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CONTENTS

Editor's Note

Gender-based discrimination is a part of every society. It is prevalent in the Indian society as well. We still have different societal norms for girls and boys, which place girls at a disadvantage and pose barriers for boys too. Studies show that rights-based, gender-sensitive, life skills focused sex education programmes play a crucial role in reducing adolescent sexual risk behaviours and promoting health and well-being. Jaya and her team in their paper examine the attitudes of students about gender stereotypes, gender-based violence and the role of adolescence education programmes in shaping their attitudes. The finding of the paper makes a strong case for mainstreaming adolescence education in the school curriculum.

Yoga contributes not only to the physical development of the child but also has a positive impact on the psychological and mental development. It contributes towards improving learning, memory and dealing with stress and anxieties in children. However, Yoga has not been given due recognition in the school curriculum. Saroj Yadav elaborates the initiatives taken by us to integrate yoga in school and teacher education programmes. She also illustrates some yogic exercises which may be performed by children in schools.

In our country, we have two categories of schools — state-run government schools which are accessible to public, hence called "public schools", and private schools. It has been observed that children from lower socio-economic status and marginalised sections go to government-run schools. Providing leadership to these schools is different when compared to private schools. Sunita Chugh in her paper tries to understand the challenges faced by the public school leaders in urban areas.

Four papers reflect on the teaching-learning process in our classrooms. Pallavi analyses the nature of code switching between Hindi and English languages in our classrooms. She infers that code switching is not arbitrary in nature; it has rather attained a special significance in the context of classroom teaching-learning. Priyanka Sharma's paper tries to address a crucial issue— does Science teaching in classrooms have the potential to develop scientific inquiry and thinking abilities among students? Chandra Prabha Pandey and H.C.S. Rathore provide empirical answer to the question — does the civic sense developed in schools turn into civic responsibility among students? Sangeeta Malik and Usha Sharma in their research paper assess the potential of technology-based learning process and conclude that amalgamation of technology in the teaching-learning process is the need of the hour.

Two papers highlight the implementation of Government of India's interventions to provide quality education to all children. Kashyapi Awasthi

finds out that providing quality education to the underprivileged girls through Kasturba Gandhi Balika Vidyalayas (KGBVs) is still a serious concern, whereas Sandhya Sangai reports the perceptions of various stakeholders about implementation of the Mid Day Meal scheme.

The National Curriculum Framework 2005 visualises the role of teacher as a facilitator to help learner construct knowledge. Biswajit Behera investigates how our teacher trainers are prepared through social constructivist approaches during teacher preparation for this role.

Two book reviews are also included in the issue. The review of a book titled *Effective Instructional Strategies — From Theory to Practice* is written by Puneet Rahi and Sanjna Vij, and another book *Early Childhood Education: Teachers' Perspectives, Effective Programs and Impacts on Cognitive Development* is reviewed by Puthem Jugeshor Singh.

Academic Editor

Challenging Gender Stereotypes and Gender-based Violence in Schools

Evidence from the Adolescence Education Programme, India

Jaya*, Preeti Dhillon**, Sanjay Kumar*** and Deepti Priya Mehrotra****

Abstract

The Adolescence Education Programme (AEP) implemented by the Government of India and United Nations Population Fund aims to empower school-going adolescents with scientifically accurate, culturally sensitive information on issues related to their health and well-being. This paper examines the attitudes of students on gender stereotypes and gender-based violence (GBV) and the role of individual, parental level factors and AEP in shaping these attitudes. Responses from 7,662 students aged 14–18 years from the evaluation of AEP (2010–11) are analysed. Results from multivariate analyses suggest that in comparison to boys, girls have more progressive attitudes in challenging gender stereotypes (coefficient: 1.35, p-value<0.01) and GBV (coefficient: 1.21, p-value<0.01). Internet access and mothers' education are associated with progressive attitudes. Students from socially disadvantaged groups reported less progressive attitudes. Students exposed to AEP reported significantly more positive attitudes. Programme effectiveness could be increased by giving specific attention to boys, disadvantaged social groups and more engagement with parents.

