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CONTENTS

Editorial

The issue of *Indian Educational Review* (volume 54, Number 1) carries five research papers, two research notes and summary of three projects completed under the scheme of Educational Research and Innovations Committee. The papers included in the first category focus on various aspects of teaching- learning process. The first paper by Alok Gardia and Ankita Singh highlights the discrimination faced by adolescents in schools and argues for extending just and equal treatment to all students. The paper by K.S. Misra and Stuti Srivastava attempted to find out factors that affect scientific attitude among IX grade students. Their results show that a number of personality factors (e.g., planning, inquisitiveness, motivation, and adaptability) influence the scientific attitude of the students. In her paper, Sushmita Chakraborty examined the psychological engagement of students through age-appropriate grade provision of RTE Act 2009 and found that such an engagement is a collaborative endeavour between teachers and students as a team. She advocated for creating an environment conducive for active participation of such students in all activities of the school. In the next paper by Terapalli, Raju and Prasad, examined the effectiveness of SUCCESS (Strengthening and Universalisation of Quality and Access to Secondary Schools) project in Visakhapatnam district of Andhra Pradesh. The study shows that, for proper foundation of a student, a teacher should take care about the education of the child from the root level. The next paper by Zafar Iqbal also evaluated the effectiveness of in-service programme on ICT for primary teachers in MCD schools of Delhi. The results reveal that teachers are required to undergo continuous professional development on ICT. The two research notes are concerned with dual enrolment in elementary schools in Jharkhand and effectiveness of feedback strategies in terms of accuracy of peer assessment.

The issue carries summary of three research projects conducted under financial support by ERIC. These are: (i) Adoption of RTE in Private Schools of Punjab, (ii) Eklavya Model Residential Schools in Odisha: An Evaluation, (iii) A Study of the Pre-Service Secondary Teacher Education Programme in Jammu Province for Emerging Divergent Education Contexts: Perspective, Practices and Prospects.

The Indian Educational Review focuses on enriching the discipline of education by disseminating finding of educational

research, providing opportunities for exchanging research experience among fellow researchers, motivating academicians and providing inputs to all those involved in policy making and planning. Contributions of academicians, researchers, and freelancer writers are cordially invited for the next issue. We seek your suggestions and view on improvement of the Journal and research initiatives.

Academic Editor

Does Equality Spring from Schools? An Investigation of Assumptions of Equality Among Adolescents of Subaltern Groups

Alok Gardia*and Ankita Singh**

Abstract

In the present modern era, all societies across the globe are striving hard to establish and develop a feeling of equality among its citizens. In such efforts education has become a vital tool for formation of a just and equal society. Therefore, it is imperative that the notion of equality should spring from schools. In such premise, the present investigation has been designed to study the experiences of discrimination faced in the schools by adolescents of subaltern sections of the society to answer if equality springs from schools? A survey was conducted among 500 adolescents selected through random sampling technique to study their experiences and assumptions of equality. The findings of the study supports that subaltern students do experience discrimination in schools; different sub-groups experience low to moderate level of discriminations. However, their assumptions of equality were found to be ideal. It was also found that significant negative relation of experiences of discrimination and assumptions of equality exist in the schools. The study advocates minimizing experiences of discrimination by formation of discrimination free school environment so that the dream of establishing equality may spring from school.

Introduction

Formation of an inclusive society is the primary agenda in all major policy initiatives taken at the national and international levels in the last so many decades. International Covenant on

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Economic, Social and Cultural Rights (1976), International Covenant on Civil and Political Rights (1966), International Convention on the Elimination of all Forms of Racial Discrimination (1963), World Conference Against Racial Discrimination (2001), and Draft Biwako Millennium Framework for Action Towards an Inclusive, Barrier-Free and Rights Based Society for Persons with Disabilities in Asia (2011) proclaim eradication of all forms of discrimination from the society. These policy initiatives have advocated that discrimination still exists in its subtle to blatant forms across the globe.

The present modern world has geared up a global movement with the help of all the stakeholders to form a just and equal society. Among all the stakeholders, role of education in this context is undeniable. Education is the basic platform to nurture right kind of knowledge skill and attitude among prospective citizens so that they may realise the vision of a just and inclusive society. The schools are expected to be the social agents and socialise its citizenries in such a way that they learn to live in harmony with each other. The schools should inculcate among students a sense of synergy and develop a feeling of unity and cooperation. But, somehow looking at the widespread evidences of suppression and exploitation of down trodden classes of society, it appears that schools somehow have failed in their efforts to achieve this stated goal. It has become a place where discrimination as perceived particularly by the vulnerable sections of the students.

Teachers' practices in the school have also been found discriminatory, Hanna and Linden (2009) evidenced that when marking exam papers, teachers give those answers assigned to be of lower caste students lower scores than similar answers that are assigned to be of higher caste students. Interestingly and contrary to previous literature that finds individual discriminate in favour of members of their own group, they find that discrimination against the lower castes is mainly driven by lower caste teachers, while teachers who belong to higher castes do not appear to discriminate at all.

As Indian school set up is so multicultural having different caste composition. The scope of caste based and other discrimination becomes so wide. In a comprehensive study conducted by NGO Navsarjan in 2009 in which the phenomena of discrimination was surveyed in context of dalit children focusing on girls, it was found that many SC children (20 to 50 per cent of sample) had complaints/grievances against their non-dalit teachers in the

school. Further, SC students (25 to 53 per cent) had also reported experiences of discrimination against other (non SC) students in the school.

Similarly, there are also views that Muslims do have the idea that they will be discriminated against and that there is no point in getting educated (Ghosh, 2014). It is further stated that Muslims think that the only option they have left is to get self-employed in small businesses (Mander, 2014).

Bodnar (1993) states that if the process of achieving school effectiveness is to continue, there is a critical need to examine school culture as the focal point for achieving school effectiveness. We must encourage the application of the concepts of culture to school improvement efforts. Schools will need to look within, in order to reveal the basic elements of their existing cultures before they attempt to emulate the characteristics of effective schools. When school personnel are aware of those assumptions which form their existing culture, they will have a better understanding as to how these assumptions influence members' performance and school activities.

Studies reveal that discrimination is prevalent in our schools. Hanna and Linden (2009) in their study 'Measuring Discrimination in education' found that top performing females tend to lose most due to discrimination. Research (Paradies, 2006; Williams and Mohammed 2009; Williams, Neighbor and Jackson 2003) shows that racial discrimination pervades many aspects of human life and is also considered as a risk factor adversely affecting psychological functioning and mental health outcomes for adolescents. Discrimination is practiced in schools and society which influences mental and physical health, students' performance, and environment of the school. (Stone and Meekyung, 2005; Madried, 2010; Hatzenhuehler, Corbin, and Fromme, 2010; and Schwatitz, and Meyer, 2010). The other variables with which discrimination has been studied are Parental Educational Attainment (Sheylal, Valerie and Pati, 2010); Emotional Distress (Maccabe, 2009); Ethenic Identity (Mossakowski, 2003); Dropout Behaviour (Felice, 1981); Psychological Functioning (Sellers, Linder, Martin and Lewis, 2006), etc. The discrimination is suffered especially by subaltern groups. Aronowitz and Giroux (1985) highlighted that the resistance to schooling comes from students of the subordinate classes. The studies suggest that the subaltern classes who are the groups of peoples from subordinate classes that counters

hegemonic practices, movement resistance and struggle against social exclusion (Santos, 2002) suffer from discriminatory experiences within the school.

Thus, the discussion so far led to the fact that firstly, there is a need to ascertain the experiences of discrimination being faced by students particularly of subaltern groups? Secondly, what are the assumptions of equality among students of subaltern groups which may guide us to re-shape school culture focusing equality?

The review of studies mentioned above revealed that there is no study conducted to investigate the relationship between assumptions of equality in school and experiences of discrimination of subaltern sections of the school. Therefore, following research questions have been framed for empirical investigation.

Research Questions

- What is the status of experiences of discrimination faced by adolescents of subaltern sections of the society (i.e., Girls, Religious Minorities, Scheduled Castes and Scheduled Tribes)?
- Do schools have positive perceptions towards assumptions of equality in the school?
- What is the relationship of experiences of discrimination with the assumptions of equality in the school?
- What is the impact of some independent variables on the perception of assumptions of equality in the school?

Assumptions of the Study

Schools are the replicas of society; hence, discrimination which is present in the society comes into school and lead to discrimination to vulnerable sections of the students. This discrimination is experienced by students and is measurable. Schools have some assumptions which are the values that people take for granted in the school and which is responsible for proper functioning of the school. These assumptions can be perceived and measured.

Method

Research Design

In order to achieve the objective of the study descriptive survey method was employed. The population of the study was all the higher secondary adolescents studying in schools affiliated to UP and CBSE boards in the city of Varanasi.

Sample and Sampling Techniques

A sample consisting 500 adolescents belonging to subaltern classes of urban area of Varanasi was drawn following random cluster sampling technique. Varanasi City has eight administrative blocks; these eight administrative blocks are divided into 15 clusters according to their geographical locality comprising only the urban area of Varanasi. Further, 5 clusters were randomly selected from the clusters of school and all schools under each clusters were chosen as sample of the study. In this way 26 schools were obtained to draw out final sample of the study. Among these schools, 11 schools were of Board of High School and Intermediate Education, Uttar Pradesh and rest 15 schools were affiliated to Central Board of Secondary Education. In the sample of the study senior secondary subaltern students i.e., girls, scheduled castes, scheduled tribes, and religious minority students were selected from different sections of the schools. In this way 500 subaltern students were included in the study. Among 500 subaltern students there were 387 girls, 89 scheduled caste, and 14 scheduled tribe's and 69 religious minority students.

Tools

Two self made data gathering instruments i.e., Experiences of Discrimination Scale and Assumptions of Equality Scale were constructed. The experiences of discrimination scale had 29 items covering all type of curricular and co-curricular experiences adolescents have within the school. The Assumptions of equality scale consisted of 25 items in multidimensional perspective. The four dimensions of the scale were Free and Equal Communication, Provision for Special Measures to Society, Participation in Decision Making and Equal Approach to all Students. The items were kept taking several teaching learning aspects within and outside classroom. The reliability of the tool was established through split-half and test-retest method. In case of 'Assumption of equality scale' test retest reliability was 0.79 whereas split half reliability was 0.87; further, for 'Experiences of Discrimination Scale' it was 0.77 and 0.81 respectively. The content validity of the tool was established by the experts of education, sociology and psychology. In order to establish the internal consistency of the tool Cronbach Alpha was also calculated which was found to be 0.87 for 'Assumption of Equality Scale' and 0.79 for 'Experiences of Discrimination Scale'.

Results and Discussion

As per the objectives of the study statistical analysis was done and hypotheses were tested. Findings are presented below according to sequence of objectives.

Status of experiences of discrimination among girls, religious minorities, Scheduled Castes and Scheduled Tribes Students.

The mean score for the experiences of discrimination of girls was 37.11. A mean higher than 30 suggests that the adolescents experienced discrimination above average. Thus, it was found that girls experienced discrimination at above average level in their schools. Similarly, the mean score for the sample of religious minority (34.37) was also at the same level. The mean score for the sample of SC adolescents was 26.98 which showed that SC adolescents experienced low level of discrimination in their schools. The mean score for the sample of ST adolescents was 20 which showed that ST Adolescents experienced discrimination at low level in their schools. The mean of girls was highest among all the subaltern groups.

Table 1

	Average of Subaltern Classes	Girls	Religious Minorities	Scheduled Castes	Scheduled Tribes
Mean	33.86	37.11	34.37	26.98	20.14
Median	36	39	37	27	22
Mode	40	40	37	10	6
SD	1.51	1.38	1.55	1.44	1.34
Maximum	81	81	57	51	38
Minimum	4	5	8	4	6
Range	77	76	49	47	32

Perception of Assumptions of Equality

Table 2 and Figure 1 reveal that perception of different subaltern groups towards the assumptions of equality in schools. In present study the assumptions of equality means how subaltern group perceive discrimination free environment in the school or if they

perceive equal and just behavioural practices in their schools. Mean values of subaltern girls, religious minority, SC and ST are 78.25, 94.93, 77.50 and 64.56 respectively; it means that these adolescents perceive equality in their school at average level. Among the subaltern groups ST students have perceived assumption of equality most negatively whereas religious minorities have perceived relatively in better way. The finding implies reform in school culture components so that all students may perceive a healthy environment within the school.

Table 2

Subaltern Groups Students	Perception (Mean Score) of Assumptions of Equality
Subaltern	81.25
Girls	78.25
Religious Minorities	94.93
Scheduled Castes	77.50
Scheduled Tribes	64.56
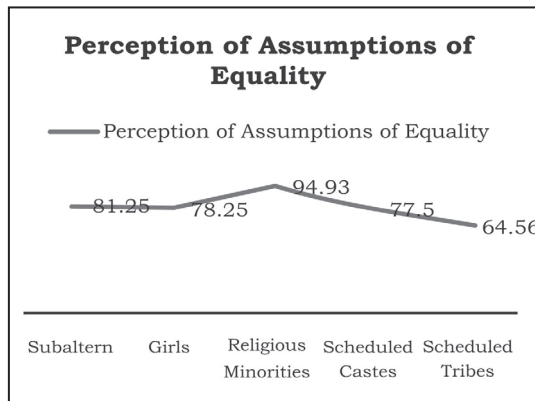
Figure 1: Average rating on each dimension of equality by subalterns

Table 3 reveals the rating of all the subaltern group adolescents on all the four dimensions measuring assumptions of equality in the school. All groups have rated the items positively but ST students have given poor ratings to Dimension 1 and 3. It suggests that there is some degree of fear among them to speak anything before

the authorities. Further, efforts on the part of teachers and other school personnel are also lacking to ensure their participation in decisions regarding students in the schools.

Table 3

Sample	Dimension-1 Free and Equal Communications	Dimension-2 Provision for Special Measures	Dimension-3 Participation in Decision Making	Dimension-4 Equal Approach to All Students
Girls	3.28	3.25	2.49	3.94
Religious Minorities	4.09	3.84	3.85	4.03
Scheduled Castes	3.42	3.21	2.6	3.44
Scheduled Tribes	1.84	3.21	1.42	4.21
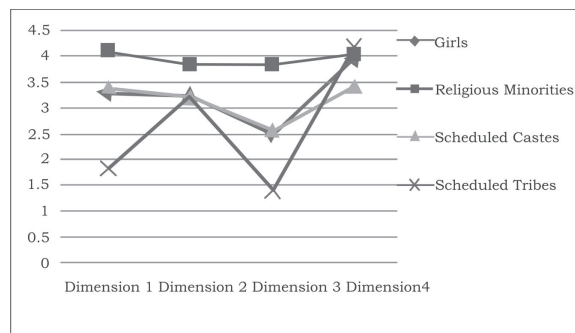
Figure 2: Dimension wise analysis regarding assumptions of equality dimension wise analysis of adolescent girls on assumptions of equality

Table 4 shows the pattern of rating (ranging from 1 to 5 where 1 is poor assumption of equality and 5 means ideal assumption of equality depicting discrimination free school environment) in per cent by girl students on each dimension of the tool. It reveals that a large part of the sample rated 1 to all items. Most of the girls have given good rating but on Dimension 3 the trend was opposite. Girls rated this dimension more negatively. This dimension was related with participation in decision making related to students' issues. It reveals that girl adolescents feel lack of participation in decision making process. However, the overall scenario depicts

that a substantial portion of adolescents girls have poor perception regarding assumptions of equality in the schools.

Table 4

Rating Score	Dimension-1 Free and Equal Communication	Dimension-2 Provision for Special Measures	Dimension-3 Participation in Decision Making	Dimension-4 Equal Approach to All Students
Rating 5	30.48%	30.48%	12.68%	32.68%
Rating 4	14.63%	18.53%	10.24%	21.21%
Rating 3	24.63%	14.39%	25.36%	23.65
Rating 2	10.73%	18.78%	16.82%	8.04%
Rating 1	18.55%	17.18%	34.87%	13.65%
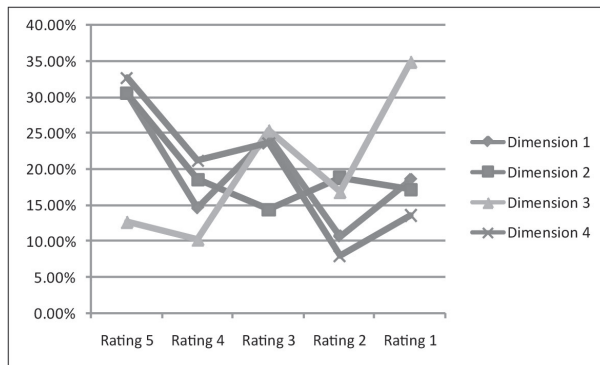
Figure 3: Dimension wise analysis of adolescent from religious minority on assumptions of equality

The Table 5 depicts that adolescents belonging to religious minority were more positive on all dimensions of assumptions of equality. Almost all agreed to an extent on dimension one as no students rated zero on any item of this dimension. This shows that religious minority does not feel any kind of communication gap within the school. The scenario among religious minority is particularly healthy that all dimensions have been rated at higher level by religious minority. Although, in context of participatory decision making, religious minority too feel that their participation in decision making is relatively less.

Table 5

Rating Score	Dimension-1 Free and Equal Communication	Dimension-2 Provision for Special Measures	Dimension-3 Participation in Decision Making	Dimension-4 Equal Approach to All Students
Rating 5	50.76%	53.30%	32.30%	53.30%
Rating 4	16.92%	20.00%	6.15%	12.30%
Rating 3	23.67%	7.69%	21.53%	27.69%
Rating 2	9.23%	0.00%	27.69%	1.53%
Rating 1	0.00%	20.00%	12.30%	6.15%
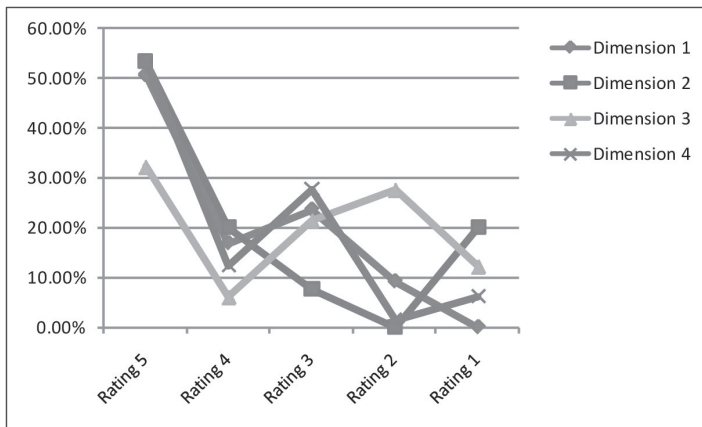
Figure 4: Dimension wise analysis of adolescents from scheduled castes on assumptions of equality

Table 6 indicates that responses of SC adolescents towards assumptions of equality were distributed evenly across all dimensions. As it has been observed in reference of Uttar Pradesh that SC students are availing good number of Government initiatives for education and employment therefore their assumptions are relatively higher. In case of SC adolescents too, the dimension of participatory decision making was rated negatively in comparison to other dimensions of the scale.

Table 6

Rating Score	Dimension-1 Free and Equal Communication	Dimension-2 Provision for Special Measures	Dimension-3 Participation in Decision Making	Dimension-4 Equal Approach to All Students
Rating 5	30.20%	32.29%	20.83%	30.20%
Rating 4	15.62%	12.50%	7.29%	14.58%
Rating 3	30.20%	12.50%	23.95%	23.95%
Rating 2	7.29%	20.85%	17.70%	9.37%
Rating 1	16.66%	21.87%	30.20%	2.87%
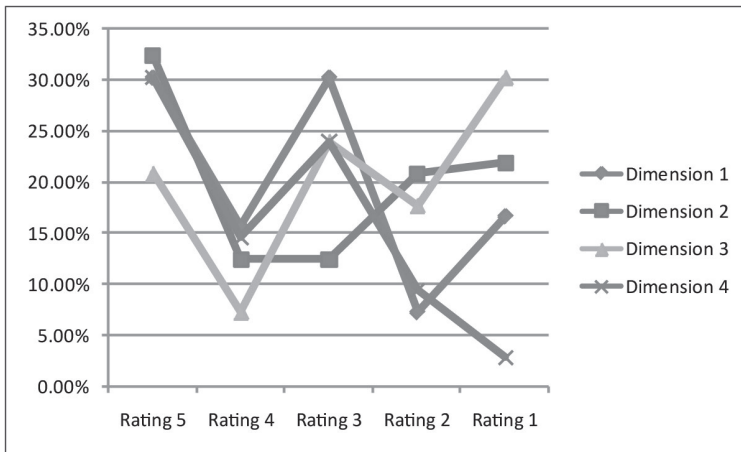
Figure 5: Dimension wise analysis of adolescents from scheduled tribes on assumptions of equality

Table 7 reveals that, out of fourteen ST students, eight students gave 1 (poor) rating to dimension one and 11 out of fourteen students assigned rating 1 (poor) to dimension three. It indicates that ST adolescents are most hesitant among the other subaltern groups that they feel they cannot speak up before any authority in the school. The response of the ST adolescents also indicates that they have assumption that authority doesn't make effort to ensure their participation in any decision related to them.

