, K. S. 1995. A study of the effect of certain family factors on educational aspirations and academic achievement of the

secondary school students in Garhwal. *Educational Research Journal*, No. 5. pp. 99-100.

Cochran, D. B. 2011. Adolescent occupational aspirations: Test of Gottfredson's Theory of Circumscription and Compromise. *Career Development Quarterly*, vol. 59. No. 5. pp 412-427.

Fisher T. A and Padmawidjaya, I. 1999. Parental influences on career development perceived by African-American and Mexican- American college student, *Journal of Multi Cultural Counseling and Development*, vol. 27. pp. 136- 152.

Garg, R., Kauppi C., Lewko J., and Urajnik, D. 2002. A structural model of educational aspirations. *Journal of Career Development*. vol. 29. No. 2. pp. 87-108.

Geckova, A. M., Tavel, P., Dijk, J. P., Abel, T. and Reijneveld S. A. 2010. *Factors associated with educational aspirations among adolescents: cues to counteract socio-economic differences*. BMC Public Health. vol. 10. No. 24. pp. 151-154.

Goldenberg, C., Gallimore, R., Reese, L and Garnier, H. 2001. Cause or Effect? A Longitudinal study of Immigrants Latino Parents' expectations of their children's school performance. *American Educational Research Journal*. Vol. 28. pp. 547-582.

Grieve, K. A. 2009. *Urban African American male high school students' educational aspirations and the influence of family, school and peers*. Ph.D. Thesis in Education, Toledo University, Ohio.

Haseen, T. and Bhargava, M. 1999. Social – Physiological Correlates of Academic Performance. *Asian Journal Psychology and Education*. vol.32, No. 7-8. pp. 16-22.

Hmingthanzula. 2001. *A study of vocational interest and occupational aspirations of Class X students of district headquarters of Mizoram as related to SES and academic achievement*. Ph.D. Edu. Mizoram.

Hoddings, C. 1907-1972. http://en.wikipedia.org/wiki/HoddingCarter.

Ibtesam, H. 2010. The effect of motivation, family environment and student characteristics on academic achievement. *Journal of Instructional Psychology*. vol. 36. No. 2.

Joshi, A. 1992. Classroom Morale in Relation to Locus of Control, Creativity, and Parental Encouragement of Pupils in Hindi-Medium and English-Medium Schools. PhD. Edu. HNB GU.

Kaur, J. 2011. Effect of gender and home environment on educational aspirations of Indian adolescents. Journal of Social and Psychological Sciences.

Kirk, Michael, C., Moss, Rhonda, Lewis, K., Nilsen, Corinne and Colvin, D. Q. 2010. The role of parent expectations on adolescent educational aspirations. *Educational Studies*. vol. 5. No. 3. pp. 26-31.

Kruezer, Barbara and Katherine. 1992. Women Leadership: The effect of gender, gender role orientation, socio-economic status and parental influence on women's aspirations to leader roles. *Dissertation Abstracts International*. vol. 12. Pp. 4495.

Leigh, Duane E. and Gill, A. M. 2004. The effect of community colleges on changing students' educational aspirations. *Economics of Educational Review*. vol. 23. No. 1. pp. 95-102.

Marjoribanks, K. 2003. *Family background, adolescents' achievement and aspirations and young adult's enrolment in Australian Universities*. Aula Abierta. vol. 82. No. 8. pp. 147-159.

Nicholas, Tanya, M., Kotchick, B. A., Barry, Mcnamara, C., Haskins and Deborah, G. 2010. Understanding the educational aspirations of African-American adolescent: child, family and community factors. *The Journal of Black Psychology*. vol. 36. No. 1. pp 227-237.

Rahman, A. M. and Goswami, D. 2013. Level of Aspiration of Undergraduate students in relation to their sex and socio-economic status. *International Journal of Humanities and Social Sciences*. vol. 2. pp 79-86.

Rai, G. 2010. A study of the effect of parental encouragement on self-concept of adolescents of Uttarakhand. *Indian Journal of Educational Research*. vol. 29. No. 2. pp. 31-39.

Rawat, L. 1994. *A study of the effect of parental absence on adjustment, study habit and academic development of the students of high school classes*. Ph.D. Edu. Garh.U.

Roberts, Shani R. and Moss, R. L. 2007. The Impact Family Structure has on Sexual Activity and Educational Aspirations for African-American Adolescents Ages 12-17, *3rd Annual GRASP Symposium*, Wichita State University, Wichita, Kansas: pp 153-156.

Sahay, N. 1991. Familial correlates of Academic achievement in rural Hindu school students. Ph. D. Psy. Ranchi University. *Fifth survey of research in education*. New Delhi: NCERT. pp.726.

Salami, S. O. 2009. Role of personality, vocational interest, academic achievement and socio-cultural factors in educational aspirations of secondary school adolescents in South-Western Nigeria. *Journal of Family Issues*. vol.13. No. 7.

Sharma, R. R. 1997. *Manual on Parental Encouragement Scale*. National Psychological Corporation, Agra.