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Introduction

Gender stereotypes begin early as young children learn socially desirable behaviours during daily interactions within family and society (Thomson, 2002). Stereotypes reflect the value and roles that society ascribes to girls in comparison to boys, and affect access to education, health, employment and income (Krishnan, Dunbar, Minnis, Medlin, Gerdts, and Padian, 2008; Sen, George, and Ostlin, 2002). Gender double standards and power imbalances often undermine young people's ability to make informed and responsible sexual and reproductive health choices. Behaviour conforming to gender expectations may pose a barrier to open and honest communication on sexual behaviours, yet to be rewarded by enhanced social status (Marston and King, 2006). Rigid and discriminatory norms create circumstances for gender-based violence (GBV) of various kinds (Heise, Ellsberg, and Gottmoeller, 2002) including, verbal, non-verbal, psychological and physical, in homes, workplaces and public spaces (Srinivasan, 2011). Violence against women within relationships is often construed as normal, or as the victim's fault (Marston and King, 2006).

There is sufficient evidence to underscore the prevalence of gender-based discrimination and violence in the Indian society. The Youth Study (International Institute for Population Sciences [IIPS] and Population Council, 2010) conducted across six Indian states reported 5 per cent young women (aged 15–24) being allowed to visit nearby village or neighbourhood for entertainment in comparison to 58 per cent young men. Among those with a bank account, 54 per cent young women compared to 90 per cent young men controlled its operation, suggesting substantial gender differentials in mobility and financial independence. In the patriarchal Indian family, power vests in elder males; sons are preferred to daughters and provided better schooling, health care and opportunities for advancement.

Gender norms systematically place girls at a disadvantage, yet pose barriers for boys too. The double standards for sexual behaviour, whereby, restraint is expected of girls and excesses tolerated for boys, compounds reproductive health problems for both sexes (Bearinger, Sieving, Ferguson, and Sharma, 2007; Jaya and Hindin, 2007). A study by the Ministry of Women and Child Development, Government of India (2007) in 13 states of India indicated pervasiveness of abuse among children and young people; 53 per cent in the age group 5–18 years reported having faced some form of sexual abuse. The victims included 54 per cent boys and 46 per cent girls.

A young person's individual attributes and a supportive environment, particularly family, school and peer network are important for developing attitudes

and abilities to challenge dominant gender norms (Alexander, Garda, Kanade, Jejeebhoy, and Ganatra, 2007). Young people, in general, lack a safe and supportive family environment, nor do parents serve as reliable sources of information. This poses major obstacles to their achievement of good sexual and reproductive health and realisation of their rights.

There is increasing evidence that rights-based, gender sensitive, life skills focused sexuality education programmes can play an important role in reducing adolescent sexual risk behaviours and promoting health and well-being (Rohrbach, Berglas, Jerman, Angulo-Olaiz, Chou, and Constantine, 2015; Laski *et al.*, 2015). Such programmes may reach large number of adolescents in areas with high school enrolment rates (Rohrbach *et al.*, 2015, Bearinger *et al.*, 2007). The education system is a major influence on young people. Schools help students acquire knowledge, imbibe values and develop an understanding of social and gender norms (Dunne and Leach, 2005). School education can play a key role in reinforcing or challenging gender stereotypes and associated violence (Thomson, 2002). School-based interventions are feasible and cost effective as school-going adolescents comprise a relatively homogenous and accessible audience. Being recognised as institutions of learning, implementing sexuality education programmes in schools is likely to improve their acceptability. Comprehensive Sexuality Education (CSE) programmes can be a major intervention for the promotion of equality and rights and establish a basis for young people, including the most vulnerable, to protect their sexual, reproductive and mental health and well-being (Kaidbey, 2015). Although school-based interventions have been shown to have an impact on reducing GBV, much remains to be done by the education sector (Contreras-Urbina, 2015).