Table 7

Rating Score	Dimension-1 Free and Equal Communication	Dimension-2 Provision for Special Measures	Dimension-3 Participation in Decision Making	Dimension-4 Equal Approach to All Students
Rating 5	0.00%	21.42%	0.00%	57.48%
Rating 4	21.42%	0.00%	0.00%	21.42%
Rating 3	0.00%	57.48%	21.42%	0.00%
Rating 2	21.42%	21.42%	0.00%	21.42%
Rating 1	57.48%	0.00%	78.57%	0.00%
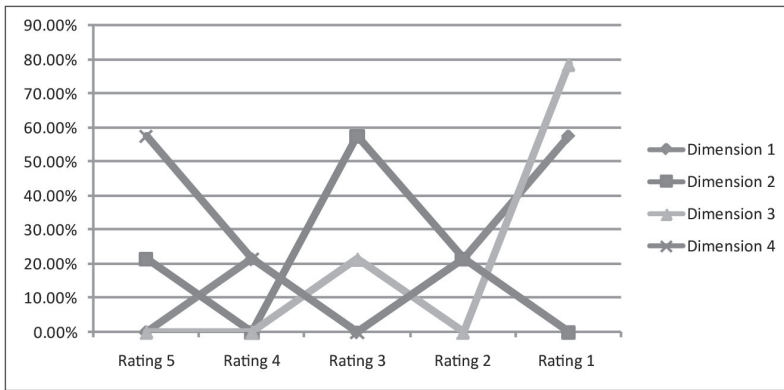
Figure 6: Subaltern adolescents experiences of discrimination in relation to the assumptions of equality in the school

At the next step of data analysis the correlation coefficients of experiences of discrimination among adolescents with their assumptions of equality was calculated. It was found that all the correlations were negative and in case of religious minority (–0.248), Scheduled castes (–0.433) and scheduled tribes (–0.539) the correlation coefficients were significant at 0.05 level. It was also observed that there was no significant relationship between experiences of discrimination of girls with the assumptions of equality in the school (–0.016). On the other hand, religious minorities, scheduled castes and scheduled tribes experiences of discrimination were significant and negatively related with the assumptions of equality in the school. The findings suggest that the assumption of equality among subaltern groups is inversely related with their experiences of discrimination. It implies that to strengthen the notion of equality in the school there is need to

minimise experiences of discrimination in adolescents particularly the subalterns.

Impact of Stream on Assumptions of Equality in the School

Analysis of variance in Perception of Assumptions of Equality According to Stream of Study

The analysis of variance revealed that the F value obtained was 0.43 which was not significant at 0.05 level. It indicates that there was no significant difference between different stream students' perception of assumptions of equality. Since, the focus of the study is experiences of discrimination within the school and their assumptions of equality which is universal with every student. According to stream experiences of may be of different nature but all students do feel discrimination in various school activities, hence, nullifying the effect of stream of study.

Impact of Medium of Instruction on Assumptions of Equality in the School

Difference in Perception of Assumptions of Equality According to Medium of Instruction

The data analysis revealed that the means scores of Hindi medium (80) and English medium (89.37) do not differ signititfcantly (t value–0.00) at 0.05 level of significance. It means that both Hindi and English medium school perceive assumptions of equality in similar manner. It may be due to the reason that assumptions which are the core element of culture, is grasped from the society. As all the schools were situated in the same social setting similar assumptions of the school is possible. In addition, the rationale regarding stream of study also applies in case of effect of medium of instruction.

Impact of Type of School (i.e., Co. Ed., Boys, Girls School) on Assumptions of Equality in the School

Table 8

Difference in perception of assumptions of equality in the school according to independent variables (i.e., Type of school, school board)

School	N	M	SD	t-values
Co. Ed.	150	84.81	25.20	2.37
Boys	277	98.06	21.82	

Co.Ed.	150	84.81	25.20	0.001
Girls	73	75.68	26.34	
Boys	277	98.06	21.82	5.63
Girls	73	75.68	26.34	
UP	405	79.75	26.95	0.00
CBSE	95	91.87	23.80	
Government	369	82.81	26.33	0.00
Private	131	78.43	27.96	

Table 8 indicates t-values among students from co.ed., boys and girls schools. It shows that there is a significant impact of type of school on the perception of equality in the schools. Students from boys' school perceived assumptions more positively as compared to the students from co.ed. and girls' school. Students from girls' school were most negative towards their assumptions of equality. It is quite evident that girls do face different gender stereotyped behaviour in their school having more experiences of discrimination as compared to boys. The social setting which is again rooted in gender segregation of girls must have added effect among girls for their poor perception of equality.

Further, the t-value obtained to study effect of school board is not significant at 0.05 level. It means students of both the boards perceived their school assumptions in the same manner. The curricular and co-curricular activities organised in the school are quite similar following uniform teaching learning pattern. They may differ in extent and nature according to board but behavioural exposure to students is quite in similar scale. This must have contributed towards absence of effect of school administrative board.

Lastly, the t-value (0.00) obtained for difference between private and government was also found not significant at 0.05 level. It means that both government and private school adolescents perceive assumptions of equality in similar manner. This result may be due to the fact that schools are the replicas of society and the core assumptions of society gradually creep into the schools and hence, it is same in schools irrespective of the fact that it is owned by public or private management.

Conclusion

The study suggests that all the subaltern sections of the students are experiencing low to above average level of experiences of

discrimination. Although, discrimination in smallest amount is also bad and unacceptable, still the health of the schools of the sample considered to be of average level. The study also indicates that there is a negative significant relationship among the assumptions of equality in the schools with the experiences of discrimination of subaltern groups. The findings call for sensitisation of all educational stakeholders to think upon reforming school environment. There is need to bring awareness about the issue of equality particularly among teachers that they should extend just and equal treatment towards all students. It was also found that most of the independent variables (i.e., subject stream, types of school, medium of instruction) in school taken in the study do not have any impact on the perception of assumptions of equality. Although, a little difference in the perception of assumption was seen in co-ed., boys and girls school. It indicates that the perception of assumption of equality is similar in all the schools, which is moderately positive. However, it also indicates about the universality of the phenomena that it is prevalent in totality unaffected by any variable, thus, demands early remediation.

It can be concluded from the study that schools are working on the assumptions of equality but still there is much work needed to bring more changes in the assumptions so that adolescents particularly of subaltern class may feel positive in the school developing a healthy social and just outlook.

Suggestions

Based on the findings of the study following suggestions are given for bringing refinement in school education policies and practices at larger level:

- Experiences of discrimination can have detrimental effect on adolescents physical and psychological well being. Individuals nurtured under such environment may develop a negative and unhealthy attitude towards society. Therefore, there is need to strengthen school culture to orient it towards practice of discrimination free activities and policies.

- In present study, experiences of discrimination are found to be significantly related to the assumptions of equality. The findings have deep implication for school personnel. Development of an individual; with healthy mind and heart is the key for ensuring adolescents positive social outlook. If students in the school

would feel discrimination, it is not good for our democratic social fabric. Hence, urgent remediation is needed to provide healthy experience to our prospective citizens so that the age old democratic way of living may be strengthened.

- As there is similar perception of assumptions of equality according to all independent variable. The finding suggests the need of orientation of all the schools towards development of discrimination free school culture. The Right to Free and Compulsory Elementary Education Act (2009) also envisaged schools to remain equal in their teaching learning environment. Hence, there is need to launch rigorous in service programs for all school personnel to aware them about notion of equality in the school.

- Among all, the subaltern groups girls were found to have most experiences of discrimination and their assumptions of equality in schools were also found poorest. There have been constant policy and practice initiatives to invigorate girl's education in the country but somehow, there is still need to change the gendered mindset of the people. Such reasons not only provide negative experience to girls but it also becomes a cause of their drop out. Therefore, there is need of special orientation of schools towards discrimination free practices against girls.

References

Aronowitz, S and H. Giroux. 1985. *Education under Siege*. Massachusetts: Bergin and Garvey.

Bodnar, B. A. B. 1993. A Study of Basic Cultural Assumptions of a School. Retrieved from http://www.saskschoolboards.ca/research/school_improvement/93-04.htm on February 2016

Felice, L. G. 1981. Black Student Dropout Behavior: Disengagement from School Rejection and Racial Discrimination. *Journal of Negro Education*. 50 (4), 415-24.

Ghosh, P. 2014. Indian Muslims Need Greater Access To Education To Avoid Poverty And Social Exclusion. International business times, retrieved from http://www.ibtimes.com/indian-muslims-need-greater-access-education-avoid-poverty-social-exclusion-1561601# on 2 February 2016

Hanna, R. and L. Linden. 2009. *Measuring Discrimination in Education*. Cambridge: National Bureau of Economic Research.

Hatzenbuehler M.L., W.R. Corbin, K. Fromme. 2010. Discrimination and Alcohol-related Problems Among College Students: A Prospective

Examination of Mediating Effects. Drug Alcohol Depend. 2011 Jun 1;115(3): pp 213-20.

Manjula, P. 2009. Is the Present Education a Tool for Liberation of Dalit Women? Retrieved from http://navsarjan.org/Documents/Gender_ and_Education.pdf on February 2016

McCabe, J. 2009. Psychological distress in Patients Diagnosed with Atrial Fibrillation: The State of the Science. Cardiovasc Nurs. 2010 Jan-Feb;25(1):40-51

Medina, S. P., V. Lewis, and Susmita Pati. 2010. The Relationship between Parental Educational Attainment and Perceived Racial Discrimination among African-American Female Adolescents. *Penn McNair Research Journal.* vol. 2 (1), pp 1-7.

Mossakowski, Krysia, N. 2003. Coping with Perceived Discrimination: Does Ethnic Identity Protect Mental Health? *Journal of Health and Social Behavior.* Special Issue: Race, Ethnicity, and Mental Health (Sep., 2003). pp. 318-331

Paradies, Y. 2006. A Systematic Review of Empirical Research on Self-Reported Racism and Health. *International Journal of Eidemiology.* 35, pp 888-901

Sellors, R. M., N. C. Linder, P. P. Martin, and R. L. Lewis. 2006. Racial Identity Matters. The Relationship Between Racial Discrimination and Psychological Functioning in African American Adolescents. *Journal of Research on Adolescents.* vol.16 (2), pp.187-216.

Stone, Susan, Meekyung Han. 2005. Perceived School Environments, Perceived Discrimination, and School Performance among Children of Mexican Immigrants. Children and Youth Services Review, Vol 27(1), Jan 2005, pp 51-66.

Williams, D. R., and A.S. Mohammed. 2009. Discrimination and racial disparities in health: Evidence and needed research. *Journal of Behavioral Medicine.* 32(1), pp 20-47.

Williams, D.R., H.W. Neighbors, and J.S. Jackson. 2003. Racial/ethnic Discrimination and Health: Findings from Community Studies. *American Journal of Public Health.* 93(2), pp 200-208

Factors Affecting Scientific Attitude of IX Grade Students

K.S. Misra* and Stuti Srivastava**

Abstract

The present study examined the scientific attitude of IX grade students in relation to their scientific interest, science achievement, intelligence and personality. Sample comprised of 600 students of IX grade students studying in UP board schools in Allahabad city. Scientific attitude questionnaire, scientific interest inventory, general mental ability test, neo-personality questionnaire by K.S. Misra and self-constructed science achievement test (form A) were used to collect data. It was found that scientific attitude in intent as well in action is positively related to scientific interest. Scientific attitude in action is positively related to achievement in science. Scientific attitude in intent and action is not related to intelligence. Scientific attitude in intent and action is positively related to four personality traits namely—planned, inquisitive, motivated and adaptable. Scientific attitude in intent is positively related to two traits namely—analytical and tolerant and negatively related to one trait–pessimist but scientific attitude in action is not related to these personality traits. Scientific attitude in action is positively related to three traits namely-self-sufficient, sociable, independent and divergent but scientific attitude in intent is not related to these traits among students. 'Scientific interest' emerged as the best predictor of scientific attitude in intent as well as action. 'Science achievement' contributes to the prediction of scientific attitude in action. Three personality traits namely; pessimist, tolerant and analytical emerged as the predictors of scientific attitude in intent while planned and alienated traits contributed to the prediction of scientific attitude in action.

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Introduction

Development of scientific attitude is an important goal of science education. According to Klopfer (1971) scientific attitude refers to the 'desirable attitudinal outcomes' which are the professional attributes of the scientist that are displayed in conducting scientific inquiries. Schibeci (1984) suggests that 'scientific attitudes' can be regarded as norms which govern scholarly pursuits. These attitudes represent predispositions appropriate for solving problems in everyday life as well. A person with scientific attitude has actions and thoughts based on his knowledge, suspends reaching conclusions and forming judgments when reliable and objective information is lacking, or until such time as he has the opportunity to study such information (Smith, Krouse and Atkinson, 1967). Scientific attitude has two components—intent and action (Misra, 2008). The intent component represents the students' tendency to show approval or disapproval of behaviours which define a scientific attitude. This is indicated by his endorsement of specific sources of action in certain situations relevant to the scientific attitudes. The action component represents behaviour the student actually demonstrates in the science classroom which defines an attitude.

Research (Gautam, 2000; Pandey, 2006) has shown a positive relationship between scientific attitude and scientific interest. However, Moore (1930) found that there is positive relationship between scientific attitude (in facts) and scientific interest but there is no relationship between scientific attitude (in judgement) and scientific interest. Students with high level scientific interest exhibit higher scientific attitude than their counterparts with low scientific interest (Gautam, 2000).

There exists a positive relationship between scientific attitude and achievement in science (Bhattacharya, 1997; Bileh and Zakhariades, 1975; Ksheersagar and Kavyakishore, 2013; Moore, 1930; Rao, 1990). However, some researchers found no relationship between scientific attitude and achievement in science (Baumel and Berger, 1965; Dhatrak and Wanjari, 2011 and Hoff, 1936). Scientific attitude is found to be the predictor of science achievement (Mukhopadhyay, 2013). Scientific attitude is positively related to intelligence (Fraser, 1977; Kumari, 2000; Shukla, 2010). Scientific attitude-intent is positively related to intelligence but scientific attitude-action is not related to intelligence (Shukla, 2010). Personality traits Q_1 (submissiveness versus dominance) and E (conservatism versus radicalism) were found to be positively

associated with scientific attitude (Rao, 1990). It was found that overall scientific attitude is positively related to personality trait G (expedient versus conscientious); scientific attitude in intent is positively related to personality trait B (more intelligent versus less intelligent); scientific attitude in action is positively related to personality traits G (expedient versus conscientious) and Q4 (tensed versus relaxed) (Pandey, 2006).

The review of the research shows that there is no conclusive evidence about the relationship between scientific attitude and scientific interest. There is no conclusive evidence about the relationship between scientific attitude and achievement in science. Few studies have revealed relationship between overall scientific attitude and achievement in science. Relationship between two components of scientific attitude namely intent and action and achievement in science is yet to be established. Positive relationship between scientific attitude and personality trait like, expedient versus conscientious, more intelligent versus less intelligent, expedient versus conscientious and tensed versus relaxed has been found. Relationship between two components of scientific attitude namely intent and action of scientific attitude and personality traits is yet to be established. The extent to which scientific interest, achievement in science, intelligence and personality contribute to the prediction of scientific attitude is yet to be explored. Relationship of two components of scientific attitude with scientific interest, achievement in science, intelligence and personality needs further exploration. The present study is a humble attempt to study the scientific attitude among students in relation to their scientific interest, achievement in science, intelligence and personality.

Objectives

The objectives of the study are as follows:
- To study the relationship between IX grade students' scientific attitude and scientific   interest.
- To study the relationship between IX grade students' scientific attitude and achievement in science.
- To study the relationship between IX grade students' scientific attitude and intelligence.
- To study the relationship between IX grade students' scientific attitude and personality.

- To find out the extent to which scientific interest, achievement in science, intelligence and personality traits contribute to prediction of scientific attitude.

Method

Sample

The population of this study comprises of male and female students studying in Class IX in UP Board schools of Allahabad city. To begin with, the investigator prepared a list of UP Board schools in Allahabad city. Ten schools (five boys and five girls) were randomly selected from different regions of Allahabad city. The researcher then randomly selected two sections of Class IX from each school. 30 students studying in each section were randomly selected for inclusion in the sample. Thus, multistage random sampling was adopted to select the sample for the present study. It consisted of 600 students.

Measures

Scientific attitude of IX grade students was measured by using 'Scientific Attitude Questionnaire' constructed by K.S. Misra (2008). It consisted of 112 items (84 items for measuring intent component and 28 items for measuring action component of scientific attitude). Split–half reliability was estimated to be 0.82 for IX grade students. Validity was established by calculating coefficient of correlation between total and action ($r = 0.96$) and between total and intent ($r = 0.79$) parts of scientific attitude.

'Scientific Interest Inventory' constructed by K.S. Misra (2014) was used for measuring scientific interest of students. It contained 49 (five point scale items) items. A score of 1, 2, 3, 4 and 5 for 'very high, high, average, low and very low' responses is given. Test- retest reliability of 'scientific interest inventory' was found to be 0.65 (50 students) and criterion-related validity was found to be 0.84 Kumar (2003).

'Science Achievement Test (Form A)' developed by Srivastava and Misra (2015) was used to measure science achievement of students. It consisted of 50 multiple choice questions which covered all the six chapters of the syllabus prescribed by Madhyamik Shiksha Board, U.P. The reliability for SAT was calculated by split-half method and it was found to be 0.67 (N=200) and parallel form reliability was found to be 0.59 (N=50). Content and criterion related validity were established.

'Verbal Test of General Mental Ability' developed by K.S. Misra (2007) was used for measuring intelligence of students. The test measures verbal intelligence of students studying in Class X, XI and XII. It consisted of multiple choice objective type items belonging to five subtests namely-code transformation test, classification test, numerical reasoning test, analogies test and verbal facility test. A score of 1 is awarded for every correct answer. The value of split half reliability was found to be 0.78 (N= 60) and predictive validity was 0.54 (N= 60) determined against achievement (Misra, 2007). Stanine score norms have been calculated.

Twenty two personality traits namely-planned, crooked, self-sufficient, reticent, egoist, sociable, disturbed, analytical, alienated, hesitant, independent, group dependent, perseverant, rest-loving, dominant, inquisitive, motivated, pessimist, anxious, divergent, adaptable and tolerant were measured using 'Neo-Personality Questionnaire' by K.S. Misra (2012). All the items use a five point scale response format. A score of 5, 4, 3, 2 and 1 awarded to responses namely; 'nearly always, mostly, many times, sometimes, nearly never' respectively. Scores on each of the four questions belonging to each personality trait were added together to find a score for each dimension of the personality trait. Split half reliability calculated for various personality traits ranged between 0.26 to 0.78 (0.69 for planned, 0.78 for crooked, 0.48 for self-sufficient, 0.37 for reticent, 0.39 for egoist, 0.58 for sociable, 0.26 for disturbed, 0.53 for analytical, 0.51 for alienated, 0.66 for hesitant, 0.47 for independent, 0.63 for group-dependent, 0.64 for perseverant, 0.64 for rest-loving, 0.77 for dominant, 0.60 for inquisitive, 0.49 for motivated, 0.72 for pessimist, 0.52 for anxious, 0.65 for divergent, 0.27 for adaptable and 0.64 for tolerant). Factorial validity was determined using varimax rotated factor analysis. Percentile norms have been calculated.

Statistical Analysis

Stepwise multiple regression analysis was used to find out the extent to which scientific interest, achievement in science, intelligence and personality contribute to the prediction of variance in scientific attitude. Product moment coefficients of correlation were computed to find out the relationship between two components of scientific attitude, on the one hand and scientific interest, achievement in science, intelligence and each of twenty-two personality traits, on the other.

Results

Analysis shows that scientific interest was positively correlated with scientific attitude-intent (r=0.17, P<0.01) and scientific attitude-action (r=0.18, P<0.01). Further, achievement in science was positively correlated with scientific attitude-action (r=0.13, P<0.01) but not with scientific attitude-intent (r=0.07, P>0.05). No significant relationship was observed between intelligence and scientific attitude-intent (r=0.05, P<0.05) and scientific attitude-action (r=0.09, P<0.05).

Table 1 shows that out of 22 values of correlation between scientific attitude in intent and various personality traits, two values are significant at 0.05 level and five values are significant at 0.01 level. For scientific attitude in action, seven values of correlation are significant at 0.01 level and one value of correlation is significant at 0.05 level. It means that scientific attitude in intent and action is positively related to planned, inquisitive, motivated and adaptable personality traits. Scientific attitude in intent is positively related to analytical and tolerant personality traits but it is negatively related to pessimist trait. Scientific attitude in action is not related to these personality traits. Scientific attitude in action is positively related to self-sufficient, sociable, independent and divergent traits but scientific attitude in intent is not related to these traits among students. Thirteen values of correlation for thirteen personality traits and both the components of scientific attitude are not significant at 0.05 level. They point to existence of no relationship between scientific attitude in intent and action on one hand and thirteen personality traits namely; crooked, reticent, egoist, disturbed, alienated, group-dependent, hesitant, perseverant, rest-loving, dominant and anxious.

Table 1

Relationship between intent and action components of scientific attitude and personality traits among students

S. No.	Personality Traits	Scientific Attitude-Intent	Scientific Attitude-Action
1.	Planned	0.03**	0.06**
2.	Crooked	−0.05	−0.07
3.	Self-sufficient	0.02	0.09*
4.	Reticent	0.06	0.06
5.	Egoist	−0.07	−0.01

6.	Sociable	0.07	0.02**
7.	Disturbed	−0.06	−0.03
8.	Analytical	0.09*	0.00
9.	Alienated	0.01	0.07
10.	Hesitant	−0.02	−0.01
11.	Independent	0.04	0.11**
12.	Group dependent	−0.05	−0.01
13.	Perseverant	0.02	0.07
14.	Rest-loving	0.01	0.03
15.	Dominant	−0.03	0.02
16.	Inquisitive	0.12**	0.13**
17.	Motivated	0.13**	0.13**
18.	Pessimist	−0.11**	−0.04
19.	Anxious	−0.03	−0.01
20.	Divergent	0.04	0.12**
21.	Adaptable	0.09*	0.12**
22.	Tolerant	0.11**	0.06

* $P<0.05$; **$P<0.01$

Table 2 shows that scientific interest and three personality traits namely pessimist, tolerant, analytical emerged are the best predictors of scientific attitude-intent. R square value is 0.06. It means that these variables explain 6.0% of the variance in scientific attitude-intent.

Table 2

Results of linear step-wise regression analysis for predicting scientific attitude in intent for students

S. No.	Independent Variables	Beta-Coefficient	Constant	F-ratio	R square
1.	Scientific interest	0.08	39.46	9.85	0.06
2.	Pessimist	−0.63			
3.	Tolerant	0.49			
4.	Analytical	0.26			

Table 3 shows that scientific interest, personality traits planned and alienated and science achievement emerged as the best predictors of scientific attitude-action. R square value is 0.06. It means that these variables explain 6.0% of the variance in scientific attitude-action.