Singh, P. K. 2011. Home Environment as the Determinant of Educational Aspiration. *Recent Research in Science and Technology*. vol.3. No.6. pp. 25-27.

Trusty, J. 1998. Family influences on Educational Expectations of Late Adolescents. *The Journal of Educational Research*. vol. 91. pp. 260-263.

Effectiveness of Concept Mapping Strategy on Student's Achievement and Concept Retention in Organic Chemistry

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Abstract

The present study aims to investigate the effectiveness of Concept mapping strategy on the achievement and concept retention in Organic Chemistry of Class XII science students belonging to higher Intelligence and lower Intelligence groups. For this purpose a sample of 80 science students was drawn from Class XII science students from a school at Varanasi (U.P.) affiliated to CBSE.

The Pretest – Post test Non-equivalent Groups Design was used for this study. Two intact sections that is 'A' and 'B' of Class XII were chosen as the sample of the study. Out of these two sections, section 'A' was randomly assigned as the experimental group and other section 'B' as the control group. Both the groups were equated on intelligence using Mixed Group Test of Intelligence (Hindi Version) by Dr. P.N. Mehrotra, Verbal and Non-verbal Test. In both groups students of two levels of intelligence based on median split were given treatment. The control group was taught through Lecture method and the experimental group was taught through Concept mapping strategy. The students were tested with investigator constructed Pre and Post-test containing 25 multiple-choice questions. t-test was applied to arrive at the following conclusions:

(i) Experimental group was found to attain significantly higher achievement scores and retained more in both higher and lower intelligence groups as compared to the control group.

(ii) Higher intelligence experimental group was found to attain significantly higher achievement scores and retained more as compared to the lower intelligence experimental group.

Introduction

Planning the science education of young people is all about selection of content to be included, selection of processes and skills

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to be practiced, and selection of appropriate activities to familiarise the students. The selection is normally carried out at the syllabus formulation stage or course production level. However, at the classroom level it is rarely so. Keeping in mind the immense course content of the science curriculum at the intermediate level some new teaching methods must be adopted by the teachers. Organic Chemistry as a main branch of Chemistry has lot of applications in other branches of science (Chen, 2004).

In our schools, conventional Chemistry classes at 10+2 level are conducted to achieve mastery of the textbook content and practice the problems given in the end of the chapter, textbook assignments and examinations. Many students who are considered successful in conventional classes are not successful when it comes to solving problems in a new context. At times students who have mastered solving end of chapter problems have a weak grasp of basic concepts and are unable to apply what they know to new situations.

At present time, to teach Organic Chemistry, traditional methods are being used in our classrooms which does not meet the learning needs of the students of 21st century. Hence there is a need of improvement in Chemistry teaching methods which can help students to learn more effectively.

One way to fulfill this is to use Concept Mapping as a teaching strategy. Concept mapping which is based on Ausubel's theory of meaningful verbal learning is currently a favourite subject of research in the western world. For correcting misconceptions one can use Concept mapping method as misconception correction tool.

Concept maps are similar to flow chart in which concepts are linked through lines and on these lines we write appropriate word or phrases which represent meaningful relationship between these concepts. In Concept maps the key Concept is arranged at the top of the map and less inclusive concepts at the bottom of the map.

Since the subject of Organic Chemistry occupies an important place in the school curriculum there is a need to probe the effectiveness of Concept mapping strategy. Hence, the investigator has selected Concept mapping strategy to find out its relative effectiveness on student's achievement and concept retention in Organic Chemistry.

Objectives

This study was designed to realise the following objectives:

- To develop Concept maps of 2 concepts from selected one unit of Organic Chemistry syllabus prescribed by the C.B.S.E. Board for Class XII science students.
- To compare the achievement and concept retention in Organic Chemistry of students belonging to higher intelligence groups (using median split of intelligence test scores) being taught through Concept Mapping Strategy and through Lecture method.
- To compare the achievement and concept retention in Organic Chemistry of students belonging to lower intelligence groups (using median split of intelligence test scores) being taught through Concept Mapping strategy and through Lecture method.
- To study differential effect of Concept Mapping Strategy on achievement and concept retention in Organic Chemistry of students belonging to higher and lower intelligence groups (using median split of intelligence test scores).

Hypotheses

$H_0$1.1: There is no significant difference between gain in achievement and concept retention in Organic Chemistry of higher intelligence experimental group and higher intelligence control group at the 0.01 level of significance.

$H_0$1.2: There is no significant difference between gain in achievement and concept retention in Organic Chemistry of lower intelligence experimental group and lower intelligence control group at the 0.01 level of significance.

$H_0$1.3: There is no significant difference between gain in achievement and concept retention in Organic Chemistry of higher intelligence experimental group and lower intelligence experimental group at the 0.01 level of significance.

Design and Sample of the Study

The study was quasi-experimental in nature where Pretest—Post-test Non-Equivalent Groups Design was used. The sample of the present study comprised of 80 science students studying in two intact sections that is 'A' and 'B' of Class XII of an English Medium School at Varanasi. The average age of the students was 17 years. Out of these two sections, section 'A' was randomly assigned as the experimental group (n_1=40) and other section 'B' as the control

group (n_2=40) for the study. Since the sample was small and it was difficult to get extreme sub-groups in each group. So by median split of all the students in each group, each group was divided into two halves that are higher intelligence group and lower intelligence group. Table 1 shows the division of each of the two groups into two sub-groups by median split.