Sexuality Education in India

A qualitative study with parents of youth aged 15–24 years in six states of India revealed that they did not discuss sexuality-related matters with young people. They perceived such discussion to be against cultural norms and expressed concern that communicating about sexual matters would lead young people to engage in sexual activity (Jejeebhoy and Santhya, 2011; Santhya and Jejeebhoy, 2012). Another study indicated fewer than 10 per cent young men and women had discussed growing up, pregnancy and reproduction-related matters with either of their parents; 77 per cent young women had discussed "growing up" — generally limited to the mechanics of handling menstruation and behavioural dos and don'ts — with their mothers (IIPS and Population Council, 2010). In a study with school-going adolescent girls in Delhi, 48 per cent said it

was not possible to talk with parents about sex and Sexually Transmitted Infections (STIs) (McManus and Dhar, 2008). Another study, with parents of adolescent girls, found a majority of parents in urban areas in favour of sex education, while those in rural areas disapproved of sex education for their daughters (Mahajan and Sharma, 2005).

However, young people clearly express the need for sexuality or family life education. The Youth Study (IIPS and Population Council, 2010) showed 82 per cent young men and 78 per cent young women (aged 15–24) stating this education was important. Smaller, school-based samples show similar results (Unni, 2010; Thakor and Kumar, 2000). Most young people consider school teachers as an important source of information on issues related to reproductive health and well-being (IIPS and Population Council, 2010; Thakor and Kumar, 2000; Bhasin and Agarwal, 1999). Yet, despite high demand from students, only 15 per cent young women and men reported having ever received family life or sex education in school or other programmes (IIPS and Population Council, 2010).

India introduced some elements of sexuality education in secondary schools in 1980, via the National Population Education Programme (NPEP), supported by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) and the United Nations Population Fund (UNFPA). In mid-1990s, the framework broadened, from the early preoccupation with demographic issues, to include adolescent sexual and reproductive health, gender equity and HIV-AIDS education. In 2005, government initiatives on Adolescence Education were harmonised by the Ministry of Human Resource Development (MHRD) under the umbrella term, "Adolescence Education Programme" (AEP). In 2007, the programmes faced a backlash when several state governments withdrew it on the grounds that the curriculum, particularly some illustrations in it, was culturally inappropriate (Gentleman, 2007). Thereafter, the Central Board of Secondary Education (CBSE) led revisions in the curriculum. Currently, several different AEPs are being implemented; the AEP examined in the present paper (and referred to as AEP through the rest of the paper) is the one being implemented at the national level. In 2009, AEP was restructured by the National Council of Educational Research and Training (NCERT) under the aegis of MHRD, with technical and financial support from UNFPA, through an elaborate consultative process with relevant stakeholders including government, civil society, experts, students, teachers and principals. The AEP curriculum has been revised to make it increasingly relevant and responsive to adolescent needs. The content now includes themes

of understanding changes during adolescence, positive and responsible relationships, challenging stereotypes and discrimination related to gender and sexuality, reporting abuse and violation, prevention of substance misuse and HIV/AIDS. AEP is positioned as an educational approach to develop life skills and empower young people with scientifically accurate and culturally sensitive information.

The programme has worked through the following school systems:

- Kendriya Vidyalaya Sangathan (KVS), a system of central government schools under MHRD.
- Navodaya Vidyalaya Samiti (NVS), a system of residential, co-educational schools under MHRD for rural, economically disadvantaged, meritorious children.
- Private schools affiliated to CBSE.

AEP works through a cascade training approach creating master trainers who orient nodal teachers to transact life skills based education (16 hours module) to secondary school students (aged 14–16) through participatory methodologies. Advocacy sessions are organised with principals and parents to promote an enabling environment. All the secondary schools in KVS (919 schools) and NVS (583 schools) and 2,500 private CBSE schools (out of a total of approximately 10,000 private schools) were covered in AEP by the end of 2009.