Table 3

Results of linear step-wise regression analysis for predicting scientific attitude in action for students

S. No.	Independent Variables	Beta- Coefficient	Constant	F- ratio	R square
1.	Scientific interest	0.02	10.15	9.96	0.06
2.	Planned	0.17			
3.	Alienated	0.17			
4.	Science Achievement	0.06			

Discussion

The findings of the study revealed that scientific interest is positively related to scientific attitude in intent as well as action among students. It also emerged as a predictor of scientific attitude. It seems that learning opportunities provided in science classroom encourage the use of scientific interest to develop scientific attitude in intent as well action. These findings are consistent to the findings of Gautam (2000) and Pandey (2006) who found that there exist a positive relationship between scientific interest and scientific attitude. However, Moore (1930) found contradictory results that there is positive relationship between scientific attitude (in facts) and scientific interest but there is no relationship between scientific attitude (in judgement) and scientific interest.

A number of studies (Bhattacharya, 1997; Bileh and Zakhariades, 1975; Kaushik, 1998; Ksheersagar and Kavyakishore, 2013; Moore, 1930; Mukhopadhyay, 2013; Rao, 1990; Sharma, 2007; Yadav, 2010) have shown a positive relationship between scientific attitude and achievement in science. However, in the present study it has been found that scientific attitude in action is positively related to achievement in science but scientific attitude in intent is not related to achievement in science. This shows differential impact of achievement in science on the intent and action components of scientific attitude. Nay and Crocker (1971) have suggested that students should also show the evidence

that they accept, prefer and value these attributes, not only they demonstrate these attitudes to satisfy the teacher or to perform better in science. It also contributes to the prediction of science achievement in students.

It has been found in the present study that there is no relationship between scientific attitude in intent/action and intelligence. It suggests that intelligence may not influence scientific attitude–intent and action. Development of scientific attitudes is desirable personal attribute for all to have, no matter what their mental ability is (Gauld, 1976). However, contrary are the findings that scientific attitude is positively related to intelligence (Fraser, 1977; Kumari, 2000; Shukla, 2010). 'Motivated' personality trait is positively related to scientific attitude in intent as well as action. It might be that due to this high motivation, students are more encouraged to learn science to develop their scientific attitude in intent as well as action.

Personality trait 'planned' is positively related to scientific attitude in intent as well as action. It also emerged as a predictor of scientific attitude in action. This indicates that students' disposition to work in an organised and systematic manner might lead to the development of scientific attitude in intent and action among students. There is positive relationship between 'analytical' trait and scientific attitude in intent and action. This indicates that increase in the tendency to examine phenomenon, problems, ideas or behaviour to know about them can promote scientific attitude in intentions as well as actions. It also emerged as a predictor of scientific attitude in intent. 'Inquisitive' personality trait is related to scientific attitude in intent and action among students. It means that inquisitiveness is crucial for promoting intent and action components of scientific attitude among students. 'Adaptability' is positively related to scientific attitude in intent as well as action among students. This means that students' ability to make necessary intrapersonal and interpersonal adjustments increases tendency to act like scientists while confronting the new situations. This finding draws indirect support from the finding that emotional intelligence is positively related to scientific attitude (Jindal, 2014). Trait 'adaptability' seems to be related to emotional intelligence. An emotionally intelligent person usually has better interpersonal and intrapersonal adjustment. Tendency to be 'pessimist' can negatively influence scientific attitude in intent. 'Pessimist' and 'tolerant' are not related to scientific attitude in action but they

emerged as predictors of scientific attitude in action. Self-sufficient, sociable, independent and divergent personality traits positively influence scientific attitude in action but they do not influence scientific attitude in intent among students. 'Alienated' emerged as the predictor of scientific attitude in action. Personality traits crooked, reticent, egoist, disturbed, alienated, hesitant, dominant, group-dependent, perseverant, rest-loving and anxious are not related to scientific attitude in intent as well as action.

References

Baumel, H. B., and J. J. Berger. 1965. An Attempt to Measure Scientific Attitudes. *Science Education,* 49, 267-269.

Bhattachraya, G. C. 1997. Scientific Attitude and its Relationship with Academic Achievement at Higher Secondary Level. *School Science*, 3, 32-40.

Bileh, Y., and G. Zakhariades. 1975. The Development and Application of a Scale for Measuring Scientific Attitudes. *Science Education*, 59 (2), 155-165.

Dhatrak, G., and S. Wanjari. 2011. A Correlational Study of Scientific Attitude, Creativity and Scholastic Achievement of Secondary School Students. *Indian Stream Research Journal*. 1 (10). www.isrj.net/publish Articles/298.aspx

Fraser, B. J. 1977. Selection and Validation of Attitude Scales for Curriculum Evaluation. *Science Education*, 61 (3), 317-329.

Gauld, C. F. 1976. Scientific Attitudes and Personal Development. *Australian Science Teachers' Journal*, 22, 73-82.

Gautam, V. 2000. *A Study of Scientific Attitude in Relation to Interest in Science*. Unpublished M. Ed. Dissertation, University of Allahabad.

Hoff, A. G. 1936. A Test of Scientific Attitude. *School Science and Mathematics*, 36, 763-770.

Jindal, M. 2014. Emotional Intelligence and Classroom Environment in Relation to Scientific Attitude. *Excellence International Journal of Education and Research*, 2(1), 31-41.

Kaushik, N. K. 1998. *The Long Term Effect of Advance Organisers upon Achievement in Biology in Relation to Reading Ability, Intelligence and Scientific Attitude*. Unpublished Doctoral Thesis, Devi Ahilya Vishwavidyalaya, Indore.

Klopfer, L. E. 1971. Evaluation of Learning in Science. In B. S. Bloom, J. T. Hastings, and G. F. Madaus (Eds.). *Handbook on summative and formative evaluation of student learning*. New York: McGraw-Hill. pp. 561-641.

Ksheerasagar, S. and P. B. Kavyakishore. 2013. Achievement in Science of Secondary School Students in Relation to Scientific Attitude. *International Journal of Education and Psychological Research, 2 (2)*, 61-65.

Kumar, V. 2003. *A Study of Scientific Creativity among Students in Relation to their Interest in Science.* Unpublished M. Ed. Dissertation, *University of Allahabad.* Allahabad.

Kumari, A. 2000. *A Study of Impact of Computer Education on the Scientific Attitude of Students.* Unpublished Doctoral Dissertation, University of Lucknow.

Misra, K.S. 2014. Scientific Interest inventory. *National Psychological Corporation, Agra.*

Misra, K.S. 2012. Neo Personality Questionnaire. *Sangyanalaya, Kanpur.*

Misra, K.S. 2007. Verbal Test of General Mental Ability. *Association for Educational Studies, Allahabad.*

Misra, K.S. 2008. Construction and Standardization of Scientific Attitude Questionnaire. *Journal of Educational Studies*, 4(1), 1-5.

Moore, E.B. 1930. A Study of Scientific Attitudes as Related to Factual Knowledge. *The School Review*, *38 (5)*, 379-386.

Mukhopadhyay, R. 2013. Whether Aptitude in Physics, Scientific Attitude, and Deep Approach to Study Explain Achievement in Physics Significantly – An investigation. *International Journal of Humanities and Social Science Invention, 2(1*), 57-63.

Nay, M.A., and R.K. Crocker. 1971. Science Teaching and the Affective Attributes of Scientists. *Science Education, 54*, 59-67.

Pandey, A. 2006. *Effect of Science Interest, Learning Environment and Personality on Scientific Attitude.* Unpublished Doctoral Thesis. Banaras Hindu University.

Rao, D.B. 1990. A Comparative Study of Scientific Attitude, Scientific Aptitude and Achievement in Biology at Secondary School Level. In NCERT (1997) *Fifth Survey of Research in Education.* New Delhi: N.C.E.R.T.

Schibeci, R. A. 1984. Attitudes to Science: An Update. *Studies in Science Education*, 11, 26-59.

Sharma, I. 2007. Problem-solving Ability as Determinants of Academic Achievement of Higher Secondary Students. *E-journal of All India Association for Educational Research.* 19(1). 7.

Srivastava, S., and K. S. Misra. 2015. *Manual for Science Achievement test.* National Psychological Corporation, Agra.

Shukla, S. 2010. A Study of Scientific Attitude in Relation to Intelligence Among Secondary Students. *Research and Studies.* 39-41.

Smith, E. W., Krouse, Jr. S, W and Atkinson, M. K. 1967. *The Educators Encyclopedia.* Englewood Cliffs, New Jersey: Prentice Hall.

Yadav, A. K. 2010. Relationship Between Scientific Attitude and Academic Achievement of Adolescents Studying in Class XI. *Emerging Trends in Education, 1 (1*), 56-59.

Psychological Engagement of Students Enrolled in Schools through 'Age-Appropriate-Grade' Provision of RTE Act 2009: A Case of Deprived Urban Children in Uttarakhand

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Abstract

RTE Act 2009 has stated that children above six years who could not complete elementary education shall be admitted in 'class appropriate to his or her age.' To ensure that all such children complete elementary education it is necessary to ensure they become intrinsically motivated and feel engaged with their school and with learning, besides making systemic provision of access and bridging the learning gap. The sample of the present study included such students from Class III – VIII of government schools (urban and semi-urban areas) of two districts in Uttarakhand. Results throw light on perception of students towards their schools, teachers, peers as well as themselves, their psychological needs, factors which facilitate and factors which impede their psychological engagement with school. Understanding of the above may help schools to create a conducive environment for active involvement of these students with school activities and thus facilitate their completion of elementary education.

Introduction

The paradigm shift in recent years has encouraged students in school/classroom to be perceived as a dynamic participant in the construction of their knowledge, thereby making learning environment conducive and adequately enabling for them. Such an environment affords opportunities for children to ask questions, relate what they are learning in school to things happening

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outside, etc. With 'Education for All' as the vision and mission where 'all' children have access to and opportunity for completion of elementary education, the importance of making the learning environment adequately engaging has gained further prominence. However, though statistics shows that, since *Sarva Shiksha Abhiyan* (SSA) was initiated, there has been a rise in the enrolment rates, but the same may not be said for the rate of retention and completion of elementary education. The reasons for this are many. The students' demotivation and their disengagement with school is probably one of the reasons for this.

The implementation of the *Right of Children to Free and Compulsory Education Act 2009* (RTE 2009) has further given impetus to ensuring 'Education for All'. The Act stated that in such cases where a child above six years of age was 'never enrolled' or could not complete her/his elementary education, then she/he shall be admitted in a 'class appropriate to his or her age' (RTE 2009: Section 4 of Chapter II) and that such a child has the right to receive special training to be at par with his/her classmates. This provision of the Act, on the one hand, ensures that every child not only has access to but also completes elementary education and, on the other hand, challenges the schools to become 'the enabling and conducive environment' which motivates a child to continue 'being in school' and complete his/her education. In order to facilitate their *'pursuing and completing of elementary education on any grounds'* (RTE 2009: Section 8c of Chapter III) it is of utmost importance to bring the re-enrolled and never enrolled students academically and psychologically at par with their classmates. Besides the extrinsic support through special training provision, it is necessary therefore to ensure that such students become intrinsically motivated and feel engaged with their school and with learning. A strong bonding with the school, peers and teachers is crucial to bring students to school every day but also motivate her/him to put greater efforts in learning. Besides, to engage in a school/classroom a student needs help by understanding her/his psychological needs as they have a drive to satisfy three core needs of competence, autonomy and relatedness (Ryan, 1995).

A student does not stop attending school all of a sudden. Dropping out of school is a process that occurs gradually which often gets initiated by low academic performance, feelings of being neglected by peers and teachers, or feelings of unworthiness and lack of competence. When a student begins to view school

as a place which is not valuable enough to spend time, it is then onwards that she/he begins to get detached from it. Participation of students' and their sense of belongingness with the school are of concern not only for its relationship with students' learning, but also because of its relation in students' disposition towards the process of schooling and more importantly their life-long learning. Over the years, researches have led to the understanding that the construct of engagement is useful for understanding and dealing with this gradual process of disconnecting with school (Finn, 1989). Engagement, therefore, is that construct which helps in providing a means to intervene and prevent students from distancing themselves from school life and its educational outcomes.

Researchers have proposed different models for describing students' engagement; however, it remains the primary theoretical model in understanding dropout and is a necessary component in promoting school completion, with adequate academic and social skills (Christenson et al., 2008; Finn, 2006). Student's engagement is considered as an active involvement of the students in school and learning tasks (Reeve et al., 2004). According to Klem and Connell (2004) students' engagement is an ongoing engagement (students' behavioural, emotional and thought processes) in school and a reaction to challenges (students' strategy for coping with difficult situations) faced in school. Thus, student engagement is a multi-dimensional construct encompassing the behavioural, emotional and cognitive dimensions.

When student engagement was treated as an outcome variable, research findings revealed that school environment has influences on the level of students' engagement (Bryk and Thum, 1989; Finn and Voekl, 1993). Goodnow (1992) further revealed the relation between students' sense of belongingness and their valuing of academic work demands considerable persistence and expectations of successful educational outcomes by them. This supports the finding of Eccles et al. (1993) which revealed that motivation of students varied with 'fit' between educational context and students developmental needs. Furrer and Skinner (2003) in their study showed that both student and teachers reported that students' level of behavioural and emotional engagement mediate significantly the relationship between relatedness and academic performance.

Thus, it can be said that psychological engagement with school does play a crucial role in their motivation and their academic

outcomes. It also points towards the pivotal role that quality of instruction, school and classroom environment and teachers' interaction has on students' engagement, which further goes to influence their learning outcomes.

The systemic provision of establishing learning centres and bridge courses is an effort to bring such students at par with their classmates and thus fill up their academic gap and facilitate their academic engagement. The RTE Act 2009 though has made systemic provisions to ensure that education is provided to such children who are entering school and getting admitted to grades as appropriate to their age, but simultaneous efforts also need to be made to ensure that such students feel psychologically engaged with their school and do not drop out. Against this backdrop, the present study made an attempt to identify factors that facilitate/impede engagement with school of students who have been admitted to grades appropriate to their age.

Method

Objective and Research Questions

The objective of the present paper was to understand the process of psychological engagement of students' enrolled with school through 'age-appropriate-grade' provision of RTE Act 2009. For the attainment of this objective, the following research questions were framed:

- What are the perceptions of students enrolled through 'age-appropriate-grade' towards their school, teachers, peers and self?
- What are the psychological needs of students enrolled through 'age-appropriate-grade'?
- What are the factors that facilitate/impede 'age-appropriate-grade' enrolled students' engagement with school?

Population

The sample population lived in slums particularly in Rudrapur block of Udhamsingh Nagar and Haldwani block of Nainital, while in Gadarpur and Baazpur blocks of Udhamsingh Nagar the students lived in semi-urban areas surrounded by lands of sugarcane, corn and 'popular trees'. In Rudrapur and Gadarpur industries and factories provided students' families opportunity for earning. In Baazpur and Haldwani, with the Kosi river running nearby,

most families indulged in seasonal work of loading and unloading sand from the river. It was during this season when parents urged the entire household (including the school going children) to take part in digging sand and loading them in trucks. Since payment was made on the basis of the number of trucks loaded, the family required more hands to dig and load more number of trucks and increase its chance of earning a good sum of money. However, this led to the children remaining absent from school for considerable number of days/weeks. The situation was more acute for the upper primary stage students as with their youthful energy they could dig faster and run around faster.

Another activity for earning livelihood which prevented the students from regularly attending the school, particularly those in Grades 3–5, was that of plucking green peas and scaling them to be packed and sold in markets. *'Matarchilna'* as it is popularly called was one of the biggest reasons for students to dropout in earlier instances and still continued to be a predominant factor in their remaining away from school for a long period of time during its season.

The average size of household was 8–10 with minimum of 4 to 8 siblings. It was noted that in most of the families the younger siblings were sent to school, while the elder ones never went to school/had left school after Class V and were presently either working at home or married away. However, there were few rare cases where an elder sibling (of the students in the study) had completed elementary, secondary or senior secondary schooling.

Sample, Tools and Data Analysis

The study was carried out in two districts of Uttarakhand (Udhamsingh Nagar and Nainital). The districts having high density of the sample population, as shared by the office of SSA of Uttarakhand, were selected. A total of 140 students enrolled through 'age-appropriate-grade admission provision of RTE Act 2009, from Classes III to VIII in Government boys and girls schools in semi-urban areas of the districts, formed the sample for the study. Purposive sampling was followed for drawing the sample of the study. Data were collected through semi-structured interview schedule to assess behavioural, emotional and cognitive dimensions of engagement of the target population and observation of the samples' interaction inside classroom as well as in other unstructured spaces of the school such as playground and corridors were recorded as field notes.

The thematic analysis of the data was carried out and responses were categorised under the identified parameters of the three dimensions of students' psychological engagement i.e. behavioural, emotional and cognitive.

Results and Discussion

Perceptions of Students Enrolled Through 'Age-appropriate-Grade' Towards their School, Teachers, Peers and Self

The perception of 'age-appropriate-grade' enrolled students about their school was implicit in their responses to queries on how they felt about school and their participation in curricular and co-curricular activities. The reason for liking school ranged from liking the regular ritual of coming to school, being in school, getting an opportunity to play in school and getting to eat food on time. Students shared that their urge to concentrate in class was the primary reason for their coming to school, since attending school and being attentive in class was the only way through which they could learn. Therefore, paying attention in class and concentrating was pertinent. However, there were also a few who shared that though they perceived school and learning in school as crucial and therefore made serious efforts to concentrate, but either got diverted or failed to be attentive because they were in 'no mood' to study and/or were plagued with memories of the difficulties faced by their families.

Analysis of the students' perception towards their teachers revealed they perceived teachers as someone whom they 'should' like, as 'it is the teachers who make it possible for them to read and write', the purpose for which they were in the school. Indeed, almost all expressed their liking for their teachers as the teacher talked lovingly and behaved in a manner that expressed the teachers' care for the students, and she/he taught in such a way that it was easy to understand and clarify their doubts. The teacher was also perceived as a compassionate person who is fair, 'just' and concerned with her/his wards. The teachers who fulfilled the above expectations were liked by the students. The behaviour of teachers which were viewed by the students as righteous were: 'punishing someone only when the student(s) committed mistake, such acts as making noise in the class and distracting other students, teasing or harassing some classmate, not completing the given task or coming to class without learning or completing the assigned tasks.

The teacher who 'let them play during games period' and 'in her/his presence in the class prevented occurrence of any kind of teasing of classmates' was perceived as a 'just' teacher. However, students' perception of a teacher as the 'knowledge provider' and a role model of a righteous person led to their disliking certain aspects of some teachers in the same schools. When the teacher(s) punished the students for committing errors in reading-writing, spared no time to clarify doubts, got angry and scolded when clarification for any doubt was sought, the students perceived them as not fulfilling the role of a teacher and thus their respect and liking for such teachers were rare. The students also did not like those teachers who displayed non-caring feelings towards them and lack of understanding of their problems, such as not being able to come to school in uniform, not attending school due to helping parent at home or work and scolding student who has not committed any mistake.

The students perceived the school as 'belonging' to them and were found to participate in activities. Analysis of students' responses revealed that such schools were considered good where students perceived their teacher/teachers as caring, understanding and 'just', and they participated actively in curricular as well as other school activities. In schools, where teachers helped students who perceived themselves as incapable of learning/doing an activity, the students had high opinion about such types of schools. On the other hand, in schools where most of the teachers were not perceived fulfilling their role as 'teachers', and students participated due to motivation by sibling, friend or self, such schools were not liked by the students. The students considered 'worthy' of running to only those teachers at the time of crisis who were perceived as 'understanding' and 'non-judgmental'. In cases where the teacher was found non-caring and judgmental, it was usually a friend or a sibling to whom the students turned to for assistance and guidance. In very rare cases where an elder sibling had completed her or his elementary, secondary or senior secondary education, the students' in the study were found to be guided and motivated by them at hours of distress caused by uncaring and judgemental teachers.

Results revealed that students liked peers who were cooperative, collaborated in learning and other activities, were caring and shared similar purpose of coming to school (i.e., 'to read-write' and learn something ' meaningful'). Using foul language by peers in

school premises, teasing and fighting were behaviours that were disliked by majority of the students.

Lastly, the students' perception about themselves revealed that those who perceived themselves worthy and competent were persistent and found innovative ways of not only taking time out for studying at home but also gave utmost importance to school and studying. Preparing for any activity related to school (be it an examination or a group dance), such students gave importance to planning, seeking help and setting goals. As for those students who perceived themselves as incompetent were the ones who always sought support from either a friend, sibling or teacher, and were motivated only when they were pushed by the friend/teacher. For such students the need to monitor their own progress and reflect upon their own actions was not considered necessary and their urge for 'reading-writing' was only due to their parents/school desires.

Psychological Needs of Students Enrolled through 'Age-appropriate-grade'

Analysis of the responses of students to queries on what did they like in the school and what did they like and dislike doing in school, it was obtained that for majority of the students school fulfilled their need of feeling competent. The situation of coming to school, being in school, and learning to read and write while in school were matters of pride for doing something meaningful. Also reading-writing in school concretised the hope for enhancement in their quality of life, as adults and thus enthused optimism (a crucial psychological need) amongst them. The scope to actively participate in 'doing' things in school and classroom, be it for peers or teachers, was enjoyable and was expressed by the students recurrently. This made the need of 'being useful' to their significant stakeholders as one of the prominent psychological need of the population. Also like any student the need to feel 'belongingness' and 'being part of a group' was shared by the students. Liking a teacher for being compassionate, understanding and facilitating learning in the population helped in making the students' feel comfortable with the teacher and strengthened the need of belonging to the teacher and school, thus encouraging them to make efforts and actively participate in learning.

Analysis showed that there was an unanimous feeling of dislike amongst the students when there was fighting, teasing, shouting

in the class, when teacher scolded, when there was no one to teach in class and everyone loitered around, when classmates did not talk with each other or there was gossiping among groups of students. It was noteworthy that while students enjoyed 'doing things' for their school and class which gave them the feeling of a 'being a student' where they were indulged in 'reading-writing', they disliked cleaning floors, and fetching water for entire school as these work they did at home and they did not 'come to school' for this reason.