Table 1
Division of the two Groups into two Sub-groups by Median Split

Groups	Experimental Group	Control Group	Total
Higher Intelligence Group	20	20	40
Lower Intelligence Group	20	20	40
Total	40	40	80

Mixed Group Test of Intelligence by Mehrotra (1975), Verbal and Non-verbal Test was used to measure general mental ability and t-test was applied to find out the difference between intelligence test scores of the both groups. Results have been given below in Table 2.

Table 2
Mean, S.D. and 't' values obtained on Intelligence test by Experimental Group and Control Group

Group	N	Mean	S.D.	df	't'
Experimental Group	40	59.34	11.34	78	0.258
Control Group	40	60.02	12.22		

Table 2 reveals that "t" value of 0.258 for intelligence scores was not significant at the 0.05 level of significance. It meant that significant difference does not exist between the intelligence of the both groups.

Tools Used

12 Concept maps of 2 concepts from selected one unit of Organic Chemistry syllabus prescribed by the C.B.S.E. Board.

Mixed Group Test of Intelligence (Hindi Version) by Mehrotra (1975), Verbal and Non-verbal Test was used for equating the both groups i.e., experimental and control groups on the basis of their intelligence scores and was also used to divide the students of both groups into two levels of intelligence based on median split.

An Achievement test consisting of 25 multiple-choice questions based on 2 concepts from selected one unit of Organic Chemistry syllabus prescribed by the C.B.S.E. Board for Class XII science

students was developed by the investigator to measure the students' achievement and concept retention in Organic Chemistry. In this test each question carries one mark. The achievement test served as both Pre-test and Post-test (Post-test I and Post-test II).

Experimental Procedure

The experiment was conducted in four phases:
(i) Pre-testing (ii) Experimental treatment (iii) Post-testing and (iv) Delayed Post-testing

Phase I: Pre-testing

In the Pre-test stage, intelligence test and achievement test were administered to the students of both groups i.e. experimental group and control group.

Phase II: Experimental Treatment

Both the groups viz. experimental group and control group were taught by the investigator herself so as to avoid teacher variable. The experimental group was taught through Concept Mapping strategy, while the control group was taught through Lecture method. Same concepts were taught to the both groups.

Teaching of Experimental Group

The group was exposed through Concept Mapping strategy. The investigator introduced two concepts of selected one unit namely Phenol and Ether through 12 concept maps regarding various aspects such as preparation, properties, reactions and inter-conversions, which were developed with the help of students by the investigator on the blackboard.

Development of Concept Maps

It has been previously stated that present study compares the effectiveness of Concept Mapping strategy with Lecture method. Concept Mapping was chosen since it aims at fostering meaningful learning of concepts. This not only adds objectivity to Concept Mapping but also helps the teacher in planning the lesson scientifically.

In this study, for developing Concept Maps the following steps were followed by the researcher –

(a) The topics selected to be taught to the experimental and control groups were enlisted.

(b) The key concepts were identified and listed.
(c) The concepts underlying the key concepts were identified and listed.
(d) The various concepts were hierarchically arranged.
(e) The concepts were mapped out, with the key concepts at the centre or at the top and the concepts hierarchically spread out.
(f) The various concepts were inter-linked by using suitable links.
(g) These linking lines were defined by using suitable words/ phrases to elicit meaningful relationships between the concepts.

Even while implementing lessons in the class, on the basis of the above concrete steps a teacher can effectively proceed and ensure that objectives of meaningful learning are sequentially met. Thus developing the Concept Mapping strategy ensures fulfilling the objectives or goals while keeping the interest of the students in mind.

Stages of the Concept Mapping Strategy

After in-depth review of the research work done on Concept Mapping strategy and by carefully analysing the above listed sequential steps for developing concept maps, the various stages of Concept Mapping strategy were developed by the investigator. The Concept Mapping strategy developed in this study consists of well defined stages. This makes the strategy more flexible and gives freedom to the teacher to mould the various stages (though within the prescribed framework) if the circumstances prevailing in the classroom so demand. Keeping all these points in mind following stages of the Concept Mapping strategy were developed by the investigator:

Stage I: Presentation of Abstraction

(a) The students were presented with a definition or generalisation, which was linked to the learner's existing cognitive structure.
(b) The students were asked to identify various concepts and sub-concepts and enlist them.
(c) The students' understanding of these concepts was assessed by asking them to provide new and unique examples.

Stage II: Propositional Stage

(a) The teacher used prompts and cues to guide the learners to arrange the concepts hierarchically with the broader/general

concept at the top and the less inclusive concepts at the bottom, giving the whole structure the look of a pyramid.

(b) The various concepts were inter-linked logically by using (arrowhead) lines.

(c) These lines were supplemented by word/words/phrases, which defined them and elicited meaningful relationships between the various concepts.