The extent to which AEP and other national-level programmes such as Rajiv Gandhi Scheme for Empowerment of Adolescent Girls have been effective, has not received much attention (Santhya and Jejeebhoy, 2012). There is insufficient evidence on young Indians' attitudes on gender and GBV. The AEP evaluation provides an opportunity to assess adolescent knowledge and attitudes on a range of issues related to sexual and reproductive health and rights. The present paper explores the evidence in terms of attitudes in the realm of gender stereotypes and GBV.

This paper attempts the following:

- Understand the attitudes of school-going adolescent boys and girls on gender stereotypes and GBV.
- Examine the role of individual and socio-economic factors influencing attitudes to gender stereotypes and GBV.
- Assess the role of AEP in improving attitudes relevant to these issues.

Methods

AEP Evaluation Design

The AEP evaluation was conducted in 2010–11 across 189 senior secondary schools in five Indian states (Punjab, Madhya Pradesh, Maharashtra, Odisha, Karnataka representing northern, central, western, eastern and southern regions respectively). The evaluation design was post test

only, with intervention-comparison school groups. Since all schools in KVS and NVS were covered under the programme, the comparison group was selected from private schools where the programme was not implemented. The three school systems serve students from very diverse socio-economic backgrounds and it is likely that these factors influence attitudes on gender stereotypes and GBV.

Hence, the present paper has been restricted to a sub-sample of 72 private schools that include students from 47 intervention and 25 comparison schools, and analyses responses from 7,662 students enrolled in private schools: 3,055 boys and 2,306 girls who were exposed to AEP programme and 1,399 boys and 902 girls who were not. For details on sampling, please refer to the Concurrent Evaluation of the Adolescence Education Programme (UNFPA and NCERT, 2010–11).

Development of Survey Instruments: Recognising that in the Indian context there were no pre-existing instruments available for such an assessment, a consortium of experts from relevant disciplines was created including educationists, domain experts and practitioners. Assessment tools were finalised after incorporating feedback from this group, and learnings from field testing.

The main research instrument was a self-administered, bilingual (Hindi and English) objective, multiple choice questionnaire to assess students' knowledge, attitudes and skills in applying learning in simulated real life situations. Seventy objective type questions were developed around themes covered under AEP. A similar, smaller, questionnaire was prepared for teachers, and a qualitative research tool for students. In the present paper, we analyse findings only from the students' questionnaire.

Questions on gender stereotypes and GBV: In this paper, attitudes on gender stereotypes and GBV are explored through specific questions, based on case vignettes and perceptions on commonly held beliefs and norms. Each question had four or five options to find out whether the respondents held strongly positive, strongly negative or ambivalent attitudes with regard to these issues. The case vignettes were contextualised to resonate with age and social realities of school-going adolescents.

The three vignettes on challenging gender stereotypes explore the situations of an adolescent boy who enjoys doing household work (contrary to normative masculinity); an adolescent girl good in sports but embarrassed to pursue it (social norms discourage girls to display the body post-puberty); and twin boy-girl siblings who want to pursue art, which their parents countenance for the daughter but not for the son. Each vignette deals with a gender stereotype widely prevalent in society. Apart from these, a number of statements related to gender roles were given and respondents were asked whether each statement was based on biological facts or mindsets.

The three vignettes dealing with GBV explore situations of sexual harassment of girls in public (a cinema hall); in school (by a male teacher in the sports class); and child sexual abuse (a boy abused by a relative, at home). The fourth question explores attitudes towards intimate partner violence, specifically wife-beating.

Selection of Students: One section per class (Classes IX through XII) was selected by the quality assurance team. All students present in the selected section on the day the survey was fielded, were invited to participate.

Ethical Considerations: The permission to field the assessment was obtained from each school system and principals of the selected schools were informed by the school systems. The survey team was informed that principals had the authority to allow assessment of ongoing programmes without parental consent. The consent form was included with the questionnaire and the survey team ensured that every participant read it and provided written consent. Respondents were assured anonymity and were free to refuse participation in the survey.