The responses of students also revealed their need for a friendly and harmonious school environment. School was a place where they came for happiness and some relief from the unhappy surroundings of their life at home, hence the reason for liking such behaviours of classmates as—not indulging in fighting, talking courteously, and making efforts to extend help with studies and in preparing for examinations. Further, students liked teachers' behaviours such as talking lovingly, visiting classmates' home or calling them from home when they remained absent in school, punishing only when someone commits mistake, and not scolding even when not able to do/learn anything in the class. In students' opinion, such behaviours contributed towards developing and maintaining a harmonious environment in the class and school.

Factors Facilitating/Impeding 'Age-appropriate-grade' Enrolled Students' Engagement with School

The responses of students about their perception of the peers, teachers, school and self and their sharing of the psychological needs as well as their responses to why they participated in school or classroom activities, what they liked or disliked doing in school, revealed the factors that facilitated their engagement with school and also factors that created a distance between the student and her/his school. It was revealed that factors that facilitated the engagement of students were mainly an amicable relation with classmates and peers in school, caring and collaboration amongst peers for academic activities, being made to feel competent and efficacious about self as a student and also as a human being by teachers, made to feel 'useful' as a student to peers/classmates, teachers while in school, and the presence of teachers in class as a compassionate but authority figure. It was also observed that their relationship with others (peers, teachers) played a crucial role in helping them to feel bonded; which further facilitated their

engagement with school, wherein teacher's cooperative behaviour (verbal as well as non-verbal) played a pivotal role for motivating students.

The factors impeding engagement in the sample population were poor conduct and using foul language by peers/classmates, teachers as well as self, being made to feel 'separate' in class/playground etc. by teachers and/or classmates, lack of appreciation of efforts made by a student, perceived lack of understanding of their family conditions by teachers, non-comprehensibility of subject matter being taught (irrespective of making efforts by self) and lack of adequate number of teachers in school, which led to many classes going without any teacher and thus leaving scope for 'free-time' amongst students during which they fought and quarrelled with each other. Poor learning environment at home was another major impeding factor towards their engagement with school. The students were bound to engage in household chores as well as help elders in the family at work place (agriculture, taking care of cows, accompanying elders to brick kilns and during paddy cotton cutting seasons) in earning money for their survival. These became major obstacle for their being regular in school. In addition, lack of support, motivation and guidance at home made the students find it very difficult to 'resume going to school' once they were away for a considerable number of days (even a week's absence from school was shared as a long time by the students and that it was difficult to resume school again!).

Implications

The study highlights that engagement with school of such students who are enrolled through 'age-appropriate-grade' (and majorly live in the urban/semi urban slums) is a collaborative endeavour between teachers and students as a team. The findings of the study may help schools to create an environment conducive for active involvement and participation of these students with all activities of school by designing interventions that fulfil their psychological needs. The study throws light on the sample population's psychological engagement revealing how they perceived their school, teachers, peers as well as themselves as effective stakeholders in school and also brings forth the factors which facilitated and factors which impeded their emotional, behavioural and cognitive engagement with school.

The systemic provision through the RTE Act 2009 of providing special training for bridging the academic gaps with their classmates may include the above mentioned observations from the study so that their behavioural, emotional and cognitive engagement with school is ensured and thus bridge their emotional gaps and enable such students to complete their elementary education.

References

Bryk, A. S., and Y. M. Thum. 1989. The Effects of High School Organization on Dropping Out: An Exploratory Investigation. *American Education Research Journal,* 26(3), 353–83.

Christenson, S.L., A.L. Reschly, J. J. Appleton, S. Berman, D. Spangers, and P. Varro. 2008. Best Practices in Fostering Student Engagement. In A. Thomas and J. Grimes (Eds.), *Best Practices in School Psychology* (pp. 1099-1120). Washington, DC: National Association of School Psychologists.

Eccles, J. S., C. Midgley, A. Wigfield, C. M. Buchanan, D. Reuman, C. Flanagan, and D. Mac Tver. 1993. Development during Adolescence: The Impact of Stage-Environment Fit on Young Adolescents' Experiences in Schools and Families. *American Psychologist,* 48, 90-101.

Finn, J. 1989. Withdrawing from School. *Review of Educational Research,* 59, 117-142.

Finn, J. D., and K. E. Voelkl. 1993. School Characteristics Related to Student Engagement. *Journal of Negro Education,* 62(3).

Finn, J. D. 2006. The Adult Lives of At-risk Students: The Role of Attainment and Engagement in High School. National Centre for Educational Statistics, Washington DC: US Department of Education.

Furrer, C., and E. Skinner. 2003. Sense of Relatedness as a Factor in Children's Academic Engagement and Performance. *Journal of Educational Psychology,* 95, 148-162.

Goodnow, C. 1992. School Motivation, Engagement and Sense of Belonging among Urban Adolescent Students. In J. L. Appleton, S.L. Christenson, and M. J. Furlong (2008), Student Engagement with School: Critical Conceptual and Methodological Issues of the Construct. *Psychology in the schools,* 45 (5), 369-386.

Klem, A. M., and J. P. Connell. 2004. Relationships Matters: Linking Teacher Support to Student Engagement and Achievement. *Journal of School Health,* 74 (7)

Reeve, J., E. L. Deci, and R. M. Ryan. 2004. Self-determination Theory: A Dialectical Framework for Understanding Socio-cultural Influences on Student Motivation. In S. Van Etten and M. Pressley (Eds.), Big Theories revisited (pp. 31–60). Greenwich, CT: Information Age Press.

Ryan, R.M. 1995. Psychological Needs and Facilitation of Integrative Processes. *Journal of Personality,* 63 (3).

Analytical Case Study of the SUCCESS School Project in Four Mandals of Visakhapatnam District, Andhra Pradesh

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Abstract

In the global market, a rapid development is seen in the field of Science and Technology and innovation. Now days, students have more inclination to do work in the global village. So it is important to equip the students with required abilities for the future needs; education plays a key role. For the proper foundation of a student, a teacher should take care about the education of the child from the root level. With the vision to increase global opportunities for the budding rural youth, Government of Andhra Pradesh has launched an excellent project 'SUCCESS' in 2006. It is implemented in the selected schools. But the outcome from the project not equips the student with the global standards. Hence, we did the survey to know the resons by considering a sample of 15 schools in 4 mandals of Visakhapatnam. For the analysis, five parameters such as Infrastructure facilities, Human Resource, Financial support, Establishment of Laboratories and Furniture and Teaching Learning Methods, are considered. In each parameter sub parameters are considered for the survey and corresponding evaluation forms are prepared for the survey. However, result points out the improvement needed in the implementation of the project.

Introduction

SUCCESS (Strengthening and Universalisation of Quality and Access to Secondary Schools) project was initiated with a vision

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of increasing global opportunities for the budding rural youth. In Andhra Pradesh, most of the geological areas are rural, and education offered by the Government is in the local language (i.e., Telugu) only. Hence people who can afford money for higher level of education in the private sector can only catch the global opportunities. But the common/rural people are not in a position to pay that much money for education, and the Government also realised that definite injustice had been done to the children of common man (Barratt et al., The concepts of Quality in education: a review pf the onternational literature on the concept of quality in education 2006; Brandt, scaffolding ESL undergraduates academic acculturation through journal articles as teaching resource, 2002 and Saavedra and Opfer, teaching and learning 21st centure skills, 2012). In order to nullify these differences and, to give education with the emphasis on English language as communicating media (Pathan and shaikh, 2012; Final Report on Quality in School Education, for quality Council of India), the Government has started the SUCCESS Project. As per the survey done by the Govt. of Andhra Pradesh (AP) (GO. MS. No. 76, Dated 10.06.2008), 95 per cent of private sector high schools are offering English medium, but in the Government sector more than 98 per cent of high schools are in Telugu medium only. As per the Andhra Pradesh state, GO. Ms. No. 76, Dt:10-06-2008, most of the students in the rural areas particularly those belonging to the rural families including the small and marginal farmers, agricultural laborers, artisans, poor ST, SC and BC families have no alternative but to pursue their studies in Telugu medium only, in the absence of any facilities for English medium in the rural areas.

After considering the above observations in 2006, the Government has given permission to start the English sections as a part of the curriculum (Farrell, 2007). Many municipal corporations and Municipal counsel in the state have taken initiative and took the opinion of the parents, Educationalist and other stake holders to start the English medium in the existing schools as per the demand. Further around 6500 High schools were provided with computer education programme under ICT (Information and Communication Technology) Project (Hubball, Scholarly approaches to Peer-Review of teaching, 2011; Farrell et al. English as an International Language, Medium of Instruction, and Language Debate, 2007; Uys et al., English medium of instruction: a situation analysis. 2007). As per the AP state GO. Ms. No. 76,

Dt: 10-06-2008, English training programmes were proposed for the existing teachers, and district level resource persons groups were formed to assist the teachers. As a part of English development and, to improve teaching skills, supply of audio and video equipments and the library facilities were also proposed in the same GO and they tried to implement the same (Evans, 2010; Navodaya Vidyalayas School, Handbook issued by Government of India, 2013 –14). According to the global requirements, certain curriculum modifications were also proposed and, they were implemented. Even though significant steps were taken by the Government at different levels of management, still the changes in the educational system and the fulfillment of expectations of the educationalists as per the global needs were not satisfied and the results were not encouraging (Ha et al., English as an International Language, Medium of Instruction, and Language Debate" 2013; Reddy, 'Teachers and Parents' opinion on English medium and CBSE syllabus AP Govt. Schools' 2010). This study gives guidelines for social reformers, educationalists and for the schools for effective implementation of educational reforms in the educational institutions.

Methodology Used in the Study

To analyse the SUCCESS project in four mandals of Visakhapatnam region, a group of 15 schools were selected. In this group, 6 schools were Government, 5 were Zilla Parishad (ZP) and 4 were Municipal High Schools (MH). In the selected schools fifty per cent of the schools were in the rural and the remaining fifty per cent in the urban. To know the implementation levels in the backward area one tribal school was also included in the selected sample. Data collection was done by giving questionnaire with 3 point rating scale, which included five parameters, i.e., Infrastructure facilities, Human Resource, Financial support, establishments of Laboratories and Furniture and Teaching Learning Methods. All the school teachers' opinion in the selected sample was collected. The number of teachers in each category of school is shown in the Table 1. The selected 15 schools are in 4 mandals, such as Bheemili, Pendurthy, Sabbavaram and Chodavaram. Stratified random sampling was the strategy implemented for the survey. The data were analysed by comparing the facilities with the minimum global requirements for the overall development of the student in the SUCCESS project, and the data were also compared among the schools.

Table 1
Structure of schools in the selected sample

| School Type	No. of Schools Considered for Survey	No. of Teachers (M+F)	No. of Schools in 4 Mandals (Bheemili, Pendurty, Chodavram and Sabbavaram)	% of Schools considered
Govt.	6	(30+18)	6	100%
ZPH	5	(22+15)	10	50%
MH	4	(12+20)	4	100%
Total	**15**	**(64+53)**	**20**	**75%**

Results

Infrastructure

Infrastructure is one of the important parameter which has a prominent impact over the output of any project. To collect the data with respect to the infrastructure, following eight sub-parameters were considered.

- Electricity facility (ELE.F)
- Classrooms for regular classworks (RCR)
- Furniture for teaching staff (FTS)
- Student tables (STS)
- Tutorial classroom (TCR)
- Counseling classrooms (CCR)
- Library facility(Lib)
- Remedial classroom

Most of the schools were not having these basic infrastructures (Figure 1). All the schools were provided with the electricity facility. But that facility was not extended to the classrooms and laboratory level. In 27 per cent of schools, electricity facility was limited to office room only. To conduct the regular class work, all schools in the sample were not providing adequate number of class rooms. Only 20 per cent schools were having sufficient number of class rooms, 40 per cent of schools had class-rooms partially i.e., manageable, and remaining 40 per cent of the schools were not having enough number of classrooms to conduct regular class-work. Hence, the number of classrooms needs to be increased.
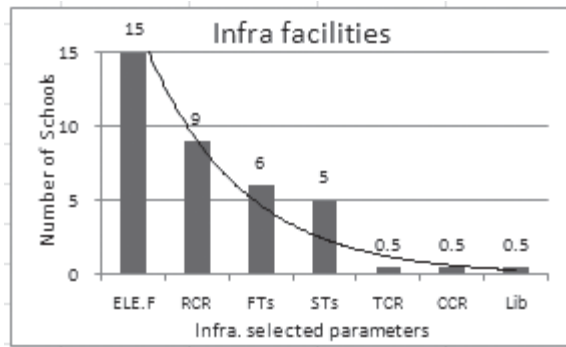
Figure 1: Infrastructure facilities vs no. of Schools

Teachers are key persons and pillars for the educational, and they should be provided with adequate staff rooms and furniture. But as per the study report, only 13 per cent of schools were having sufficient chairs and tables for the teachers, remaining 87 per cent schools are having chairs and tables partially.

Without Primary facilities such as benches, water, toilets for students, one can't create the good learning environment. At least providing of seating facility for the high school students is primary requirement. But, as per the study only 33 per cent of schools had sufficient benches for the students, remaining schools did not have.

The great philosopher Socrates stated that, "Education is the kindling of a flame, not filling of a vessel." Students in a classroom are composition of different talents, learning abilities, IQ levels and life styles. Hence, the students should be supported with counseling classes, tutorial classes, and remedial classes when ever required. Unfortunately these facilities were not available in the selected sample of schools. Self learning, collaborative learning and experimental approach are key parameters for the continuous learning and innovation. The survey showed that none of the schools had separate library facility; some of the schools had book racks in the office with inadequate books.

The opinions of teachers who are working in these schools were also collected; respective opinions are shown in the Pie chart (Figure 2). Forty-nine per cent of teachers said that they were not provided with sufficient infrastructure.
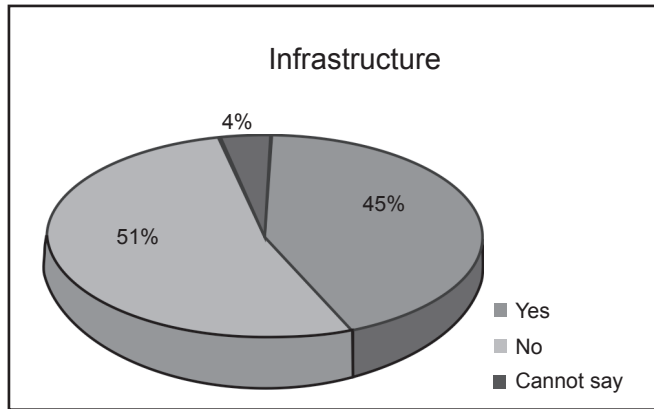
Figure 2: Teachers opinion on infrastructure facility

Human Resource Management

Human resources play a vital role to implement the objectives of any organisation. To collect the data with respect to the Human Resources, following five sub-parameters were considered.

• Teachers' Availability For All Subjects (TAFAS)

• Supporting Staff (SS)

• Computer Faculty (CF)

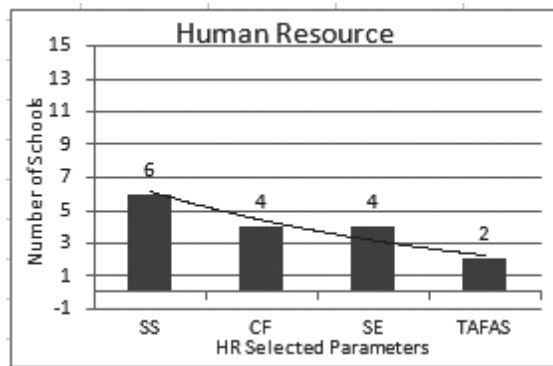• Students' Enrolment (SE)

• Performance based incentives

Figure 3: No. of schools vs HR parameters

For all the subjects, respective subject teachers should be available in all the schools, and it is a primary requirement. Figure 3 shows that only 13 per cent of schools were having sufficient teaching staff for both the medium i.e., in English and Telugu. 13 per cent of schools were not having teachers for all subjects. Remaining 74 per cent of schools had insufficient teachers as student teachers ratio, for all subjects, for both mediums.

Supporting staff is also an integral part of the educational system to achieve the objectives but, in most of the schools they were neglected or least preference was given. In our selected sample only 40 per cent of the schools were having one person without technical background as supporting staff and was used for multiple-purposes. In the case of library no responsible person was appointed to handle the library activities. Upgradation of skills also influences a lot, for the rapid development of the schools. But unfortunately no school provided such training programmes.

As we know, the skillful operator is more important than the machines. In our investigation 26 per cent of the schools only were provided with computer faculty on contract basis. Remaining 74 per cent of schools had computers, but they did not have operators. There was no regular period for the computer practice in the timetable.

One can observe the least student enrolment for English medium from the figure 3; It is obvious whenever the school is not provided with sufficient facilities with respect to infrastructure and human resources. The regional influence was also observed. In urban areas the English medium enrolment was more than the rural schools. However, in the urban schools only 26 per cent of students were enrolled for the English medium.

For the active participation of the faculty and pro-active involvement to achieve the objective of SUCCESS project, faculty should be encouraged with performance based incentives and appraisals. It will encourage not only the competitive spirit but also belongingness. But this component was totally neglected in the SUCCESS project.

The opinion of the teachers on human resources availability was collected and is shown in the Figure 4. A large number of teachers (55%) felt that they were not supported with adequate human resources.
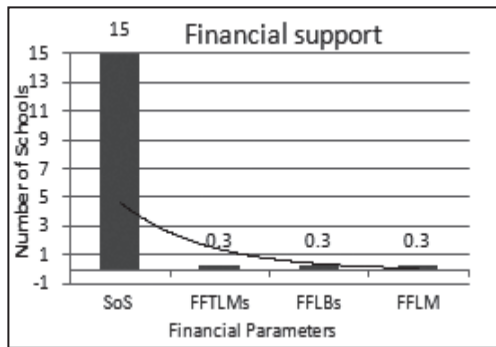
Financial Support

To establish any new system and to improve the quality the financial support should be streamlined. But in the success project it was
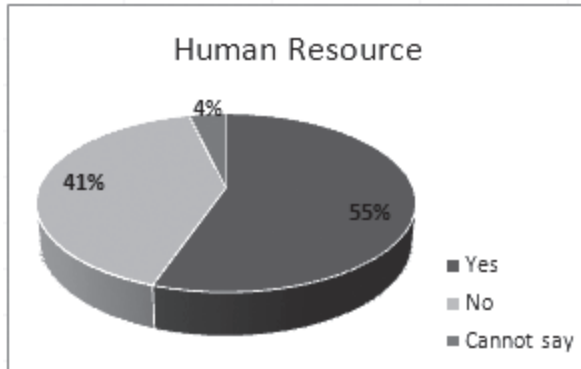
Figure 4: Teachers opinion on human resources availability

not streamlined. To collect the data on the financial support four sub-parameters were chosen which are given below:
• Salaries for the staff (SoS)
• Funds to prepare TLMs and Charts (FFTLMs)
• Funds to buy new books for library (FFLBs)
• Funds for lab and Computer maintenance (FFLM)

Figure 5 : Financial support vs no. of schools

As per the working conditions as well as the status of living, almost all the teachers expressed satisfaction with respect to their salaries. But the status of the remaining three parameters i.e funds for preparing teaching aids, funds for the library, and for the maintenance of computer lab was poor. Only ₹ 500/- per year was provided to the teachers for preparing teaching aids. No well defined procedure was in place to get the funds from the higher

authorities. In the opinion of teachers most of the teachers were not having clear idea about what financial support they required? That showed the involvement of teachers in the SUCCESS project was low.

Laboratory Facility

For the SUCCESS project where the English and communication plays key role, good laboratory and self learning facilities are needed. To study the laboratory facility, following three parameters were considered:

• English activity based communication Lab (ECL)
• Subject Labs (SL)
• Computer Lab (Com.L)
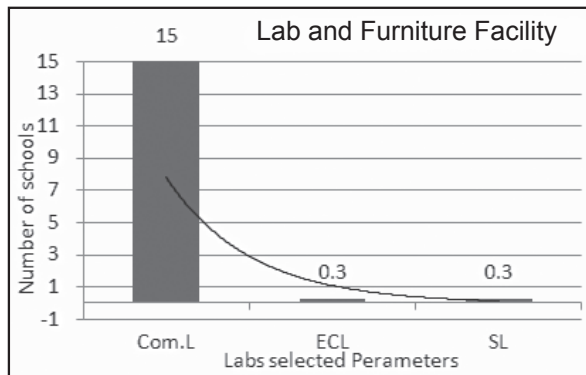
Figure 6: Labs and furniture facility vs no. of schools

All schools in the sample are provided with computer lab. However, the respective lab faculty and maintenance of the computer was almost nil (Figure 6). The subject labs and activity based English communication lab did not exist in the sample schools. For the SUCCESS project activity based English communication lab plays a key role and it boosts the quality in the remaining subjects, but it was highly neglected. Even though six years have completed after initialisation of success project, no one took care about the English communication lab and subject labs.

About 75 per cent teachers reported that they were not supported with proper lab facilities (Figure 7) Teachers realised the importance of the lab hence; if it is there the students may get benefited a lot.
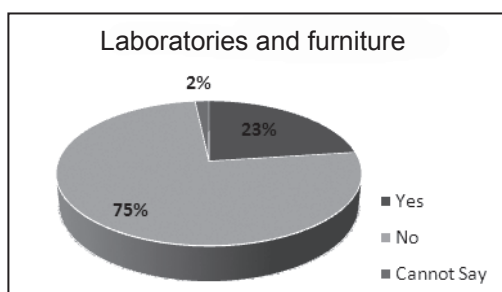
Figure 7: Teachers opinion on labs and furniture

Teaching Learning Methods

The objective of the SUCCESS schools is to provide education to the student which is globally competent. Advanced teaching methodologies, updated curriculum, and learning methods, play a key role in the project. To analyse the teaching learning methods 11 sub parameters are considered as shown in Table 2.