(d) The whole Concept map was viewed as a network of concepts.

Stage III: Application

The students applied their knowledge to generate new examples and reflected on the existing ones.

Stage IV: Closure

The students summarised the major ideas developed during discussion.

A Sample Lesson Plan indicative of the procedure adopted while teaching through Concept Mapping strategy has been given below:

Lesson Plan For Concept Mapping

Topic : Phenols

The teacher started the lesson by probing the previous knowledge of the students.

Teacher : 

What is the name of this compound?

Student : Benzene.

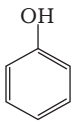
Teacher : The structure of Benzene is also called by some other name, what is it?

Student : Benzene ring or Aromatic ring.

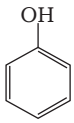
Teacher : What is the simplest hydroxy derivative of Benzene?

Student : Phenol

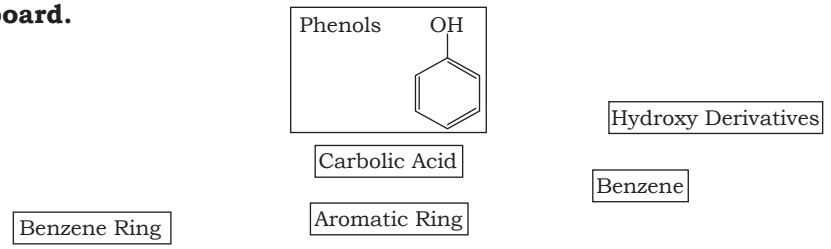
Teacher : What is the structure of Phenol?

Student : 

Teacher : Phenol is also known by other name what is it?

Student : Carbolic acid. 

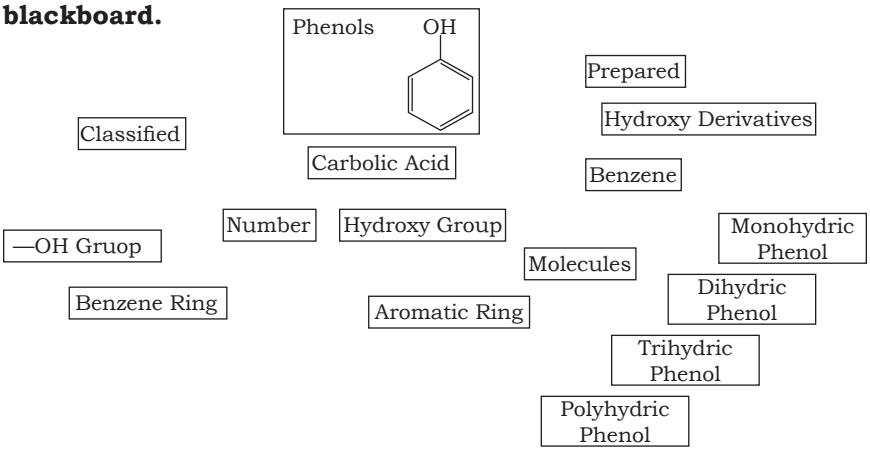
The teacher writes 'Phenols' , 'Benzene', 'Hydroxy Derivatives' 'Benzene Ring' 'Aromatic Ring','Carbolic Acid', on the black board.



Teacher : In the structure of Phenol the symbol —OH represents to which group?
Student : Hydroxyl group (—OH Group).
Teacher : What are the synonyms of make and divide?
Student : Prepare and Classified.
Teacher : On the basis of number of hydroxyl group present in the molecule of Phenol, it can be classified into how many types?
Student : .....
Teacher : On the basis of number of hydroxyl group present in the molecule of Phenol, it can be classified into four types:

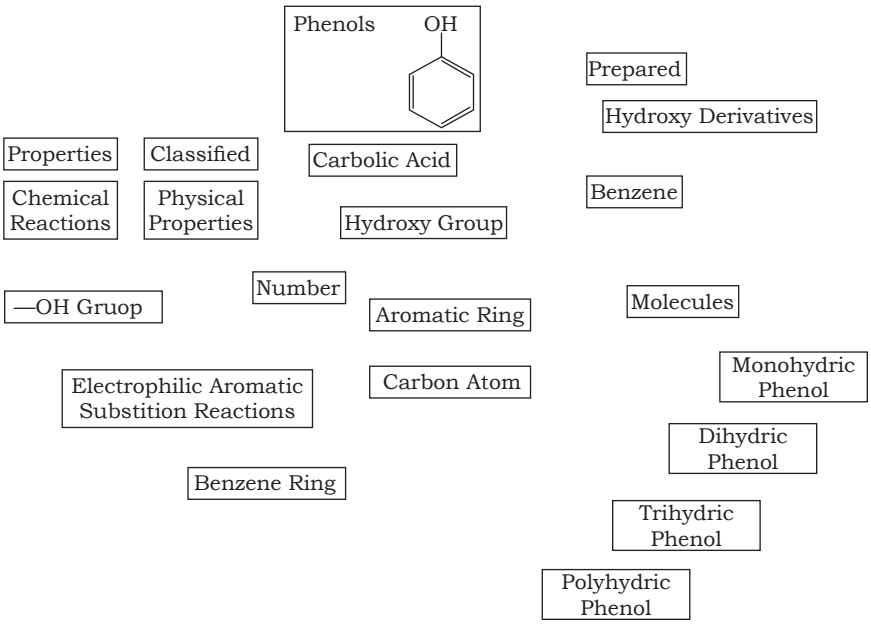
(i) Monohydric Phenol
(ii) Dihydric Phenol
(iii) Trihydric Phenol
(iv) Polyhydric Phenol