Quality Assurance: The survey team helped students understand the instructions and/or questions. To ensure accurate, complete and consistent data, validity and range checks were carried out. Overall, the percentage of ineligible entries was less than 1 per cent in all questions. Multiple entries in single response questions were less than 0.1 per cent. Both these suggest good data quality. Even on sensitive questions related to GBV, the response rate is close to 100 per cent, suggesting that the findings accurately represent the viewpoints of students who participated in the study.

Statistical Analysis

We have used STATA-11 for the analyses.

We computed the Index of Dissimilarity (Duncan, 1957) for the selected background characteristics to determine whether intervention and comparison schools were comparable.

Two separate indices on challenging gender stereotypes and GBV were constructed from students' responses (see Appendix). We assigned scores of +1 to each of the progressive response options and -1 to each of the regressive response options. The indices were created by taking all responses from the questions on gender roles and GBV, respectively, and summing up the scores assigned to all response options under the two domains. The index on challenging gender stereotypes was based on 12 negative and 12 positive responses and the one on challenging GBV was based on seven negative and eleven positive responses. The overall scores for each of the two indices were further divided into three equal categories defined as low, moderate and high.

Cronbach's alpha was applied to check the reliability of both indices and was found to be 0.70 and 0.51, for the indices on challenging gender stereotypes and GBV, respectively.

Multivariate ordinary least square (OLS) regression analyses were used to better understand the role of select socio-demographic factors and the role of AEP on the outcome

indices among all students, and then separately for boys and girls.

The indices on challenging gender stereotypes and GBV were considered the dependent variables. Age, sex, religion, caste, access to internet, mother's education, father's profession and type of school (intervention and comparison) were considered as independent variables. All the variables were categorical except "age" which was used as a continuous variable. The sample was assigned to three religious categories Hindu, Sikh and Others (including Muslims, Christians, nature worshippers and those who reported no religion), and four caste groups Scheduled Castes (SCs), Scheduled Tribes (STs), Other Backward Castes (OBCs) and Others (including all privileged caste groups). Scheduled Castes are considered to have been exploited for over centuries, at the bottom of the Indian caste system. Scheduled Tribes are the indigenous groups of India and among the deprived sections. Students' access to internet was explored at home, in school or in a cyber cafe. Mother's education was defined through four categories:

1. Non-literate or less than five years of education
2. 5–8 years of education
3. 10–12 years of education
4. College or professional degree/ diploma.

Father's occupation was divided into four categories, including:

1. Service or salaried
2. Having own business
3. Engaged in agriculture
4. Wage labourers or unemployed.

This set of independent variables covers a substantial range of individual as well as socio-economic factors that interface with and influence attitudes on gender stereotypes and GBV. Age is an important variable as students are likely to have varying exposure and experiences as they grow up. Due to differential sets of gendered socialisation patterns for girls and boys, sex of respondent is another crucial variable. Religion and caste are signifiers of students' socio-cultural contexts, and mother's education level and father's occupation, access to internet and type of school are proxies for students' socio-economic location.

Findings

Profile of student respondents: The mean age of students in the sample was 15.4 years; they were in the age group 12–18 years. There were more boys (58 per cent) than girls. Seventy-six per cent students were Hindu by religion and 15 per cent were Sikh. Majority of students belonged to "other" castes (76 per cent); only 6 per cent to SCs, 3 per cent to STs and 14 per cent to OBCs. Eighty-three per cent students had access to internet. Majority of fathers of students were in salaried jobs (57 per cent), while 28 per cent had their own enterprise/ business. Mothers of nearly 50 per cent students had a college degree or diploma. Seventy per cent students were from intervention schools and 30 per cent from comparison schools. Please refer to Panel 1 of Table 1.