Table 2
Sub-parameters of teaching learning methods

1. English as Medium (EM)	2. Activity Based Teaching and Learning (ABTL)
3. Feedback from the Educationalists(FbE)	4. Using of ICT Facilities (ICT)
5. Conducting Remedial Classes for Weak Students (CRCWS)	6. Competency of Curriculum with the Global Demands (CCGD)
7. Staff Development Programmes in English (SDPE)	8. Staff Development Programmes in Teaching and Learning Methods (SDPTLM)
9. Staff Development Programme for New Content (SDPNC)	10. Self Learning Facilities (SLF)
11. Feedback on Content Delivery (FbCD)	

When the students need to be globally competent, they must be acquainted with English. Internet, technological literature and recent advances etc., are mostly available in English language. The enrollment of students for the English medium and the facilities available with reference to English medium were not up to the mark. Though the English medium was used in all the schools, teaching faculty, supporting staff, lab facilities, and staff development programmes in English were poor (Figure 8). It led to deviation of the objectives and dilution of the project.
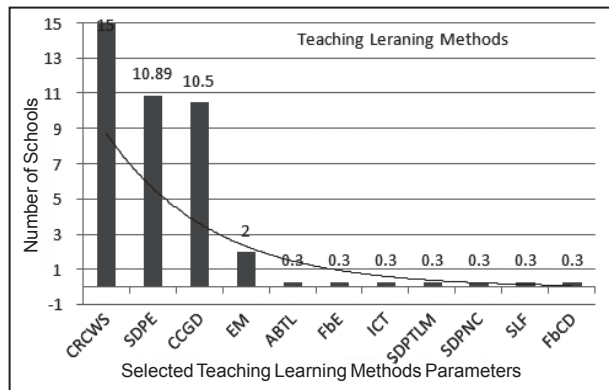
Figure 8: No. of schools vs teaching learning methods

Curriculum revision and regular monitoring is must for knowledge upgradation with reference to recent developments. The enhancement of curriculum and regular revisions adoption was not found to be satisfactory. The feedback mechanism is a corrective mechanism for a system and feedback from the students, parents, and educationalists is must for continuous improvement. Unfortunately in the Government schools, feedback mechanism was not used. Some of the findings on sub-parameters of teaching learning methods are given below.

(a) English as Medium: Most of the school teachers were having difficulty in teaching the subject in English medium. Only 2 per cent of teachers endorsed that they did not have any problem to teach in english medium.

(b) Activity Based Teaching and Learning: The teachers in the sample schools were not supported and encouraged to do the activities. There was no sufficient financial support. The involvement of the teachers in the curriculum revision was found to be less. 90 per cent of the teachers were not happy with the modified curriculum and they were not provided with the proper training on the revised curriculum. Hence, many teachers expressed their dissatisfaction on curriculum revisions.

(c) Taking Feedback from the Educationalists: For the continuous development of the education quality and to minimise the gap in between existed educational scenario and global updates, the feedback from the educationalists at different intervals of the project need to consider for the continues quality improvement. Unfortunately no feedback is considered from

educationalists, this parameter totally neglected in the selected sample of schools the same situation existed in all the schools.

(d) Usage of ICT Facilities: Information and communication technology facilities are very important to uplift the student learning. Globally their impact also analysed by many researchers. In the selected sample of schools, no school is provided with the ICT facilities.

(e) Conducting Remedial Classes for Weak Students: All the schools are conducting remedial classes for weak students.

(f) Competency of Curriculum with the Global Demands: 70 per cent of the teachers are said that existed curriculum is compatible with the social and global needs, but still quality refinement is required. 30 per cent of the teachers are said that curriculum is not reaching social and global needs.

(g) Staff Developing Programmes in English: As per the AP state, GO. Ms. No. 76 there should be regular English Training for subject teachers, but in the investigation 72.65 per cent of the teachers are not under gone any type of English training programme from the Government, 27.36 per cent of the teachers are taken English Training programme one time up to March 2014, even though the project started in 2006.

(h) Staff Development Programmes in Teaching and Learning Methods: Globally several teaching and learning methods such as student centric learning blended learning, outcome based learning, self learning, collaborative learning, continuous learning and new teaching methodologies are developed. Most of the organisations conducted staff development programmes on these methods. But no staff development programmes in teaching and Learning Methods were conducted in the selected sample of schools. At least encouragement to attend for these programmes at anywhere in the national level also almost nil.

(i) Staff Development Programme for New Content: No regular staff development programmes are organised on, how to teach the new content? What purpose it is introduced? And what is the expected outcome from the students?

(j) Self Learning Facilities: The primary duty of a teacher is to develop excitation and interest in the students towards the subject, and the teachers are putting their true efforts in it. It

leads to improvement of self learning and continuous learning in students. But the self learning facilities such as internet, online library, physical library and projects lab for innovative thoughts, are not provided in the schools.

(k) Feedback on Content Delivery: There is no feedback system on content delivery is used in the selected sample of schools.

Conclusions

From the above analysis one can observe the SUCCESS project is started without doing proper background work. Whenever a project started with a vision for a long period, the vision and objectives should share with all the stake holders of the project at different levels. In the SUCCESS project no bench marks are defined for the quality outputs in different aspects. Feedbacks from the different stakeholders and at different time intervals need to be consider. Unfortunately feedback is completely neglected. Implementation of the project simultaneously in 6,500 schools also leads to improper output. Phase by phase implementation has to be done, not only improves the quality, but also reduces the total cost of the project. Quality accreditation certification for SUCCESS schools also is nowhere defined in the project. Hence, measurable transparent results will not be provided to the public, stake holders as well as higher authorities.

Without feedback mechanism on curriculum, evaluation system, content delivery, teaching learning methods and lab facilities, one cannot observe the improvements in the existed system. Assessment and accreditation is the other mechanism to improve the quality. It also gives the comparative quality statements among different institutions. The assessment and accreditation advisable to implement in two stages, one is internal assessment; the other one is external independent body assessment. The internal assessment leads to the continuous improvement and external assessment gives a transparent quality scaling to the schools, as well as schools establishing authorities i.e., Government.

A model project implementation, feedback, accreditation diagram is shown in the Figure 9. To achieve the objective of the project, it is divided into five parallel activities. Hence, those activities can handle independently without interrupting the other. The corresponding feedbacks are shown in doted lines and those feedbacks can take individually. Each parallel activity contains dependent activities, such as training programmes for

the different levels of stakeholders, the inter-dependency of the activities coordinated by the project manager. Hence, wherever the involvement of higher authorities needed they can involve and quick decisions can be implemented. Finally the project should be concluded with a quality certification given by independent quality assessing and accreditation body. The Figure 9, gives us an overall idea but not the micro level project handling.
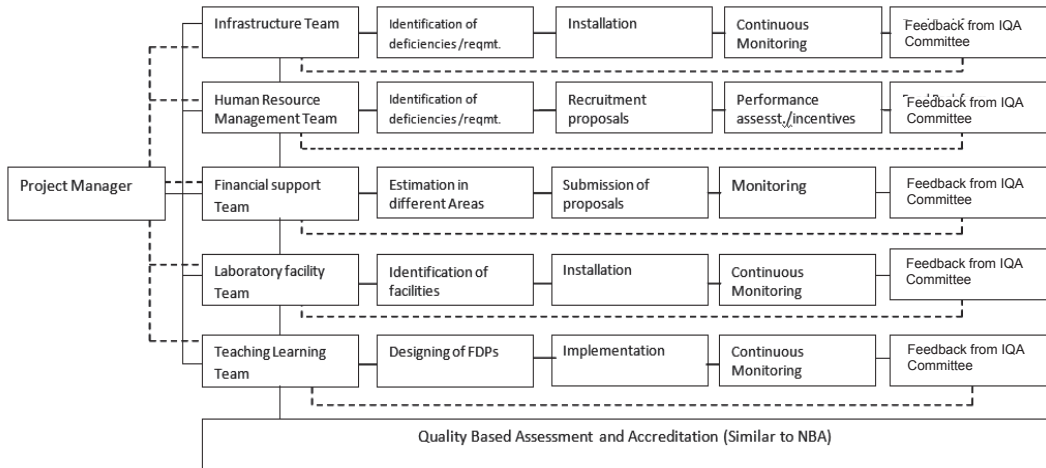
Figure 9: A model project organisation chart

REFERENCE

Barratt, A. M., Chawala-Duggan, R., L. Lowe, J. Nikel and E. Ukpo. 2006. The Concept Of Quality In Education: A Review of the 'International' Literature on the Concept of Quality in Education. *A Journal of Comparative and International Education. Edqual working paper no. 3* pp. 1-15.

Brandt, C. 2010. Scaffolding ESL Undergraduates' Academic Acculturation through Journal Articles as Teaching Resource. *International Journal of Arts and Sciences.* 3(17). pp. 276-286.

Evans, M.D.R., J. Kelley, J. Sikora, D. J. Treiman. 2010. Family Scholarly Culture and Educational Success: Books and Schooling in 27 Nation. Published by Elsevier Ltd on behalf of International Sociological Association Research Committee 28 on Social Stratification and Mobility. pp. 1-25.

Farrell, K., M. Devlin and R. James, Nation Building. 2007. English as an International Language, Medium of Instruction, and Language Debate. Malaysia and Possible Ways Forward. *Journal of International and Comparative Education.* pp. 2-17, University of Melbourne.

Final Report on Quality in School Education, for quality Council of India. New Delhi, by Institute fo Studies in Industrial Development 4, Institutional Area, Vasant Kunj, New Delhi.

Govt. of Andhr Pradesh. GO. MS. No. 76, Dated 10.06.2008.

Ha, P. L., J. Kho. and B. Chang. 2013. English as An International language, Medium of Instruction, And Language Debate: Malaysia And Possible Ways. *Forward Journal of International and Comparative Education.* vol 2. Issue 2, pp. 58-71.

Hubball, H. 2011. Scholarly Approaches To Peer-Review Of Teaching: Emergent Frameworks And Outcomes In A Research intensive University. *Transformative Dialogues Journal.* No 3. Volume 4.

Navodaya Vidyalayas School. Hand book issued by Government of India 2013-14.

Pandey, S. August 2007. Constructivism and the Pedagogy of Education for Peace A Reflection on School Education Curriculum Reform (NCF–2005). *Journal of Indian Education.* pp. 24

Pathan, S. S., and S. Shiakh. 2012. Students Attitude in English and vernacular medium in scovadary schools. Published in *International Refereed Research Journal.* vol.– III, Issue- 1, 141.

Reddy, P. L. 2010. Teachers and Parents' Opinion on English Medium and CBSE Syllabus AP Govt. Schools. Edutracks. Vol. 10-No. 2. pp. 27-33.

Ruth, C. C., M. A. Patricia and J. Crawford. June 2013. Teaching, Learning and Assessment Report Prepared for the Education Quality and Accountability Office (EQAO), pp. 1-30.

Saavedra A. R., and V. D. Opfer, RAND Corporation. April, 2012. Teaching and Learning 21st Century Skills: Lessons from the Learning Sciences by Asia Society, partnership for Global Learning.

Summary, Education for all, the Quality Imperative. Published in 2004 by the United Nations Educational, Scientific and Cultural Organization UNESCO (2004).

Jonathan Cohen, Elizabeth M. Mccabe, Nicholas M. Michelli., 2009. School Climate: Research, Policy, Practice, and Teacher Education. Published in Teachers College Record. vol. 111, Number 1, January 2009, pp. 180-213.

Uys, M., J. V. D. Walt, R. V. D. Berg and S. Botha. 2007. English medium of instruction: a situation analysis. *South African Journal of Education.* vol 27(1), pp. 69–82.

Teachers' Guide to Assessment. ACT Government, Education and Training (2011)

The Thoughtful Classroom Teacher Effectiveness Framework. Teacher Self-Assessment Guide, 2011, Silver Strong and Associates.

Effectiveness of In-service Programme on ICT for Primary Teachers Run by MCD Science Centres

Zafar Iqbal*

Abstract

To empower primary teachers of MCD Schools with ICT skills, MCD initiated 'Shiksha' project in collaboration with Microsoft Corporation (India) Ltd. The present study examines the effectiveness of training in ICT to the teachers in MCD Schools. The study was biphasic; a purposive sample of 400 trained teachers were chosen for comprehensive survey study in the first phase. The tools Questionnaire, Observation Schedule and Interview Schedule, were developed. In second phase, ten schools were observed and a randomly selected sample of twenty male / female teachers from the total sample of the first phase was interviewed. Even though, the results were not exciting, still it was a challenge for stakeholders to train them on ICT appropriately.

Keywords: Information Communication Technologies, In-service Training, Availability of ICT

Introduction

Integrating technologies in teaching learning process, is the need of the hour as modern technologies are being adopted in teaching learning to bring excellence in the classroom processes. However, this requires teachers to undergo continuous professional development on ICT. One such professional development programme of in-service teachers teaching in Municipal Corporation of Delhi (MCD) Schools had been organised. MCD is an autonomous civic agency which caters a variety of services through its various departments. Under the Department of Education (Primary), primary education is an obligatory function under the Delhi Municipal Corporation Act, 1957. Before trifurcation, MCD was running 1819 Primary Schools and about 8.89 lakhs students were studying in these

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schools, apart from recognised Primary Schools run by voluntary organisations within MCD area (CALP-MCD, 2006).

For the purpose of quality education in primary schools Municipal Corporation of Delhi initiated 'Sharda' Project for Computer Aided Learning Program (CALP) in 2004. Under the Project 'Sharada', Department of Primary Education, MCD established Computer Aided Learning Centres (CAL-Cs) in July 2004 in 1785 schools, except those 34 schools which had a total enrolment below 50 students. These centres had the facility of computer lab with related basic infrastructure and educational packages, and CDs etc.

Further, in order to empower primary teachers of MCD Schools with ICT skills, MCD initiated '*Shiksha*' project in collaboration with the Microsoft Corporation (India) in 2004. Project *Shiksha* is a twelve days in-service training program on ICT named 'Partners in Learning' at its six Science Centres in Delhi. The training was given through the ICT trainers of Microsoft Corporation (India) Ltd (CALP-MCD, 2006). The present study was undertaken to evaluate this training from the perspective of the teachers partaking of it.

While under the Project '*Shiksha*' of Partners in Learning of Microsoft India Ltd.', 12,600 in-service primary teachers of schools in MCD had been trained in twelve days under in-service training program on ICT including 1575 teachers of the central zone, who were trained in 116 batches from 7 November 2004 to 22 October 2010. It was the first time for MCD, where training of computer was given to in-service teachers at six science centers situated at different locations in the NCT-Delhi. Since, the programme had been running for almost four years, a need was felt to study the quality of the in-service training programme, and also how well equipped the teachers felt about themselves to integrate ICT in their regular classroom transactions. Hence, the investigator attempted to study the effectiveness of in-service training program on ICT run by MCD Science Centers through the perception of the in-service teachers, what they perceived about the training program and performance of the teachers on ICT.

Statement of the Problem

Primary Education Department of MCD took steps to give training in the use of ICT to all working primary teachers in these MCD Primary Schools and establishing CAL-Cs in schools as well as providing essential infrastructural supports regarding ICT.

Hence, the present study attempted to study the perceptions of primary teachers regarding in-service program on ICTs and effectiveness of this training, quantitatively and qualitatively.

Objectives of the Study

The objectives of the present study were:

- To study the effectiveness of the in-service programme of teachers on ICTs.
- To study the post performance of in-service teachers on ICTs after in-service training program.
- To study the ICTs related problems faced by in-service teachers in schools.

Research Questions

- How were the ICTs incorporated in the schools?
- What kind of training was given to the primary teachers for the incorporation of ICTs at Science centre in MCD?
- What was the level of satisfaction in the ICT trained primary teachers of MCD Schools?

Method

Sample

Out of the six Science Centers, a purposive sample of 400 teachers from 12,600 trained teachers was chosen for the comprehensive survey in the first phase. For in-depth study the investigator selected a random sample of twenty male and female teachers from the total sample of the first phase and ten MCD Schools from Central Zone were chosen for in-depth study.

Tools and Technique Used

The study was conducted in two phases containing quantitative and qualitative methods. In the first phase, the investigator visited four Science Centers: Sheikh Sarai, R.K. Puram, Shalimar Bagh, and Shakti Nagar, where the in-service training program on ICT was going on. There investigator discussed informally with different stake holders like Coordinator, Science Assistant Education Officers, Resource Persons of the Training and Trainees to understand ongoing in-service training. Afterwards, investigator got the permission to collect data by visiting the schools and concerned offices, whenever needed, during the study. The

investigator carried out the comprehensive survey and gathered data that was based on questionnaire.

The investigator developed a questionnaire in bilingual form, available in both Hindi and English, containing 59 questions including one open ended question to collect information. In the close ended questions, apart from the choices given, there was also a blank space given as an alternative when the other given choices didn't match the respondent's answers or wanted to add more information. Because the nature of the questionnaire was such that it had both close as well as open ended questions, the in-service teachers opted for either single choice or multiple choices or wrote their responses in the given blank spaces, so these required greater accuracy in scoring. All such information was qualitative in nature. Questionnaires were administered to the participants individually. The data had the richness and credibility from the stand point of the in-service trainees as well as accuracy, usefulness and completeness.

In the second phase, an observation schedule was used to observe the existing condition, function, capacity of all available ICTs, and involvement of teachers with available ICTs. The investigator attempted to observe content coverage of the different subjects taught in different classes from I to V by the use of these ICTs in teaching learning and other activities in the school by teachers. The Investigator along with at least one in-service trained teacher accessed where ICTs were placed, and its related records. 10 selected sample schools were observed for at least one or more than one hour.

An interview schedule with 14 questions related to three basic aspects such as teachers' preparedness for the use of ICTs, teachers' perception on ICTs in use of teaching-learning, and teachers' perception about the in-service training on ICTs were used to interview the teachers.

Results

Perceived Effectiveness of the Training

Selection of the resource person for the different topics was felt appropriate by most (88 per cent) of the trainees. Resource person's ability to create interest and motivate trainees for learning computer was reported satisfactory by 80.75 per cent of trainees. The communication skills of the resource person was found as very

good, good and average by 7, 26, and 49.25 per cent of the teachers, respectively. The level of interaction between the resource faculty and participants was found poor by 48 per cent trainees. However, level of competence of the resource person was rated differently as high, and moderate, by 7.75 and 70.75 per cent trainees, respectively. Although, most of the merits of the resource person were positive for a good in-service training but it was the level of interaction between the trainees and resource person that was found poor, which would affect training negatively. Thus resource person should have communication skills and competency to make training fruitful. Over all, perceived effectiveness of the material in terms of the quality and adequacy both were found appropriately good by 81 per cent and adequate by 86.75 per cent of the trainees. Overall, 69.75 per cent of the trainees were satisfied to a large extent or to some extent by content (main components and peripheral devices of computer, Ms-Word, Ms-Excel, Ms-PowerPoint, and browsing/surfing internet) coverage during the training program. While 66 per cent of the teachers felt result of upgrading their teaching skills as very little and 9.75 per cent felt no upgrading.

Table 1
Perceived effectiveness of the in-service computer training

S. No.	Item	Responses in Numbers (Percentage in Parenthesis)				
1.	Usefulness of In-Service Training Program	Useful	Useful to some extent	Very little useful	Not so useful	Any other, please specify
		36 **(9)**	74 **(18.5)**	125 **(31.25)**	165 **(41.25)**	0
2.	Satisfaction from In-Service Training Program	To a large extent	To some extent	Very little	Not at all satisfied	Any other, please specify
		2 **(0.5)**	60 **(15)**	147 **(36.75)**	191 **(47.75)**	0

In-service computer training was either not much useful or of no use at all for trainees as shown in Table 1. It is important to note that the in-service training was not found vital by the majority of trainees. It was found that trainees were not satisfied from this training: it was either 'not at all' or 'very little' for the trainees and both these category had the significant value of the 'not satisfied group'. It was found that the training given could not be applied by some of the teachers in their MCD schools. It was also reported that their schools had only 4-5 computers and those too were dysfunctional.

Teachers' Performance on ICTs

The teachers' overall performance on ICTs was examined by making the tetrad of this aspect pertaining to use of ICT training in schools, perceived effect of in-service training in real situations, ICT related problems faced by teachers in schools, and teachers' ICT performance in schools.

I.   Use of ICT Training in Schools

The computer training could be applied to school situation very effectively by 6.25 per cent, effectively by 23.25 per cent of the trainees whereas 24.25 per cent could use it very little and 46.25 per cent of trainees could not apply the computer training to school situation effectively.

II.   Perceived Effect of In-Service Computer Training in Real Situation

After completion of the in-service computer training, there were 71.25 per cent of the teachers, who used no computer or faced difficulty in using them in their teaching. There were 70.50 per cent teachers, who perceived that computer training could not be applied effectively or too little could be applied in their schools. There were 79 per cent of the teachers, who could not develop any material or software on computer or its usability is little if developed. Significantly, after doing in-service training, 51.75 per cent of the teachers perceived very little changes in themselves and 37.75 per cent perceived no changes. Thus, it may be inferred that in-service training was perceived as ineffective by quite a significant number of in-service teachers.

III.   ICT related Problems Faced by Teachers in Schools

In-service teachers also reported that problems were faced during replicating the computer training in schools as the facilities

available in the school were not sufficient to support teaching learning using ICTs and this problem was faced by the majority of teachers as shown in Table 2.

Table 2

ICT related problems faced by teachers in schools

S. No.	Item	Responses in Numbers (Percentage in Parenthesis)					
1.	Problems Faced as-	Computer training can not be applied in the teaching-learning due to its vagueness.	The cooperation of head-master and other colleagues was not available.	The facilities available in the school are not sufficient to support teaching learning with ICT.	An addit-ional burden	No problems	Any other, please specify
		55 **(13.75%)**	6 **(1.5%)**	281 **(70.25%)**	40 **(10%)**	18 **(4.5%)**	20** (5%)

i.	We are not using computer in teaching. (One Teacher)
ii.	Little knowledge of computer operation. (Four Teachers)
iii.	I never tried it in school. (One Teacher)
iv.	Very slow types of the computers are available in school. (Three Teachers)
v.	IT worked, but we could not. (Five Teachers)
vi.	Computers are dysfunctional. (Five Teachers)
vii.	We were trained on softwares were different from the installed softwares on school computers. (One Teacher)

The Trainees faced different kinds of problems such as problems related to computer hardware (11.5%) , software (6.25), and CDs provided (7.5%). The other problems reported were: besides, inadequate number of computers in the schools (34.25%), computers being not functional (51.25%) and no use of computers by teachers in their teaching (12%).