The teacher adds 'Hydroxyl group', '—OH Group', 'Prepared', 'Number', 'Classified', 'Molecules', Monohydric Phenol', 'Dihydric Phenol', 'Trihydric Phenol', 'Polyhydric Phenol', on the blackboard.

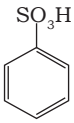


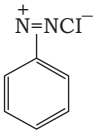
Teacher : What is the General formula of Alcohol?
Student : R—OH
Teacher : What is the structural difference between Alcohol and Phenol?
Student : . . . . . .
Teacher : Alcohol contains hydroxyl group directly attached to carbon atom of an aliphatic system (CH3OH) while a phenol contains hydroxyl group directly attached to carbon atom of an aromatic system (C6H5OH).
Teacher : Water is found in three states solid, liquid and gas. What does this statement represents about water?
Student : Properties of water.
Teacher : Which type of properties a chemical compound possess?
Student : Chemical reactions and Physical properties.
Teacher : Due to benzene ring Phenol shows which type of chemical reactions?
Student : . . . . . .
Teacher : Electrophilic Aromatic Substitution reactions.

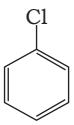
The teacher adds 'Carbon Atom', 'Properties', 'Chemical Reactions', 'Physical Properties', 'Electrophilic Aromatic Substitution Reactions', on the black board.



Teacher : What happens when Benzene reacts with propene at 523K with Phosphoric acid?
Student : Cumene is produced.
Teacher : Give the name of these compounds –

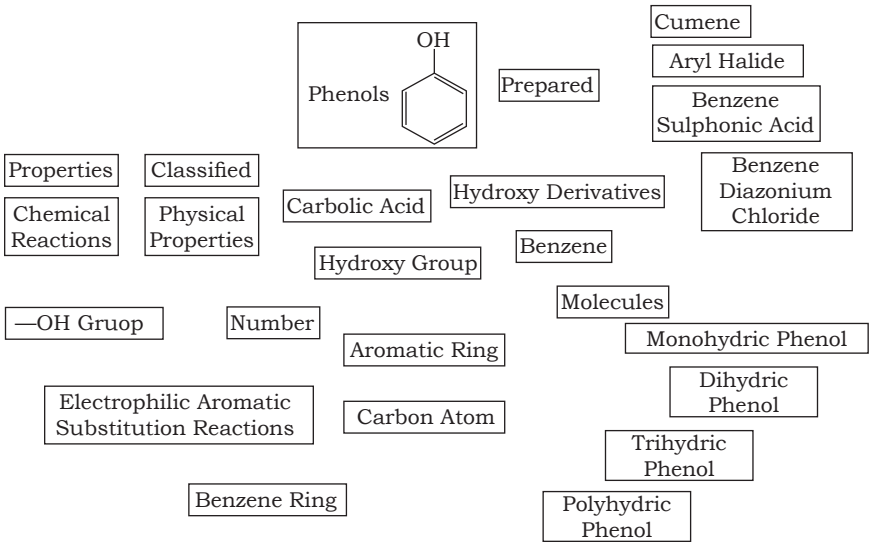
(a) 

(b) 

(c) 

Student : (a) Benzene Sulphonic acid
(b) Benzene diazonium chloride
(c) Chlorobenzene
Teacher : Chlorobenzene is alkyl halide or Aryl halide?
Student : Aryl halide.

The teacher adds 'Cumene', 'Aryl Halide', 'Benzene Sulphonic Acid' and 'Benzene Diazonium Chloride', on the black board.



The teacher points at the list of concepts and sub-concepts written on the black board.

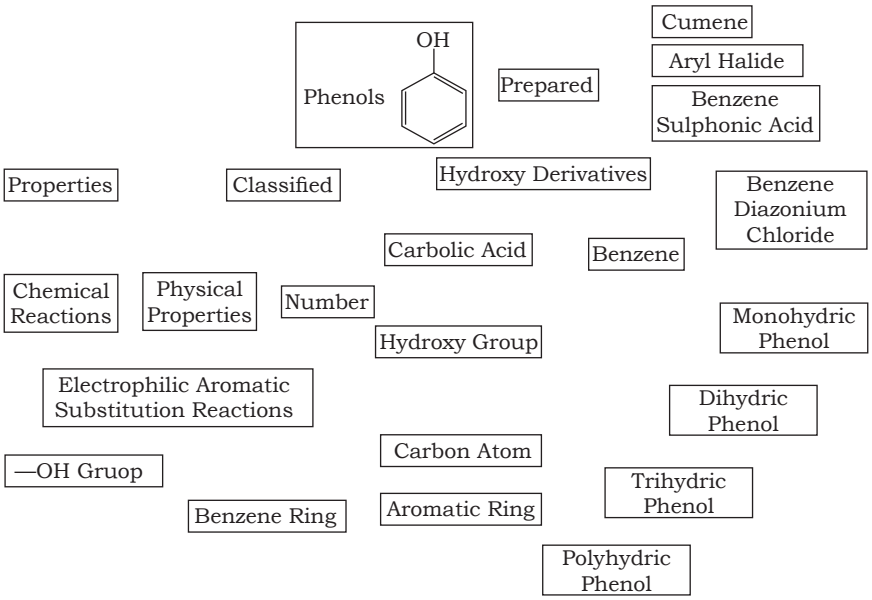
Teacher : Of the various concepts you have noted down, identify the most inclusive i.e. broader concept.