Table 1
Background Characteristics of Students

Background Characteristics	All students		Boys		Girls	
	%	N	%	N	%	N
Age, mean (SD)	15.4 (0.01)	7,662	15.5 (0.02)	4,454	15.3 (0.02)	3,208
Sex						
Boys	58.1	4,454	--	--	--	--
Girls	41.9	3,208	--	--	--	--
Religion						
Hindu	76.2	5,842	76.5	3,406	75.9	2,436
Sikh	14.5	1,109	14.1	626	15.1	483
Others	9.3	711	9.5	422	9	289
Caste						
General	76.3	5,849	75	3,341	78.2	2,508
SCs	6.0	456	5.7	253	6.3	203
STs	3.4	260	3.3	149	3.5	111
OBCs	14.3	1,097	16	711	12	386
Access to internet						
No	17.1	1,310	13	580	22.8	730
Yes	82.9	6,352	87	3,874	77.2	2,478
Father's profession						
Service	57.2	4,380	54.7	2,438	57.2	4,380
Business	28.0	2,144	28.3	1,262	28.0	2,144
Agriculture	10.2	783	12.0	533	10.2	783
Wage Labour/Not employed	4.7	355	4.9	221	4.2	134
Mother's education						
Non-literate	4.9	378	6.2	278	3.1	100
Middle education completed	10.4	798	12.3	550	7.7	248
Secondary education completed	36.0	2,757	37.0	1,647	34.6	1,110
Higher education completed	48.7	3,729	44.4	1,979	54.6	1,750
Type of school						
Comparison	30.0	2,301	31.4	1,399	28.1	902
Intervention	70.0	5,361	68.6	3,055	71.9	2,306
Total	**100**	**7,662**	**100**	**4,454**	**100**	**3,208**

Eighty-seven per cent boys and 77 per cent girls had access to internet. The mothers of 55 per cent girls in comparison to 44 per cent boys had a college degree or diploma. Please refer to Panels 2 and 3 of Table 1.

Table 2
Comparison of Students in Intervention and Comparison Schools by Background Characteristics

Background Characteristics	Comparison	Intervention	Index of Dissimilarity (in %)
Age	***		
Mean (years)	15.3	15.5	
Sex	**		3.8
Boys	60.8	57.0	
Girls	39.2	43.0	
Religion	***		6.1
Hindu	72	78.1	
Sikh	17.7	13.1	
Others	10.3	8.8	
Caste	***		3.0
Other	75	76.9	
SCs	6.6	5.7	
STs	2.6	3.7	
OBCs	15.8	13.7	
Access to internet	**		2.7
No	19	16.3	
Yes	81	83.7	
Father's profession	***		7.2
Service	52.1	59.3	
Business	29	27.6	
Agriculture	14	8.6	
Wage Labour	0.9	0.9	
Not employed	4	3.7	
Mother's education	***		7.9
Non-literate	5.9	4.5	
Middle education completed	12.3	9.6	

Secondary education completed	38.7	34.8	
Higher education completed	43.2	51	
Total	**100**	**100**	

Note: *t-test for age and Chi square test for other variables to test differences in background characteristics between AEP and control school; significance level: ***p<0.01, ** p<0.05*

Table 2 shows the comparative distributions of background characteristics across intervention and comparison schools. The index of dissimilarity (refer to Panel 3 in Table 2) is not large for any background characteristic thus validating the comparison between intervention and comparison schools.

Table 3
Indices on Challenging Gender Stereotype and Gender-based Violence by Sex and Type of Schools

	Challenging Gender Stereotypes			**Challenging Gender-based Violence**		
	Comparison Schools	Intervention Schools	All	Comparison Schools	Intervention Schools	All
All students						
Mean	5.3	5.8	5.7	3.7	4.1	4.0
Less progressive	1.3	0.8	0.9	2.4	1.7	1.9
Moderate	34.4	30.4	31.6	72.9	66.8	68.7
More progressive	64.4	68.8	67.5	24.6	31.5	29.4
Significance	***			***		
Boys						
Mean	4.7	5.2	5.1	3.3	3.6	3.5
Less progressive	1.7	1.2	1.4	3.4	2.5	2.8
Moderate	39.7	35.7	36.9	77.5	73.0	74.4
More progressive	58.6	63.1	61.7	19.1	24.5	22.8
Significance	***			***		