It can be inferred that mostly in-service teachers faced all kinds of problems related to ICTs in teaching and they perceived that the facilities available in schools were not sufficient to support teaching-learning with ICTs.

Table 3

ICT related problems managed by in-service teachers in schools

S. No.	Item	Responses in Numbers (Percentage)				
1.	Computer problems discussed with	Staff only	Friends and relatives	Consultant	No one	Any other, please specify
		144 **(36)**	70 **(17.5)**	30 **(7.5)**	197 **(49.25)**	26 **(6.5)***
2.	Managing problems of using computer in teaching	Manage by myself	Manage by department	Manage with help of staff members	I never use computer in my teaching-learning so no problem.	Any other, please specify
		62 **(15.5)**	35 **(8.75)**	135 **(33.75)**	144 **(36)**	36 **(9)***

*Trainees open comments were found almost same in the both situations S. No. 1 and 2.

   i.   Computer teacher was in school for the use of computer. (23 Teachers)
   ii.   I could not say with whom she (IT) discussed. (2 Teachers)
   iii.   I discuss my problems with my children. (2 Teachers)
   iv.   Computers are not functional. (4 Teachers)
   v.   I could not use computer in my teaching because there were no systematic computer lab. (2 Teachers)
   vi.   Department provided IT, so they did not use the computers. (23 Teachers)
   vii.   I never used school computers. (4 Teachers)
   viii.   I gathered information from their home computer, got the prints and used them in the classroom teaching. (2 Teachers)

Table 3 shows that a few teachers discussed their problems with children and for some teachers computers were not functional. There were also the teachers who said that they could not use computer in their teaching because there were no computer lab as well as equipments in their schools. Teachers also said that the Department provided IT teachers to schools so they did not use the computers. However, some teachers gathered information from their home computer, got the prints and used them in the classroom teaching. It was found that 15 per cent of the teachers who underwent this training had knowledge of computers before the

training began and they already knew how to operate computers. These were the in-service teachers who influenced and carried over the effect positively on other aspects of the study because they reflected their prior knowledge of computer in every aspect of the study.

During the interview when the teachers were asked as to why they did not use computers in schools, the responses given were like the lessons stored in computers were outdated and irrelevant, and lessons were not participatory and students only had to watch them. Other teachers wanted audio-visual aids, smart boards and good sound system and high end computers one for each student. Some teachers said that computer labs were ill equipped and over crowded with as many as four students per machine; thus no one was able to use it effectively.

Thus, there were computer related problems in schools regarding improper training of the teachers, inappropriate number of computers, dysfunctional computers, hardwares, softwares, and educational packages. Besides, in-service teachers were not able to manage the problems properly as shown in Table 3.

IV. Teachers' Performance on ICTs in Schools

It was found that ICT tools (MsWord, MsExcel, MsPowerPoint, Paint and Logo) were never used by 74.5 per cent of those trainees. In-service teachers (45.75 per cent) rarely used Computer for effective teaching-learning and 28 per cent used computers only as per the need of syllabus. While there were 2 per cent trainees who said that they had no requirement of the computer because they were good in teaching, 20.5 per cent of the trainees gave one or the other reasons for not using computers. Educational CDs provided by Department, were used in teaching by 33.75 per cent teachers as per the need of the syllabus. For 4.75 per cent of trainees, these CDs were not required because they themselves were good in teaching, while the 45.25 per cent of the trainees rarely use CDs. Majority of the teachers (61 per cent) said that the outsourced computer teachers taught Classes III, IV and V. The content of the educational CDs/DVDs fulfilled no requirement of the syllabus for 39 per cent of the trainees and it was very little for 35.75 per cent trainees.

Ten schools were observed for ten days after six months of completion of the first phase of the study. The 16 hours observation showed that the physical condition of lab was very good in two schools, good in two schools, average in one school, poor in one

school and very poor in four schools but only one CAL lab was found functional including its other peripheral devices such as key board, mouse, speakers, head phone and printer (EPSON, 132 Columns). Almost all observed CAL lab had same number of terminals (five computers for users having the configuration of Computer HCL/HP Intel® Celeron® 1.8 GHz) for 20 users and every terminal was used by four users one by one only when these were functional. These terminals had the Red Hat (Linux) operating system and softwares like flash player. Paint, calculator, computer games, voice recorder, word processor, presentation softwares and CD player despite of every terminal was already installed all forty three educational packages of *Azim Premji's* Foundation, and *Rajiv Gandhi Shiksha Mission* (RGSM) provided by MCD under the Sharda Project. But these provided infrastructures had become futile due to the computer lab being dysfunctional; however, it was functional only in one school. But teachers did not access it because they were found dependent on outsourced IT faculty who was not available at the time of observation.

These schools also had a separate functional computer (HP Pro 3090, 3GHZ, RAM 2GB, Hard Disk 500 GB) maintained by the department that was used for recording biometric attendance of the teachers. These computers have not been used since July 2011 neither for administrative purposes nor in teaching-learning activities.

In seven schools smart devices provided under the *Sarva Shiksha Abhiyaan* by NCT Delhi that is a 29 colour TV attached with the computer were available. These computers were loaded or installed with educational packages (e.g., Nursery Rhymes, Lessons for Moral Educations, Health and Hygiene, Hindi lessons on Comprehensions, English lessons on Comprehensions, Grammar and Exercise, Mathematics including number concepts such as addition, subtractions, multiplications, divisions, fractions and geometry. Natural science that includes nature in our surroundings, experiments related to natural phenomena and Social Studies comprising Indian and world maps, cities of India, Indian cultures and festivals, Indian political leaderships and so on). These contents were tailor-made as per the need of Classes I to VIII (i.e., elementary school level). Through TV attached, the students were able to learn necessary functions like power point, Microsoft word etc., with clarity. There were six schools which had operative systems but were poorly maintained and were used in

teaching-learning process. The Investigator observed that on this device, the installed educational software runs only for Classes III and V and students of these programmes were mere spectators, and no type of interaction was found between learners and the teachers.

Although all schools were provided Tata Photon Dongle for the purpose of biometric attendance of the teachers in schools, it was found in one school where some teachers were using internet facility for their personal sake and not for the purpose it was provided for. It was found that there were no records maintained of the CAL Lab regarding teaching learning or uses of any ICTs in schools.

There was only one school that had the facility of language lab which included perfect independent communication devices, centrally controlled monitor to evaluate every individual and give them proper feedback. It had a computer assembled with central big size monitor and independent learner's terminals (user's computer) and its communication peripheral devices. At a time almost fifty learners could use this facility without any disturbance and could be easily controlled by a single teacher. It was found very interesting for the students, but it was also used with the help of an out sourced IT instructor and no teachers' involvement was observed. Further, all observed schools were found using Radio in an Interactive Radio Instruction (IRI) on 105.6 MHz (*Gyanvani*-IGNOU: FM Channel) with students at 11:00 AM to 11:30 AM (first shift schools) and 2:00 PM to 2:30 PM (second shift schools) for Classes of I and II, while 11:30 AM to 12:00 AM (first shift schools) and 2:30 to 3:00 PM (second shift schools) for Classes of III and IV. All students of the prescribed classes, as per schedule, were seated in the queues along with the teachers, regularly. Students were only passive listeners and no interaction was found between the students and teachers under the controlled atmosphere in a classroom. Almost similar pattern was observed in other schools.

The in-service teachers were asked how did they access the ICTs they required for teaching. Some teachers said that currently there were no ICT tools in school except radio. And with the absence of the IT teacher (who was usually out sourced), no one used the computer and it was gathering dust. Some other teachers said that some ICTs were available in schools and others they brought from home, as and when required. The teachers mainly talked of ICTs in terms of CDs. One teacher reported in order to prepare the

Independence Day programme the concerned teacher brought the CD and helped the students practice.

Teachers stated that the Government had invested money in such programs and had sent computers in schools, but the teachers felt that it would have been useful if every teacher would have undergone 100 days in-service training instead of twelve days for the optimum use of computer. Other teachers felt that learning through computer will badly impact health specially the sight rather than learning by doing. Children were also deviating from outdoor activities and were keener to play on computer.

Teachers also said that the programme loaded on the CAL lab were very interesting to some extent. Effectiveness would increase, when play way method to teach the students will be used. They would take interest and its effects will be long lasting. Teachers should be more motivated and should be encouraged to improve themselves. Extra burden should be decreased.

During interview, the feedback from teachers about the use of educational CDs of different subjects distributed in schools was collected. Teachers reported that these CDs were enriching and informative to the students. Some of these CDs were provided by the Azim Premji Foundation. In sumt may be inferred from all these collected evidences and interviews that in-service teachers could not properly integrate ICTs in teaching- learning properly

Issues Raised by Trainees about the In-service Training Programme

The trainees were asked to describe their perceived problems during in-service training program. About 53 per cent of in-service teachers raised various issues and also gave suggestions.

There were some in-service teachers who wanted that ICT training should be organised frequently to keep them updated about the new techniques. An opportunity should be given to the teachers to practice during training and its duration should also be extended. Computers must be functional at schools so as to enable further practice. Resource persons equipped with all essential skills should give training to in-service teachers. In order to achieve effectiveness in teaching, it should be made mandatory for teachers to complete the training. There were also teachers who said that in-service training programme was satisfactory but teachers will not get the chance to use it in the schools due to nonviable condition

of computer lab. Also, some teachers stated that they needed more time and knowledge for using internet and about hardware. Few teachers were willing for further training programme on ICTs.

A few teachers were not in favour of the ICT Training programme because they opined that classroom teaching and computer training both cannot go simultaneously. They also said that school computers had very few features, while some pointed out electricity problems and cleanliness problems in schools. Teachers also reported having difficulty in understanding topics in computer training programme.

These problems were further probed during interview with the teachers. Regarding the problems they faced during in-service computer training, teachers said that the duration was too short to go beyond the basic operations of computer. Since for some teachers it was a first exposure to the machines, 12 days were highly inadequate. By the end of 12 days they could handle the keyboard, mouse, MS-word only since the duration was short. The teachers said that the content was hastily covered, they did not get sufficient time to practice and they felt they had already forgotten the content.

Almost all teachers wanted that computers need to be provided in the school so that whatever they have learnt in the training could be practiced in schools. Some teachers suggested that even though their school was well equipped, they needed internet facilities so that teachers may access blogs, slide shows, and YouTube contents relevant to their subjects.

Some teachers said that it was the first attempt by the MCD. A pair of teachers shared one computer. Every computer did not have the internet facility at the Centre. They were not allotted permanent seat, first day if someone was sitting at the place, next day he/she would be on the next place. That was also the problem because if the first day, they said, they prepared or worked anything on that computer, that could not be transferred to the other computer. Some teachers cited personal problems in travelling long distances to the Science Centre. Others lacked guidance regarding computer usage in their schools.

Teachers opined that such trainings were required in today's computer's era for various purposes such as admission, record maintenance, and saving paper and time. Teaching will be only effective when new teaching system will be developed through the computer. Good infrastructure of computer should be provided

to the schools. It should be according to the syllabus and made us practice more. Teachers also wanted follow up and refresher training programmes.

Conclusions

It was a first initiative of in-service training on ICT in MCD run schools but it was quite unsuccessful because even after training, the teachers were not using ICTs in their schools. Trainees were not satisfied due to lack of practice at science centre and at school also because they were using computer at science centre in sharing mode (two teachers per computer and they were not regular partner in entire training) while they had no same software in schools at the same time. In-service teachers were not satisfied with the resource person in terms of level of interaction between them that was poor and this could not upgrade their teaching skills in the use of ICTs. This factor of the computer training, made it very little useful for trainees and was one of the causes of their dissatisfaction. Therefore in-service training was perceived as ineffective.

Also, the use of ICTs in schools was dependent only on out sourced IT teacher rather than in-service teachers. It indicated that monitoring and evaluation of the both MCD projects – *Sharda and Shiksha* were not done effectively (Iqbal and Nadeem, 2013).

Educational Implications

The main finding of the study was that within the context of an in-service training program on ICTs run by MCD, it was a beginning but was quite unsuccessful in reflecting teachers' training in the schools because even after undergoing the training teachers were not using ICTs in their schools. It may give the feedback in substantial use of ICTs in teaching. This study has a number of implications for practice in in-service training program on ICT.

First, it showed that perceived experiences of the in-service teachers, and problems faced by the teachers at the school after the training in using of ICT in their teaching could be key factors which were being compromised and this situation affected negatively in-service training program on ICT. This study may help stake holders in improving the results of the in-service training program in terms of better use of ICT in their teaching learning by the in-service teachers.

Second, this study can help the stake holders to plan a good training program on ICTs as per the issues raised by the

teachers who reported their concerns. Third, it was reported by the successful trainees, who perceived that their students were very interested in learning when they were taught with the use of ICTs in their classroom process. Therefore, this study also helps the teachers to make them understand the learner's interest that may be good cause of their quality teaching-learning.

Fourth, it helps the stake holders regarding providing only those softwares which are relevant to the content of the syllabus, up to date and culturally responsive to the students of the MCD schools.

Suggestions for Future Research

The present study attempted to investigate the effectiveness of in-service training program on ICT as it was perceived by the trainees. However, the effectiveness of training program have multiple aspects; thus research scholars and institutions may indeed carry out further studies on every aspect of the study separately through the various research methods like program evaluation, case study, descriptive study, correlation study, study based on factorial analysis, experimental study, and quasi experimental study.

References

HTTP://WWW.AZIMPREMJIFOUNDATION.ORG/HTML/CALP.HTM Retrieved June 13, 2007, from

CALP. 2006. *Book of Guidelines for Teachers to Use CDs*. Department of Education of Municipal Corporation of Delhi and Azeem Prem ji Foundation New Delhi: Planning, Research and Extension, MCD.

CALTOONZ E-BOOK. 2006. (Its the title) Directorate of Education, NCT Delhi,

HTTP://EDUDEL.NIC.IN/CALTOONZ/CALTOONZ_BOOK/WF.PDF. Retrieved on 6 January 2010

IQBAL, Z., S. F. NADEEM. 2013. *An Evaluative Study of In-service Programme on ICT for Primary Teachers Run by MCD Science Centers.* Unpublished Doctoral Dissertation, Department of Teacher Training and Non Formal Education (IASE), Faculty of Education, Jamia Millia Islamia, New Delhi.

MPIL. 2004. *Microsoft-Partners in lLearning.* Retrieved, August 15, 2007, from http://www.microsoft.com/india/msindia/ msindia_up_partnerslearning.aspx

MPS. 2004. Microsoft's Project shiksha. Retrieved August 30, 2007, from http://www.microsoft.com/india/education/pil/shiksha

Dual Enrolment in Elementary Schools of Jharkhand

Chandra B.P. Singh*

Abstract

Dual enrolment refers to double entry of the same student in two separate school enrolment registers. The study was conducted in a tribal district of Jharkhand state. It was a multi-layered sample covering both the government as well as the private unrecognised schools of one cluster selected on the basis of U-DISE report (2014). 23 schools (15 governments and 8 private schools) were taken into consideration for the study. Altogether 166 dual enrolments out of 4743 enrolments were evident in the admission register of the government schools constituting about 3.5 per cent inflation in the total enrolment. Only 95 cases of dual enrolments out of 955 enrolments were recorded in the unrecognised private schools sharing about 10 per cent inflation in the total admission. Primary schools experienced more cases of dual enrolment followed by middle schools. Highest concentration of dual enrolment was recorded in Class IV (7.64) followed by Class III (7.29). Minimum cases were observed in Class VIII (2.47) and Class VII (3.80). An overall per cent of dual enrolment was 5.42 substantiating the inflation in the volume of enrolment of the government schools. The study discussed possible dynamics of dual enrolment.

Introduction

Of late, elementary schools under *Sarva Shiksha Abhiyan* (SSA) have witnessed a phenomenon of dual enrolment. When a student

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gets enrolled in two separate schools to take advantage of the government-sponsored schemes, the phenomenon is known as dual enrolment. A section of the society grinds the education system to take twin advantages of enrolment programme causing dual enrolment in the government schools and challenging the effectiveness of on-going quality improvement programme. It has resulted in a doubt over the community involvement in attendance improvement measures and has also posed a threat on the internal efficiency of the government schools. It may be either in two separate government schools, primary to primary and primary to middle or the government schools (primary and middle) to private schools. Students get double benefits in both cases in terms of dress, textbooks, scholarship, etc. They get incentives as well as better inputs of learning, if enrolled separately in the government as well as the private schools. Further, they attend private schools regularly while ignoring the government schools in the form of temporary absence. A notional presence in the government schools for getting other facilities remains on the record. The government schools accommodate some fake enrolments to maintain the pupil-teacher ratio (PTR) as well as deployment of para teaching forces without any strain.

A snap shot study conducted by the District Level Office (DLO) of SSA at Dumka (Jharkhand) in 2008 captured about 12–15 per cent cases of dual enrolment in the government elementary schools. By the same token, Bihar Education Project Council, Patna (2007) noted about 8 per cent cases of enrolment in elementary schools of Kisanganj district. Many students of Madarsa (minority schools) were enrolled in the government schools. Similar trend was noted in two separate studies funded by Ministry of Human Resource Development, New Delhi (2012–13) and Bihar Education Project Council, Patna (2013–14).

Under the *Right of Children to Free and Compusory Education Act, 2009* (RTE) no documents other than birth certificate is required for admission in elementary schools. No child shall be denied admission in a school for lack of age proof. It is more convenient to cushion the education system and manage the required papers for admission. Even teachers facilitate the process of cushioning. It is a bidirectional processes, catering to the needs of both the community and teachers. In some cases, it is difficult to trace even temporary absentees as teachers manage their attendance in the register. Parents of such temporary absentees

make functional linkage to the teachers for getting benefits from the schools. This tacit understanding between the parents and teachers need not demand any justification. The social psychology of schools and some local dynamics of dual enrolment need to be probed. In case the ground reality is captured through an empirical study, the dilution in enrolment figure can be properly estimated. A good number of researches on students' attendance have been conducted across state (MHRD, 2012–13). By the same token, some prominent reasons of students' absenteeism have come into the orbit of discussion (BEPC, 2013–14). The subliminal threshold of dual enrolment remains unnoticed because of some local reasons. Remarkably, a good number of the unrecognised private schools have made their presence felt even in rural area, offering semi-english medium teaching. They are professional in delivering learning contents which is usually not found in the government schools. Their positioning in selling the education as commodity has attracted the society at large. The study was designed to capture some ground realities of dual enrolment. A few issues of dual enrolment need to be addressed.

- How does dual enrolment work in the schooling system?
- Can the volume of dual enrolment be measured?
- Which factors are accountable for dual enrolment?

Design of Study

The Setting and Coverage

The study was conducted in a tribal district of Jharkhand state. It was a multi-layered sample covering both the government as well as private unrecognised schools of one cluster selected on the basis of the Unified-District Information of School Education (U-DISE) report (2014). Altogether 23 schools were taken into consideration for the study. Of them, 15 were the government schools (9 primary and 6 middle) and the remaining 8 were the unrecognised private schools. All headmasters/principals (n=23) were selected for the study. Thus, 25 teachers, 114 parents and 115 dual enrolled children across grades participated in the study.

Tools Used

A set of interview schedules separately prepared for headmaster/principal, teacher, parents, and students were employed in the study.

Field Strategy

It was decided to identify grade-wise students who were absent for the last one month from both the government and private schools. Their names and other details were taken from the admission record and attendance register. A few absentees attended the classes once or twice in a month. This was not a consistent pattern across school. After completion the first phase, it was decided to approach other schools (either the public or private) in the adjacent feeder area to verify whether the same student was enrolled. Presumption was that she/he could be enrolled either in the same grade or different grade in another school. In some cases a slight variation in the name of the student was observed without altering father's name or home address. A few cases of manipulation (overwriting, erasing, leaving dots, etc.) in the attendance register were also noted. All such suspicious cases of dual enrolment were recorded for further investigation. Parents and teachers were interviewed with the help of interview schedules. There could be at least twin movements for dual enrolment-primary to primary schools and middle to middle schools. School-wise there could be unidirectional movement-government to government schools and government to private schools. The study collected grade-wise dual enrolment figures of the sampled schools. The data was collected in the middle of 2015 with the help of a set of investigators.