Student : Phenols.

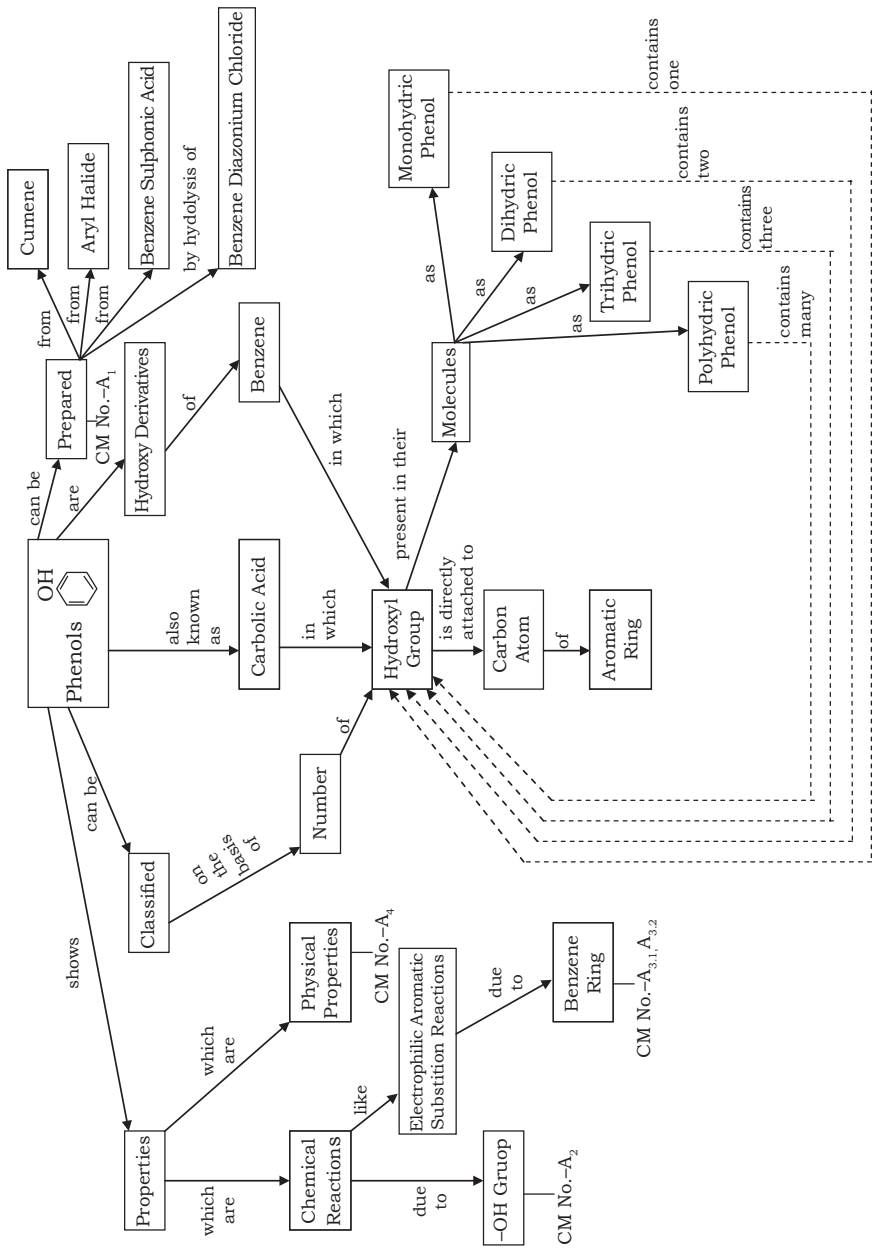
Teacher : Right, **Teacher shifts this concept label on the top and asks the students to identify the next less inclusive concept, which should occupy the hierarchy.**

Student : Properties and Prepared.

The teacher shifts these concept labels in the next hierarchical place on the black board and continues probing the students till all the concept labels are arranged in the hierarchical order, thus a pyramid is developed on the black board. She asks the students to copy the list in their note books.



Now the teacher calls one of the students on the board and asks her to connect the various labels using arrowhead lines. The rest of the students were directed to do so in their notebooks. After appreciating the students' efforts the teacher guides the students to define the connecting lines with appropriate words so that the relation between concepts could be highlighted using minimum words. The final structure developed through


OH
Phenols
can be
are
Prepared
CM No.–A1
from
Cumene
from
Aryl Halide
from
Benzene Sulphonic Acid
by hydolysis of
Benzene Diazonium Chloride
Hydroxy Derivatives
of
Benzene
in which
also known as
Carbolic Acid
in which
Hydroxyl Group
is directly attached to
Carbon Atom
of
Aromatic Ring
present in their
Molecules
as
Monohydric Phenol
as
Dihydric Phenol
as
Trihydric Phenol
as
Polyhydric Phenol
contains one
contains two
contains three
contains many
can be
Classified
on the basis of
Number
of
shows
Properties
which are
Physical Properties
CM No.–A4
which are
Chemical Reactions
like
Electrophilic Aromatic Substition Reactions
due to
Benzene Ring
CM No.–A3.1, A3.2
due to
–OH Gruop
CM No.–A2

mutual discussion, which was displayed on the black board, looked like:

The teacher completes the lesson by giving a few questions involving reflective thinking, to the pupils to work upon.

The above Lesson Plan at a glance present, how 2 concepts namely Phenol and Ether were introduced to the experimental group through 12 concept maps in an effective manner.

Phase III: Post-testing

After completion of the instructional treatment achievement test was administered as Post-test I to students of experimental group and control group for measuring their achievement.

Phase IV: Delayed Post-testing

After a gap of six weeks from the treatment achievement test was administered again as Post-test II to students of experimental group and control group for measuring their concept retention.

Analysis and Interpretation of Data

Table 3
MeanGain' MeanGain (Retention), S.D. and "t" values obtained on Pre-test and Post-test I , Pre-test and Post-test-II (Delayed Post-test) in Organic Chemistry by Higher Intelligence experimental group and Higher Intelligence control group

Group	N	df	MeanGain (Post -test I – Pre-test)	S.D. (combi-ned)	"t"	MeanGain (Retention) (Post-test II– Pre-test)	S.D. (combined)	"t"
Higher Intelligence Experimental Group	20	38	9.05	2.06	9.98	6.5	2.47	6.78
Higher Intelligence Control Group	20		2.55			1.2		

It is apparent from the result in Table 3 that the mean gain achievement scores and mean concept retention gain scores of students of higher intelligence experimental group is significantly higher than that of the higher intelligence control group and 't' value is significant at the 0.01 level of significance. On the

basis of this result we can say that Concept Mapping Strategy is significantly more effective than the Lecture Method in the improvement of achievement and concept retention in Organic Chemistry of students belonging to higher intelligence group. Thus the hypothesis H01.1, there is no significant difference between gain in achievement and concept retention in Organic Chemistry of higher intelligence experimental group and higher intelligence control group at the 0.01 level of significance is rejected.

Table 4

MeanGain' MeanGain (Retention), S.D. and "t" values obtained on Pre-test and Post-test I , Pre-test and Post-test-II (Delayed Post-test) in Organic Chemistry by Lower Intelligence experimental group and Lower Intelligence control group

Group	N	df	MeanGain (Post -test I – Pre-test)	S.D. (combined)	"t"	MeanGain (Retention) (Post-test II – Pre-test)	S.D. (combi-ned)	"t"
Lower Intelligence Experimental Group	20	38	5.75	1.92	5.93	2.05	1.21	3.38
Lower Intelligence Control Group	20		2.15			0.75		

It is clear from the Table 4 that the mean gain achievement scores and mean concept retention gain scores of students of lower intelligence experimental group is significantly higher than that of the lower intelligence control group and 't' value is significant at the 0.01 level of significance. On the basis of this result we can say that Concept Mapping Strategy is significantly more effective than the Lecture method in the improvement of achievement and concept retention in Organic Chemistry of students belonging to lower intelligence group. Thus the hypothesis H01.2, there is no significant difference between gain in achievement and concept retention in Organic Chemistry of lower intelligence experimental group and lower intelligence control group at the 0.01 level of significance is rejected.

Table 5
MeanGain' MeanGain (Retention), S.D. and "t" values obtained on Pre-test and Post-test I , Pre-test and Post-test-II (Delayed Post-test) in Organic Chemistry by Higher Intelligence experimental group and Lower Intelligence Experimental group

Group	N	df	MeanGain (Post-test I – Pre-test)	S.D. (combi-ned)	"t"	MeanGain (Retention) (Post-test II – Pre-test)	S.D. (combi-ned)	"t"
Higher Intelligence Experimental Group	20	38	9.05	2.50	4.17	6.5	2.57	5.47
Lower Intelligence Experimental Group	20		5.75			2.57		

Table 5 shows that the mean gain achievement scores and mean concept retention gain scores of students of higher intelligence experimental group is significantly higher than that of the lower intelligence experimental group and 't' value is significant at the 0.01 level of significance. On the basis of this result it can be concluded that Concept Mapping Strategy is significantly more effective in the improvement of achievement and concept retention in Organic Chemistry of students belonging to higher intelligence group than students belonging to lower intelligence group. It can also be concluded that more intelligent students are benefited more and retained more by the use of Concept Mapping Strategy. Thus the hypothesis $H_0$1.3, there is no significant difference between gain in achievement and concept retention in Organic Chemistry of higher intelligence experimental group and lower intelligence experimental group at the 0.01 level of significance is rejected.