Results

Volume of Absentees

Altogether 4743 enrolments from the government schools (n-15) were on record. Of them, 836 were found absent for the last one month. Grade-wise percentage of absentees is displayed in Table 1. With the increase in grade lower volume of absentee was recorded. About 17 per cent students across grades were found absent. As compared to the government Schools, absentees in the private schools (n=8) were only 4 per cent (absolute figure 38 out of 955). About 27 per cent students were absent in Grade II (highest). These figures were further analysed to find out the phenomenon of dual enrolment.
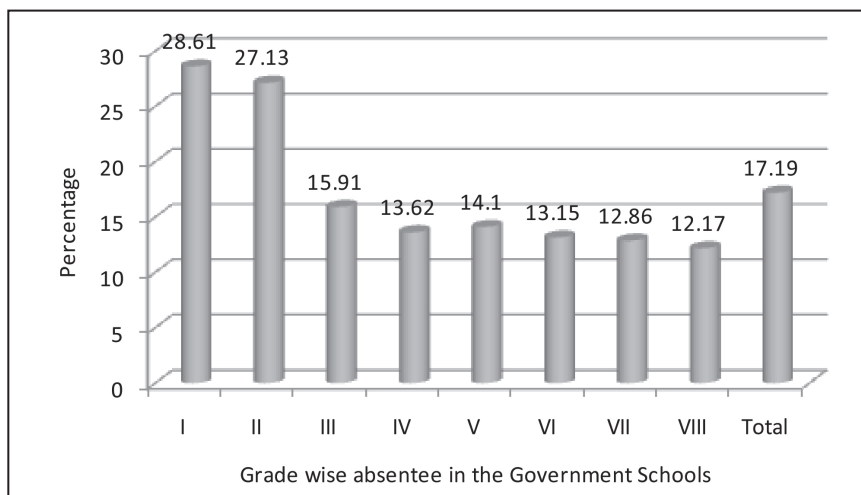
Table 1

Grade wise absentee in the government schools

Grade	Government Schools (n=15)		
	Enrolment	Absentees	Percentage
I	671	192	28.61

II	645	175	27.13
III	616	98	15.91
IV	602	82	13.62
V	553	78	14.10
VI	578	76	13.15
VII	552	71	12.86
VIII	526	64	12.17
Total	4743	836	17.19

Note: *Absentee for the last one month; a few sporadic attendance was visible; it could also be considered under absenteeism.*

Figure 1

Dual Enrolment within the Government and Private Schools

Table 2 shows two sets of dual enrolment: the government schools and private schools. There could be a movement in two direction-primary to primary schools and middle to middle schools. Altogether 166 dual enrolments out of 4743 were evident in the admission register of the government schools constituting about 3.5 per cent inflation in the total enrolment. At the both primary (84) and middle (82) schools levels, the number of dual enrolment was almost same. Only 95 cases of dual enrolments, out of 955, were recorded in the unrecognised private schools sharing about 10 per cent inflation in the total admission. The study also witnessed evidences of dual enrolment in the private schools. Students

enrolled in the government schools also moved to the unrecognised private schools for some reasons. They were admitted in all grades of the unrecognised schools. A large chunk of them (76) were enrolled at the primary level and the remaining (19) at the middle level. About 11.48 per cent cases of dual enrolment at the primary level and 6.48 per cent cases at the middle level were noted in the private unrecognised schools.

Table 2

Grade wise dual enrolment within the government schools and government to private schools

| Grade	Primary to primary (govt. to govt.)	Middle to middle (govt. to govt.)	Total enrol-ment (4743)	Primary to primary (govt. to private) total enrolment-662	Middle to middle (govt. to private) total enrolment-293	Total enrol-ment (955)
I	17	7	24	11	-	11
II	22	8	30	17	-	17
III	14	11	25	18	-	18
IV	19	9	28	18	-	18
V	10	8	18	12	-	12
VI	-	18	18	-	8	8
VII	-	14	14	-	7	7
VIII	-	9	9	-	4	4
Total	82	84	166	76	19	95

Note : *P = primary, M = middle*

Grade wise Enrolment of Dual Enrolment

The study attempted to map out the grade-wise dual enrolment. It included the movement of students both in the government as well as private schools. Grade-wise dual enrolment cases were calculated from the total enrolment of the government schools. Table 3 displays the pattern of dual enrolment. Highest concentration of dual enrolment was recorded in Grade IV (7.64), followed by Grade III (7.29). Minimum cases were observed in Grade VIII (2.47) and Grade VII (3.80). An overall per cent of dual enrolment was 5.42 substantiating the inflation in the volume of enrolment of the government schools.

Table 3

Grade wise percentage of dual enrolment

Grade	Total Enrolment in Government Schools	Dual Enrolment in %	
		Both in the Govt. and Private Schools	
		Total Dual Enrolment (absolute fig.)	%
I	671	35	5.22
II	645	47	7.29
III	616	43	6.98
IV	602	46	7.64
V	553	30	5.42
VI	578	26	4.50
VII	552	21	3.80
VIII	526	13	2.47
Total	4743	261	5.42
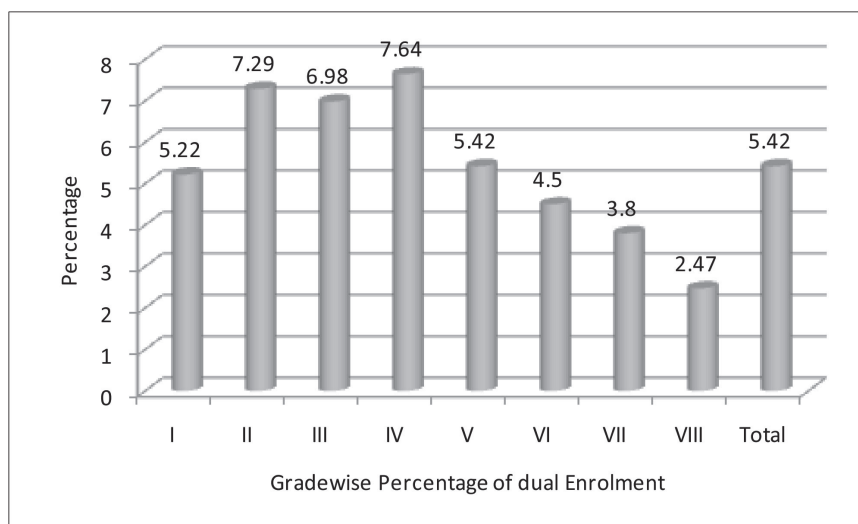
Figure 2

Discussion

The study attempted to estimate grade-wise volume of dual enrolment in proportion to admission and absentees. In the

government schools about 17 per cent cases of absentees were on record as compared to the private schools (4 per cent). About 4 per cent cases of dual enrolment were noted in the government schools. When added to the cases of private schools it contributed about 5.42 per cent to the total enrolment. Primary schools experienced more cases of dual enrolment followed by middle schools. The analysis further revealed that dual enrolment was more evident in Grade IV and Grade III of the government schools. At the terminal point of elementary education the volume of dual enrolment got reduced. How does the dual enrolment work in the elementary school system? Why had highest concentration of dual enrolment in Grade IV and Grade III? Was it a case of simply extraction of incentives provided by the State Government or some other motives that led to dual enrolment? Had some schools better teaching which attracted students for admission? Can this practice be checked without violating the spirit of RTE Act, 2010? The study attempted to address such issues.

Teachers and community are said to be important stakeholders of the school management programme. The community is expected to ensure both enrolment and attendance of students. At the same time, teachers are instrumental to make the schooling system live. Enrolment drive, demand for parateachers, teaching-aids, incentives to students and other academic and non-academic exercises are to be managed by the teachers. In many cases, both the community and teachers breed the phenomenon of dual enrolment. Of late, the distance and timing of the school does not matter. Students can be enrolled anywhere beyond the feeder area. In Jharkhand all schools had to follow the same timing. Hence, hardly any space to attend two schools at the same time was possible. A sudden upsurge in the percentage of attendance (83 per cent which was more than the national average-76 per cent and 78 per cent for primary and upper primary stage respectively) was noted in Jharkhand. The State Government implemented quality mid-day meal thrice in a week under Mid Day Meal programme. Despite 69 per cent teachers admitted that it did not improve the quality of education. Students showed their inclination to the quality meal instead of contents of learning. Even 57 per cent teachers admitted about the better quality of teaching in private schools. Surprisingly, 32 per cent teachers of the government schools suggested the parents for admission in private schools. They (28 per cent) advised parents to get their ward admitted in a

nearby school for some other reasons. The community was equally answerable to it. Parents (56 per cent) calculated some intrinsic benefits of dual enrolment in terms of getting incentives already defined by the State Government. It was to note that other than scholarship all other incentives for all grades in Jharkhand were equivalent. Dual enrolment ensured double scholarship and other incentives. The community took advantages of various schemes by admitting their ward in two government schools. Dual enrolment was also observed in the unrecognised private schools resulting in twin advantages of incentives provided by the State Government and content of learning from the other sources. It was obvious from the study that incentives and scholarship were not sole reasons of dual enrolment. Better teaching either in the government or private schools attributed to dual enrolment. Forty seven per cent parents explained the reasons of dual enrolment to better quality of teaching and denied twin advantages of incentives and scholarship from the other schools. Another question of highest concentration of dual enrolment in Grade IV could be answered by the cross-examination of the parents. They adopted pro-active strategy to get their ward admitted in Navodaya Vidyalaya. They were looking for better teaching facilities and hence, moved to either the government or private schools where quality teaching was ensured. In many cases they shifted to another feeder area for admission and managed to extract incentives from two different schools. Remarkably parents or guardians did not accept the reality despite substantive evidences of dual enrolment shown to them. They flatly denied it. In a few cases, they admitted it with an assurance from the investigators that it would not be disclosed to anyone. Teachers (77 per cent) and headmasters (86 per cent) showed ignorance of it. In a few cases (about 20 per cent) they admitted children in the schools under the local pressure or a fear of threat. About 8 per cent teachers did the same under the influence of personalised relationships. By and large, teachers attributed it to the community and the community had a fair logic of social comparison. The unfair game kept running without any strain.

When delivery mechanism is not satisfactory and classroom transaction non-interactive, students are bound to stay away from the school. They find some alternative arrangement. Private schools cater to their needs by offering the differentiated instructional method of teaching. Their delivery mechanisms and inputs of learning often attract students to stay in the schools. Despite the

fact that private schools are not equipped with the well-trained teaching forces, their management to take care of learners lends support to cognitive constructive approach to learning. At least they make students presentable and smart. The private schools serve as the community desires. An upsurge of missionary as well as prototype schools in tribal district of Jharkhand state reveals the fact that the government schools are not serious about ensuring the quality of teaching. Valence and vector of the government schools and private schools stand for two different approaches to schooling. On qualitative parameters the government schools compromise with the issues of inclusive education while the private schools track performance. Though classroom transaction in the private schools is far away from deep learning, at least their management style and the differentiated instructional teaching make the valence attractive. Vector represents direction by which the students move to attain the goals. Prevailing dual enrolment in the schooling system serves two different purposes. First, the volume of enrolment is increased and pupil-teacher ratio (PTR) maintained. It is a dividend to the government schools. And second, a particular section of the society is satisfied with private schools. Right now, there is no mechanism to curb this practice unless it is declared as serious offence and persons accountable for it are punished. The state government is now deriously considering to introduce Aadhar card for admission in the schools.

References

Bihar Education Project Council. 2007. *An Evaluation of Sankalp Strategy for out of School Children.* A Report on Dual Enrolment, Patna.

Bihar Education Project Council. 2013-14. *Tracking Children of Age Group 6–14 years.* An unpublished report, Patna.

District Level Office. 2008. *Dual Enrolment in Kathikund Block.* An Unpublished Report, Dumka, Jharkhand.

Ministry of Human Resource Development. 2012–13. *A Study on Student and Teacher Attendance.* An Unpublished Report, New Delhi.

Effectiveness of Feedback Strategies in Terms of Accuracy of Peer Assessment

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Abstract

The present research attempted to find out whether the accuracy of peer assessment of achievement can be improved by the use of various feedback strategies. This study was experimental in nature which concentrated on studying the effectiveness of feedback strategies in terms of accuracy of peer assessment of achievement and factors influencing it. The achievement scores of peer assessment were obtained with the help of Achievement test developed by the investigator. The tests used for measuring Intelligence were J.C. Raven's Standard Progressive Matrices and Raven's Advanced Progressive Matrices. Self-concept of student-teachers was assessed with the help of Self-Concept Inventory developed by Deo. It is known as Self Concept List (SCL). Two types of treatment were given. For Experimental Group-I Teacher Feedback and for Experimental Group-II Peer Feedback was used as treatment. No treatment was provided to the Control group. Accuracy of Peer Assessment of Achievement of student-teachers was found to be significantly affected by feedback strategy.

Introduction

Assessment is a dynamic and continuous process that includes the full range of procedures used to gain information about student's learning and the formation of value judgements concerning progression in learning. It may include both quantitative and qualitative descriptions. When classroom instruction is viewed in the light of intended learning objectives or goals, assessment becomes an integral part of the successful teaching-learning

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process. During teaching-learning process assessment is aimed at determining the extent to which the teaching-learning objectives have been achieved by the students. This is accomplished by using test and other types of techniques that are specifically designed to measure the intended learning outcomes. The purpose of assessment is to improve student's performance and not merely to audit it. Assessment should be learner centred and focused on student achievement in relation to the goals of a course, rather than being separate from learning. Assessment plays a central role in the instructional process.

Peer Assessment is one form of innovative or alternative assessment (Mowl, 1996; Mc Dowell, 1996). It is concerned with making judgment about students by other students on the basis of some characteristics. It may be carried out by an individual or by a group of individuals. Falchikov (1995) defines peer assessment as the process through which groups of individuals rate their peer. According to Donaldson and Topping (1996), the assessment may be formative or summative; it can be considered part of peer tutoring. In peer assessment students are taking responsibility of monitoring and making judgment about aspect of their own or peer's learning. Students can develop life-long evaluation skills both about their own work and thinking as well as others using peer assessment. They learn directly by constructively criticising their own and other's work in parallel.

Theoretically peer assessment is grounded in the constructivist's perspective and assumptions of active learning. Active learning refers to a situation where learners construct their own reality or at least interpret it based upon their perceptions of experiences. Teachers may use reflection to facilitate their own learning as well for facilitation of student's learning. According to Kottkamp (1990), reflection on action takes place after an activity and an analysis with the potential assistance of others. It brings about an understanding of practice and is a way practitioners may learn from their experiences.

It is a well known fact that learning is improved by detailed, positive and timely feedback on students work. In traditional and authoritative classroom environment teacher has been considered to be the sole source of feedback, while more permissive classroom ethos recognise the peer as well as the self as important source of feedback. Use of peer assessment by teachers, in part or full, however, depends upon the way peer assessment is actually

perceived by the teachers and how is it implemented in the classroom. Peer assessment can encourage a greater sense of involvement and responsibility and promote excellence, direct attention to skills and learning and provide increased feedback. It allows the students to gain experience by giving and receiving feedback and give them an opportunity to improve performance before it counts against their grades. In large part, students peer assessment works best when students share a comprehensive understanding of the assessment criteria and the characteristics of work illustrative of different levels of performance.

Researches investigated validity of Peer Assessment showed that the peer assessment in fifth year medical students who had to assess their peer as part of the examination,highly correlated with the final grade (r=0.99) and the staff assessment (r=0.93) (Burnett and Cavaye, 1980).Orpen (1982) research related to combined co and peer assessment showed no difference between lecturers and students in their average marks. Freeman (1995) study showed the quality of the presentations was rated very highly by staff and peers but no significant difference between the average staff ratings and average peer ratings. Langan (2005) found that in making use of criteria from the first grade and continuing to focus on them in subsequent classes helped students to have a clear understanding of the rating criteria. Papinczak et al. (2007) found that peer assessment is most effective when the criteria clearly understood by all students. Dannefer et al. (2007) in his experimental study, to develop and implement peer assessment as measure of professional competence of medical students, suggested that peer assessment can be introduce for formative purpose in an UG program that provides multiple opportunities to interact with and observe peers. Tsang and Tsai (2008) regarding the validity of on-line peer assessment in high schools indicated very high correlation between peer's and expert's marks. Related to different feedback sources and strategies in micro-teaching peer feedback was found equally effective to teacher's feedback, while a few researches showed it was not effective (Belt 1967, Guelcher, etal 1970, Passi 1976, Sharma 1997, Patrick, Franciana,C.J.1995). Roper (1977), Gaynor (1981), Clarina (1992) Clark (1993) on effect of student achievement level on ability to receive different forms of feedback indicated that students of different achievement level benefited with different forms of feedback.

Studies related to attitude towards different forms and strategies of Feedback, Pridemore and Klein (1995), Morison, et.

al (1995) for Computer Based Instructions showed the attitude towards different forms and strategies of feedback was positive while in few researches it was not positive. Students were showed clear and deepen understanding of course objectives by becoming critical evaluators of their peers. Students showed developed competencies and critical thinking skills as they realised and understand the assessment criteria in order to provide their peers with accurate feedback (Yamashiro and Johnson, 1997). Butler and Hodge (2001) studied the effect of peer assessment in High School Physical Education found the practical applications of peer assessment and its value for students. The results emphasised the importance of feedback in peer assessment. Race, et al (2005), Papinczak,et al (2007), Tsang and Tsai (2008) in there studies related to effect of peer assessment in feedback peer feedback was found to be effectively useful and showed positive effect of feedback in peer assessment while few researches showed at the particular stage of peer assessment the effect of feedback were not significant.

Cutler and Price (1995), Peters (1996), Cheng and Warren (1997), Hanrahan and Issacs (2001), Falchikov (2003), Bloxham and West (2004), Long,W.S.,et al (2004), Mclaughlin and Simpson (2004), Dochy et al (2005), Noonan, B. And Randy (2005) in their studies related to attitude towards peer assessment found that many students felt needof some guidance and training about assessment criteria in peer assessment behaviour before this could actually happen. Related to this aspect of peer assessment further study needed.

Therefore researches related to the finding out of Effective and Accurate Peer Assessment procedure are very important and needs to be conducted to evolve the most suitable Peer Assessment procedure according to the changing educational needs.

Operational Definitions of Keywords

Feedback Strategy: According to Good (1959), feedback is the process whereby the individuals gain information concerning the correctness of her/his previous responses in order that she/he can adjust her/his behaviour to compensate for errors. Strategy is used as a term referring to controlling or manipulating a series of events to produce modification of behaviour through learning. In this study feedback strategy means the process where information regarding

correct response and assessment criteria has been given to the student-teachers. Three Feedback strategies have been considered *viz.*, Teacher Feedback, Peer Feedback and No Feedback.

Accuracy: The absolute difference between the achievement scores awarded by the peers and by the Teacher.

Peer Assessment of Achievement: Assessment of achievement of student by other student or their peers.

The objectives of the study included the followings:

(i) To compare adjusted mean scores of accuracy of peer assessment of achievement (APAA) of student-teachers belonging to three feedback strategies by considering intelligence and self-concept as covariates.

(ii) To study the effect of treatment, gender and their interaction on APAA of students-teachers by considering intelligence and self-concept as covariates.

The hypotheses of the study are as follows:

(i) There is no significant difference among adjusted mean scores of Accuracy of Peer Assessment of Achievement (APAA) of student-teachers belonging to three feedback strategies by considering Intelligence and Self-concept as covariates.

(ii) There is no significant effect of Treatment, Gender and their interaction on APAA of student-teachers by considering Intelligence and Self-concept as covariates.

Method

The present experimental study was at P.G. Teacher Education Department, I.P. College, Bulandshahr which is affiliated to CCS University Meerut. The sample was selected with the help of purposive sampling technique. The sample comprised of 148 student-teachers, both male and female. The Experimental Group-I comprised of 58 student-teachers. Out of these 21 were male and 37 were female. The Experimental Group-II comprised of 53 student-teachers, out of them 31 and 22 were male and female respectively. The Control Group or Group-III consisted of 37 student-teachers, out of them 21 were male and 16 were female.

The sample was further classified on the basis of educational stream. Group-I included 28 students of science and 30 students of Arts stream. In Group-II 29 students of Science and 24 students

of Arts participated. In control Group 21 students of Science and 16 students of Arts were present. The population of the study constituted the student-teachers of B.Ed. level.

Tools

The achievement scores of peer assessment were obtained with the help of Achievement tests developed by the investigator. After the selection of subject Educational Psychology, syllabus of B.Ed. was studied thoroughly by investigator. Four units were selected for four achievement tests. All these tests were Criterion Referenced Written tests. Each test was subjective type of one hour's duration. For each achievement test Blue Print was prepared. Each test had five short Answer type and one Essay type item.

For this study, the **tools** used for measuring Intelligence were J.C. Raven's Standard Progressive Matrices and Raven's Advanced Progressive Matrices. Self-concept of student-teachers was assessed with the help of Self-Concept Inventory developed by Deo, It is known as Self Concept List (SCL).

Method of Data Collection

Two types of treatments were given. For Experimental group-I Teacher Feedback (X_1) and for Experimental group-II Peer Feedback (X_2) was used as treatment. No treatment was provided to the Control group.

After getting the permission from authorities of college, on the first day of treatment first achievement test was administered on the sample, which was subjective type test of one hour's duration. Next in the experimental group-I Feedback (X_1) was given by the researcher/teacher. This used an interactive feedback strategy, in which researcher and student-teachers actively participated in discussion about correct response and criteria of assessment. Teacher initiated discussion keeping in view the criteria of assessment and criterion responses. Students were allowed to discuss all the concepts related to test-questions.

In the experimental group-II Feedback (X_2) was given by peers. This treatment was student-oriented Feedback strategy, in which only student-teachers actively participated in discussion about correct responses and concepts related to test-questions. During this treatment teacher created situation wherein each student-teacher was free to analyse and discuss about the features of the criterion response on each question of test. In this manner students discussed criteria of assessment about all the questions

of test. No treatment was provided to control group. Control group followed the routine activities.

In the next stage, each student-teacher assessed the answer book of another peer selected on the random basis. The student pointed to the strong and weak points in their peer's responses. He or she gave suggestions to overcome the weak points and scored the answer. In this manner student-teachers assessed all the answers in answer script of their peer. Finally all answer scripts were scored by researcher (teacher). There were two set of scores of each student, one the peer score and other the teacher score. The difference between the two irrespective of sign was computed and termed as Accuracy of Peer Assessment. A similar procedure was followed for the subsequent three achievement test taken after a gap of 15 days. Treatment lasted for three months consisting of 65 effective days. The assessments of intervening variables were also done side by side during the period of 15 days.

Results and Interpretation

The first objective of the study was to compare the adjusted mean scores of accuracy of peer assessment of achievement of student-teachers belonging to three different feedback strategies by considering Intelligence and Self-concept as covariates. There were three treatment groups namely Teacher Feedback Group-I, Peer Feedback Group-II and No Feedback Group-III/Control group. The data were analysed with the help of One Way Analysis of Covariance (ANCOVA) by considering Intelligence and Self-concept as Covariates. The results of SPSS are given in Table 1.

Table 1

Summary of one way ANCOVA for APAA by considering intelligence and self-concept as covariates

Source of Variation	df	SSy.x	MSSy.x	Fy.x
Treatment	2	1098.58	549.29	28.18**
Error	144	2786.48	19.48	
Total	146			

**Significant at 0.01 level of significance

From Table 1, it can be observed that adjusted F value for treatment is 28.18 which is significant at 0.01 level of significance with

df=2/144. It indicates that the adjusted mean scores of APAA of student-teachers belonging to three treatment strategies namely Teacher Feedback, Peer Feedback and No Feedback differed significantly when intelligence and self-concept were considered as covariates. In the light of this the first null hypothesis was rejected.