Discussion of Results

The results of the present study indicates that Concept Mapping Strategy is significantly more effective than the Lecture Method in the improvement of achievement and concept retention in Organic Chemistry of students of both levels of intelligence. The results also indicate that this strategy is more effective for students of higher intelligence group than the lower intelligence group for improvement of achievement and concept retention in Organic Chemistry. The result of this study is also supported by findings of other studies conducted by Gupta (1999), Yekta Z. et. al. (2004), Rao(2004) and

Ahuja(2006).Whereas Snead and Snead (2004) found that effect of Concept Mapping on science achievement of lower ability students have higher success rate and has reported results contrary to the results of the present study. Okebukola (1990), Bantanur (2007), Chiou (2008) and Aparna (2002) have also found this strategy to be superior to Lecture method.

Conclusion

Based on the result of this study, it can be concluded that the Concept Mapping Strategy is more effective for improving the achievement of students in Organic Chemistry and also more effective for concept retention in Organic Chemistry of Class XII science students when compared to the Lecture method. Hence there is a need to include Concept Mapping Strategy with the constructivist basis as one of the major approaches to teach Organic Chemistry in our schools. Use of Concept Mapping Strategy as a main route of teaching or as a complementary strategy for traditional teaching method may improve the students' achievement in Organic Chemistry and knowledge retention capability.

Implications of the Study

The study has significant implications for students as well as teachers:

Implications for Students

Concept Mapping Strategy as an instructional method would be helpful to raise the achievement levels of students. Besides adding to the clarity of concepts, concept maps will lead to the formation of strong linkages with related concepts. Thus Concept Mapping Strategy would be helpful to the students for enhancing retention of concepts in their cognitive structure. During the preparation of Board exams and other competitive exams Concept maps can also be used by the students as revision tools. Concept maps can also be used by the students for identifying gaps in their knowledge, if any, and hence convincing them about the continuity of subject matter.

Implications for Teachers

Concept maps would also be helpful for the subject teachers to identify the causes of under-achievement among students and to remedy them. It would also be helpful for the teachers to organise

their curriculum systematically and present it effectively. Teacher can also use concept maps as misconception correction tools. From students' constructed concept maps, teachers can diagnose students' understanding of concepts and can identify the existing misconceptions. Once misconception in students' cognitive structure are diagnosed, remedial teaching in this direction can also be done by using Concept Maps.

REFERENCES

Ahuja, A. 2006. Effectiveness of Concept Mapping in Learning of Science. Unpublished Doctoral Dissertation, University of Delhi, Delhi.

Aparna, C.F. 2002. The Effect of Concept Mapping as a Teaching Strategy and as an Evaluation Tool in Attainment of Science Concepts of Class V. Unpublished M.Ed. Dissertation. Mysore: Regional Institute of Education.

Bantanur, V. 2007. Effect of Concept Mapping Strategy in Chemistry on Achievement and Attitude of VIII Standard Students. M.Ed. Dissertation, Karnataka University, Dharwad.

Chen, G.H. 2004. Reforming Organic Chemistry Teaching Using Student-Centred Methods. *The China Papers*, November 2004. Retrieved on 14-06-09 from, http://science.uniserve.edu.au/pubs/china/vol4/CP4_C2.pdf

Chiou, Chei-Chang. 2008. The Effect of Concept Mapping on Students' Learning Achievements and Interests. *Innovations in Education and Teaching International*, 45(4), 375-387.

Gupta, V. 1999. Effectiveness of Concept Mapping in Comparison to Inductive Model in Science Education. Unpublished Doctoral Dissertation, University of Delhi, Delhi.

Mehrotra, P.N. 1975. *Mixed Group Test of Intelligence (Hindi version) Verbal and Non- verbal Test Agra*: National Psychological Corporation.

Okebukola, P.A. 1990. Attaining Meaningful Learning of Concepts in Genetics and Ecology: An Examination of the Potency of the Concept-Mapping Technique. *Journal of Research in Science Teaching*, 27(5),493-504.

Rao, Manjula, P. 2004. Effect of Concept Mapping in Science on Science Achievement, Cognitive Skills and Attitude of Students. Electronic Proceedings of International Conference to Review Research on Science, Technology and Mathematics Education. 130-131. Retrieved on 10-12-08 from, http://www.hbcse.tifr.res.in/episteme/episteme-1/themes/knowl_repr

Snead, Donald and Snead, Wanda L. 2004. Concept Mapping and Science Achievement of Middle Grade Students. *Journal of Research in Childhood Education*, 18(4), 306-320.

Yekta Z., Parsa and Nasrabadi A., Nikbakht. Summer 2004. Concept Mapping as an Educational Strategy to Promote Meaningful Learning. *Journal of Medical Education*, 5(2), 47-50.

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