Boneferroni Test was applied to analyse the pair-wise differences in mean scores of APAA of student-teachers belonging to three treatment groups, the results of which are given in Table 2

Table 2

Pair-wise comparison of accuracy of peer assessment of the three treatment groups by considering intelligence and self-concept as covariates

Treatment Pairs (J)		Mean Difference (I-J)	Standard Error
Peer Feedback Feedback	Teacher	3.59**	0.839
No Feedback	Teacher Feedback	6.97**	0.943
No Feedback	Peer Feedback	3.38**	0.959

** Significant at 0.01 level of significance

It can be observed from Table 2 that the teacher feedback group was superior in terms of accuracy of peer assessment of achievement. It should be recalled that higher the mean score of accuracy of peer assessment of achievement means less accuracy in terms of accuracy of peer assessment. Likewise, the Teacher Feedback Group was found. The peer feedback group was also superior to the no feedback/control group in terms of APAA of Student-teachers.

The **second objective** of the study was to study the effect of treatment, gender and their interaction on accuracy of peer assessment of achievement of student-teachers belonging to three feedback strategies by considering intelligence and self-concept as covariates. There were three levels of treatment namely teacher feedback, peer feedback and no feedback. On the basis of gender the subjects were divided into two groups, namely male and female. Thus the data were analysed with the help of 3×2 factorial design ANCOVA where intelligence and self-concept were considered as covariates using SPSS. The results are given in Table 3.

Table 3

Summary of 3×2 factorial design ANCOVA for accuracy of peer assessment of achievement of student-teachers by considering intelligence and self-concept as covariates

Source of Variation	df	SSy.x	MSSy.x	Fy.x
Treatment	2	1035.98	517.99	26.43**
Gender	1	7.62	7.62	0.38
Treatment × Gender	2	32.48	16.24	0.82
Error	141	2742.84	19.59	
Total	146			

**Significant at 0.01 level of significance

Table 3 shows that the adjusted mean scores of accuracy of peer assessment of achievement of student-teachers treated with teacher feedback, peer feedback and no feedback differed significantly In the light of this the null hypothesis that there is no significant effect of treatment on accuracy of peer assessment of achievement of student-teachers was rejected.

For analysing the pairwise difference in mean scores of APAA of student-teachers belonging to three treatment groups, Boneferroni test was applied, results of which are given below in Table 4.

Table 4

Pair-wise comparison of accuracy of peer assessment of the three treatment groups by considering intelligence and self-concept as covariates

Treatment Pairs (J)		Mean Difference (I-J)	Standard Error
Peer Feedback	Teacher Feedback	3.41**	0.86
No Feedback	Teacher Feedback	6.95**	0.96
No Feedback	Peer Feedback	3.53**	0.96

**Significant at 0.01 level of significance

It can be observed from Table 4 that in all three pairs of treatment groups the difference in mean scores of APAA of student-teachers is significant. The teacher feedback group was found to be superior in term of accuracy of peer assessment of achievement of student-teachers. Likewise, the teacher feedback group was also superior

to the no feedback/control group in terms of APAA of student-teachers. Further, the peer feedback group was superior to no feedback group as far as APAA of student-teachers is concerned.

There was no significant effect of Gender on APAA when intelligence and self-concept were considered as covariates.

No significant effect of interaction between treatment and gender on APAA of student-teachers was observed.

Conclusion and Educational Implication

The study leads to the following conclusions:

(i) Accuracy of peer assessment of achievement of student-teachers was found to be significantly affected by feedback strategy when the groups were equated on intelligence and self-concept. Student-teachers were most accurate in peer assessment of achievement when given teacher feedback as compared to the peer feedback or no feedback.

(ii) Gender and interaction between treatment and gender did not significantly influence the accuracy of peer assessment of Achievement of student-teachers respectively when groups were made equivalent on intelligence and self-concept.

The results of this study provide a perspective on how peer assessment can be implemented in teacher training institutions. In classrooms, teachers need help to develop the peer assessment skills for using peer assessment strategies with students. Rolheiser and Ross (2000) have emphasised the importance of training and professional development for teachers to help them better understand and implement effective practices that are important element of formative peer assessment practices. This study can help teacher-educators and teachers in this context.

References

Belt (1967) from Berihun, A., A. Tesera and D. Desta. 2006. Enhancing Active Learning Through Teacher's, Peer and Self Reflections in Selected Primary Schools in Ethopia. http://dwb.unl.edu/Edit/MB/Mason Bruning.html (downloaded on 21/03/2008)

Bloxham and West. 2004. http://www.scribd.com (downloaded on 5/04/2008)

Burnett and Cavaye. 1980. www.informaworld.com (downloaded on 22/03/2008)

Butler and Hodge. 2001. Effect of Peer Assessment in High School Physical Education. http://Pareonline.net (downloaded on 14/06/2007)

Cheng and Warren. 1997. www.informaworld.com (downloaded on 5/04/2008)

Clarina.1992. The Effect of Various Forms of Feedback. http://dwb.unl. edu/Edit/MB/Mason Bruning.html(downloaded on 21/03/2008)

Clark. 1993. The Study of Learning Differences Between Low Ability Learners Receiving Either Answer Until Correct or Inductive Feedback. http://dwb.unl.edu/Edit/MB/Mason Bruning.html(downloaded on 19/03/2008)

Cutler and Price. 1995. www.informaworld.com(downloaded on 5/04/2008)

Dannefer, E.F. et al. 2007. Peer Assessment of Professional Competence. http://www.ncbi.hlm.nih.gov/pubmed(downloaded on 21/03/2008)

Dochy, et al. 2005. Peer Assessment, www.informaworld.com(downloaded on 19/03/2008)

Donaldson and Topping. 1996. www.informaworld.com

Falchikov. 1995. http://www.scribd.com(downloaded on 5/04/2008)

Falchikov. 2003. http://www.scribd.com

Freeman. 1995. Guidelines for Group Assessment, Self-Assessment and Peer Assessment. http://www.62.gu.edu(downloaded on 4/08/2007)

Gaynor. 1981. http://dwb.unl.edu/Edit/MB/Mason Bruning.html (downloaded on 22/03/2008)

Guelcheret. al. 1970. http://Pareonline.net(downloaded on 6/04/2008)

Hanrahan and Issacs. 2001. http://www.scribd.com(downloaded on 22/03/2008)

Kottkamp. 1990. http://dwb.unl.edu/Edit/MB/Mason Bruning.html

Langan. 2005. http://www.scribd.com(downloaded on 6/04/2008)

Long, Esther, Dobbins. 2004. wwww.informaworld.com

Mc Dowell, (1996) in V. Prakash. Possible Methods of Student's Assessment. *Journal of Indian Education.* vol. xxviii, No. 2, Aug. 2002

Mc laughlin and Simpson. 2004. http://www.scribd.com(downloaded on 22/03/2008)

Merrill. 1987. The Effect of Attribute Isolation and Corrective Feedback on Student Learning. http://dwb.unl.edu/Edit/MB/Mason Bruning. html(downloaded on 19/03/2008)

Morison, et al. 1995. http://dwb.unl.edu/Edit/MB/Mason Bruning.html

Mowl (1996) in V. Prakash. Possible Methods of Student's Assessment. *Journal of Indian Education.* vol. xxviii, No. 2, Aug. 2002

Noonan, B. and C. Randy. 2005. Peer and self-assessment in High Schools. http://Pareonline.net(downloaded on 17/11/2008)

Orpen's. 1982. www.informaworld.com

Papinczak, et al. 2007. Peer Assessment in Problem Based Learning: A Qualitative Study, www.springerlink.com(downloaded on 21/03/2008)

Passi (1976) from A Dubey. Effectiveness of a Training Strategies for Developing Feedback giving and Feedback Receiving Competency in Relation to the Selected Organismic Variables of Student-teachers. Ph.D Thesis, Education, DAVV, Indore, 1988

Patrik, Francina, C.J. 1995. Effectiveness of Two Feedback Corrective Procedures Used in Mastery Learning Strategy in Terms of Students' Achievement and Retention in Chemistry. *Journal of Indian Education.* vol. xxxiii, No.1, May 2007.

Peters. 1996. www.informaworld.com

Pridemore and Klein.1995. http://dwb.unl.edu/Edit/MB/Mason Bruning. html(downloaded on 19/03/2008)

Race, et al. 2005. http://www.scribd.com

Rolheiser and Ross. 2000. http://Pareonline.net (downloaded on 21/03/2008)

Roper. 1977. http://dwb.unl.edu/Edit/MB/Mason Bruning.html

Sharma. 1997. Effectiveness of Two Feedback Corrective Procedures Used in Mastery Learning Strategy in Terms of Students' Achievement and Retention in Chemistry. *Journal of Indian Education.* vol. xxxiii, No.1, May 2007.

Topping. 1998. Peer Assessment Between Students in College and University.http://links.jstor.org.com(downloaded on 21/03/2008)

T Sang and Tsai. 2008. Peer Assessment and Computer Literacy for junior High School Students in Geography Lessons in Hongkong. www. ijedict.dec.uwi.edu.com

Yamashiro and Johnson. 1997. Public Speaking in EFL: Elements of Course Design. http://www.scribd.com(downloaded on 22/03/2008)

Adoption of RTE in Private Schools of Rural Punjab

GURUSHARAN SINGH KAINTH*

Education leads to individual freedom and empowerment, which yields significant societal development gains and makes an individual self-reliant. It is seen as the foundation of society, enabling economic wealth, social prosperity and political stability. Elementary education forms the foundation for all levels of learning and development. It empowers and equips individuals with analytical capabilities, instils confidence and fortifies them with determination to achieve goal-setting competencies. It, therefore, plays a pivotal role in improving the socio-economic condition of the nation. Cognizant of its duty to ensure that no individual is denied of this fundamental right to receive education, Government of India enacted the Right to Education Act 2009 which is regarded as landmark legislation. The *Right of Children to Free and Compulsory Education (RTE) Act* 2009 stipulates that private schools reserve 25 per cent of seats at the entry level for children belonging to 'disadvantaged groups' and 'weaker sections'. The Central Act originally defined a 'child belonging to a disadvantaged group' as one belonging to a Scheduled Caste, Scheduled Tribe, socially and educationally backward class or such other group facing disadvantage owing to social, cultural, economic, geographical, linguistic, gender or other similar factors. This study is an attempt to explore the role of the private sector (schools) that can play an important role in the implementation of RTE.

Objectives

- To know the status of adoption of RTE Act 2009 in private school of rural Punjab.

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- To identify the problems faced in implementing RTE Act 2009 in private schools of rural Punjab.
- To find out measures taken by government for private schools that failed to adopt RTE.
- To find out suggestion for effective implementation of RTE in private schools of rural Punjab.

Research Questions

- Are private schools made 25 per cent compulsory reservation? If not why?
- Are private schools charging any type of fees from such students?
- Are the teachers appointed are qualified and paid as per government rules?
- Are students admitted to the school without any admission test/age proof?
- Have private schools made provision for one classroom of standard size for each section?
- Do teachers take proper interests in providing education and other activities to such students?

Sample of the Study

The locale of study was rural areas of Punjab. All 20 districts (expect 2 newly created) were grouped into 3 categories on the basis of rural literacy rate defined as highly educated, thinly educated and moderately educated. From each group, two districts were selected on the basis of rural literacy rate and keeping regional distribution in mind. 450 private schools (nearly one-third of the total private schools) were selected from 6 districts. Finally, 4525 teachers (30 per cent) were interviewed to collect necessary information.

Tools Used

To meet the objectives of the study, a series of questionnaires were prepared for principals, teachers and for parents, separately. Interviews were also conducted for obtaining required information. Official publications such as Statistical Abstract of Punjab and Economic Surveys of Punjab were explored for necessary data.

Major Findings

It is ascertain that the present study highlights the status of implementation of Right to Education, 2009 in Punjab. However, the investigator is not hesitant to say that RTE in Punjab is not

implemented in a transparent way and in its true spirits. There were 9125 private schools functioning in Punjab during 2013–14. Districts such as Faridkot, Fatehgarh Sahib, Barnala, Ludhiana, Amritsar, Jalandhar and Patiala claimed the considerable number of private schools (nearly 46.86%). Thus, the percentage of the private schools highlights the roles they play in providing quality education. But, most of the private schools in the State have showed poor response in admitting children from weaker sections. Director General School Education (DGSE) Punjab is the sole authority responsible to regulate and monitoring the implementation of Right to Education in the state. However, it was found that official of DGSE office as well as its district and block level staff did not monitor the data effectively and was fully depended upon the Self Declaration Form filled by the private schools. As a result guidelines provided by the Government under the Act are not strictly followed by private schools. Authorities accountable for providing necessary data for the study were seemed non-cooperative. It is also observed that schools under private management seem better but still over 40 per cent do not meet the minimum standards of teaching. Also, majority of teachers in private schools were unqualified/under qualified in Punjab (47.67 per cent).

On the government's part, as many as 931 private schools in Punjab have been closed for non-compliance of the Right of Children to free and Compulsory Education (RTE) norms and the process of de-recognition and closure of 219 such schools have started. Present study has also highlighted various elementary/primary schools in the state were neither following any uniform curriculum nor having proper infrastructure.

Conclusion

With the RTE coming into force, there is an expectation that this will finally be translated into provision of quality school education for all children. The challenge before RTE is not only of money resources and higher budget spending for primary education. The major challenge is to scout pack our primary schools with quality teachers with skills of transmitting knowledge to each differently placed child and wedded to the values of love and compassion. Thus, in spite a school being private or public, RTE act must be adopted and followed for providing better education to children by every school and concerned authorities.

Eklavya Model Residential Schools in Odisha: An Evaluation

Sambit Kumar Padhi*

It has been universally accepted that education is the basic input for sustainable development of people and nation. Realising the importance of education the State and Central Government have given wide attention for promotion of education among all categories in general and, socially and culturally disadvantaged groups in particular. The schedule tribes' constitute the most backward among the weaker and disadvantaged sections in India. And only education can bring a visible change in their present life style. Many special schemes have been formulated in order to attract tribal children to school. However, review clearly underlines that they are far behind from the mainstream of life. For the upliftment of tribal people living in backward areas, Ministry of Tribal Affairs has launched a new concept of educational development– 'Establishment of Eklavya Model Residential School (EMRS)' in the country during 1997–1998. In Odisha, Eklavya Model Tribal residential school project was launched in the year 2000–2001. Over the periods of 12 years, 13 such EMRs have been established across the State covering total of 11 districts. The main aim of the study was to ascertain the effectiveness of the scheme; data were collected from the areas like — admission procedure for students, location and infrastructure, teaching and learning, assessment procedure etc.

Objective of the Study

- To assess the various segment of the schooling programs conducted in EMRS for the tribal students.
- To determine the achievement of tribal students for last three years.
- To study the present status and functions of EMRS.

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- To identify in-service and pre-service training needs of teachers working in EMRS.
- To determine the extent to which the EMRS scheme has been succeeded in the context of framed policies.

Research Methodology

Descriptive survey research was employed in order to assess the operational aspects of EMRS running in various tribal district of Odisha.

Sample Selected for the Study

The field study included all the 13 EMRs which have been sanctioned and operationalised in 11 tribal districts of Odisha. The study was conducted on a sample of 130 students, 63 teachers, 13 principals and 13 administrative officers.

Tools for Data Collection

Data for the study were collected both from primary and secondary sources. Reports, newspapers, journals, document, guidelines relating to the function of EMRS, office orders were used as secondary data. Primary data were collected through intensive field work which includes.

- Observation schedule.
- Interview schedule for administrative officers and principals.
- Questionnaires for teachers and students.

Findings of the Study

Examination of data obtained from students, teachers, principals and administrative officers revealed that education (including meals, school uniforms, books, pocket money etc.) is entirely free for all tribal students who have admitted in all 13 EMRSs of Odisha. In context of location and infrastructure, EMRSs were found appropriately located in tribal areas, essential infrastructures such as laboratories, computer lab, library, classrooms, toilets, teacher's room, office room, principal room, staff quarters were available. The recruitment of teaching staff is done through career assessment followed by an interview which plays an important role in getting quality teachers. All EMRSs have well qualified and sufficient number of teaching staff. It was also found that teachers felt the need to incorporate ICT in order to improve the quality of

education. Every EMR has a school level management committees headed by the Collector of the concerned district and 8 other members. In order to examine performance of students, the school engages in a range of comprehensive formative and summative assessment procedures. It was expected that the principals and teachers should undergo the induction level training which could focus how to understand and cater the needs of tribal children. The finding reveals that no such specific program has been organised till date.

Educational Implications of the Study

- The present study will be helpful to determine the strength and weakness of the ongoing programs, specially meant for tribal children.
- It will be helpful for reducing dropout rates and to increase enrolment of tribal students. It is also capable of providing authentic information to Ministry of Tribal Affairs on which further improvement strategies could be formulated.
- Policy makers can assess the feasibilities of different policies with respect to the education of tribal students.
- It will help to develop awareness amongst the parents who do not know much about the facilities available for their children
- This investigation would also be helpful to identify the real learning difficulties faced by students and problems faced by teachers in teaching learning process.
- It paves the way for future comparative studies in the area of tribal education.
- Teachers would be able to know their status in terms of salary, service conditions, future possibilities along with their role and responsibilities.
- Schools may draw inputs to strengthen the institutional and instructional capacities.

Conclusion

In terms of quality of education and infrastructural facilities, EMRSs outstands other government schools. This initiative has become successful in generating self-confidence among tribal children and assists them to enter the main stream of society. Extra curricular activities carried out by EMRS have added to the knowledge and

interest of tribal students and have given them an opportunity to develop their skills in the subjects of their interest. Availability and access to library and computers has also contributed towards skill up gradation of tribal students. By taking care of physical, psychological and emotional development of students, EMRS thus contributed to their overall development.

A Study of the Pre-service Secondary Teacher Education Programme in Jammu Province for Emerging Divergent Education Contexts: Perspective, Practices and Prospects

Rajeev Ratan Sharma*

Introduction

Education has a fundamental role to play in personal and social development. It cannot be considered as a magical formula, but it is definitely a principal mean available to foster a deeper and more harmonious form of human development and thereby would help technological and scientific changes which have accelerated the rate at which changes occur in the world today. In order to meet the ever growing demands of society one needs to put dynamic and ever evolving system of education. The changes have accelerated the rate at which changes occur in the world today. The task of building an enlightened, strong and prosperous nation rests on the shoulder of its children nurtured and developed with tenderness and care.

The education system has to be geared to the changing demands of society. No system of education however, comprehensive in content and form, can meet these changing demands unless the teacher–who is the driving force behind it, is fully equipped with academic and professional competencies. However, curriculum is indeed the heart of the educational process; the quality of education irrespective of the system under which it is provided depends ultimately upon the individual, and the social relevance of curriculum and the extent to which it is effectively transacted in educational institutions. The diversity in the teacher education programme for secondary teachers cannot be dissociated from the Indian culture and what is being experienced by the diverse

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Indian culture in context to the changing global standards and environments. In these dynamic environments it is indispensable for the various educational curriculums to construct themselves according to the global standards keeping in view their own cultural and national goals and values. Thus, the present study provides the detailed qualitative and quantitative data that taps the emerging divergent education contexts in pre-service secondary teacher education programme in Jammu province.

Research Questions

The study attempted to address the following research questions:

- Does the existing teacher education curriculum fulfill the needs of the diverse educational contexts?
- Does the existing practice of teacher education curriculum transaction equip the teachers to meet their professional requirements?
- What is the existing profile of teacher educators?
- How do the stake-holders perceive the existing teacher education programme?
- How far the teacher education programme is able to achieve its objective in operation?

Methodology

Sample

For the sample, eight colleges were chosen from five districts of Jammu Province and all of these colleges are affiliated to the University of Jammu. Among these 2 colleges are permanently affiliated to the University whereas other six colleges are temporary affiliated.

Research Tools Used for the Study

The following tools have been developed for use in this study:

- Teacher Educators Profile (for Marco Survey)
- Questionnaire for Student Trainees Perception
- Observation Schedule for Classroom Practices
- Questionnaires for Stakeholders
- Questionnaires for Beginners
- Questionnaires for School Principals of Practice Teaching Schools

- Content Analysis of Curriculum of B.Ed. colleges
- Focused Group Discussion with the Teacher Educators

Data Analysis

Data obtained was analysed qualitatively and quantitatively.

Major Findings

The brief findings of the project are as follows:

The Curriculum

The curriculum overall displays concern with the global standards but, their implementation is not judiciously done. The balance between teaching of theory and practical contents required to be revised and to be maintained appropriately.

Classroom Observation

As part of the project, classroom observations were made of the different situations of teacher education programme. Among the situations observed in all the sample colleges, the results were far from the objectives of the study. It was also marked that the colleges were least interested to be on the equal pedestal to the global standards. Least concern was expressed to achieve the desired global levels of learning and teaching in colleges of education.

Teacher Educator's Profile

The major thrust of the study was the performance and understanding of the Teacher Educator's about the teacher education programme. It was found that most of the teacher educators' in these colleges were mostly fresh graduates as well as many of them were post graduates. Hence, there was lack of appropriate experience among them. Another reason of not having experienced faculty, it is the payment of the less salary as promised by the Managements. A positive aspect about all these colleges was that a fairly cohesive environment was seen and teamwork was encouraged to its maximum. Teacher Educators did feel a need for career advancement programmes for professional betterment and weren't well conversant with the Internet and web-based learning.

The Stake-holders Perception

The stake-holders are the main source of growth of self-finance B.Ed. colleges, their awareness about the profession and its market

importance makes the course to improve in the requisite direction. Many were satisfied with the present condition of the frame work of teacher education programme. Some felt that the orthodoxy of the curriculum and the pedagogic methodology are making the entire course lose its community relevance.

Conclusion

The teacher is the person who brings changes in the society. To be a change agent it is important that one should adopt the changes before the other persons in the society adopt it. In brief, to satisfy the needs of the teachers today at secondary school it is equally important to regularise and organise the in-service teacher training programmes as per the changing demands of the global educational requirements and associated employment market which is being constantly affected by liberal and global perspectives of education.

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