Girls						
Mean	6.2	6.6	6.4	4.4	4.9	4.7
Less progressive	0.6	0.3	0.4	0.9	0.6	0.7
Moderate	26.2	23.4	24.2	65.8	58.6	60.6
More progressive	73.3	76.3	75.5	33.3	40.8	38.7
Significance				***		

Note: *Chi square test for differences in attitudes between intervention and comparison school; significance level: *** p<0.01, ** p<0.05*

Table 3 summarises the indices on challenging gender stereotypes and GBV by sex and type of schools. The observed mean value of challenging gender stereotypes index was 5.7 (ranging from -9 to 12) and that of challenging GBV index was 4.0 (ranging from -7 to 11). Three-quarters of girls in comparison to 62 per cent boys reported more progressive attitudes on challenging gender stereotypes whereas 39 per cent girls in comparison to 23 per cent boys reported more progressive attitudes on challenging GBV. Boys from intervention schools reported statistically significantly more progressive attitudes on both indices: a difference of 4.5 percentage points ($p<0.01$) on challenging gender stereotypes and a difference of 5.4 percentage points ($p<0.01$) on challenging GBV. Girls from intervention schools reported statistically significant more positive attitudes on challenging GBV at a difference of 7.5 percentage points ($p<0.01$). (See Table 3)

Programme (AEP) and Other Factors Influencing Attitudes on Challenging Gender Stereotypes: Results from Multivariate Analyses

Table 4
Factors Affecting Students' Attitudes on Challenging Gender Stereotypes: OLS Results

	All students		**Boys**		**Girls**	
Background Characteristics	Coeffi-cient	95% CI	Coeffi-cient	95% CI	coeffi-cient	95% CI
Age	0.04	-0.02,0.11	0.01	-0.07,0.1	0.08*	-0.01,0.16
Sex						
Boys (ref.)						
Girls	1.35***	1.19,1.51				

Religion						
Hindu (ref.)						
Sikh	-1.00***	-1.25, -0.75	-1.03***	-1.3, -0.68	-0.93***	-1.29, -0.57
Others	-0.19	-0.45, 0.08	-0.41**	-0.77,-0.05	0.14	-0.25, 0.53
Caste						
Other (ref.)						
SCs	-0.37**	-0.7, -0.04	-0.19	-0.66, 0.27	-0.59**	-1.05, -0.13
STs	-0.67**	-1.11, -0.22	-0.56*	-1.17, 0.05	-0.76**	-1.4, -0.12
OBCs	0.02	-0.21, 0.24	0.03	-0.27, 0.33	-0.08	-0.42,0.27
Access to internet						
No (ref.)						
Yes	0.22**	0, 0.43	0.40**	0.07, 0.72	0.02	-0.25, 0.3
Father's profession						
Service (ref.)						
Business	-0.32***	-0.5, -0.14	-0.35***	-0.59, -0.1	-0.27**	-0.53, -0.02
Agriculture	-0.56***	-0.87, -0.26	-0.60***	-0.99, -0.21	-0.59**	-1.08, -0.09
Wage labour/ Not employed	-0.29	-0.66, 0.09	-0.55**	-1.04,-0.05	0.2	-0.37, 0.77
Mother's education						
Non-literate (ref.)						
Middle education completed	0.53**	0.1, 0.96	0.50*	-0.02, 1.03	0.63	-0.13, 1.39
Secondary education completed	0.42**	0.03, 0.8	0.23	-0.25, 0.71	0.86**	0.18, 1.54
Higher education completed	0.56***	0.17, 0.96	0.21	-0.28, 0.7	1.24***	0.55, 1.92
Type of school						
Comparison (ref.)						

Intervention	0.34***	0.18, 0.51	0.41***	0.18, 0.64	0.24*	-0.01, 0.49
N	**7,662**		**4,454**		**3,208**	

Note: *Significance level: *** p<0.01, ** p<0.05, *p<0.10*

The OLS regression results in Table 4 show girls reporting statistically significant more progressive attitudes on challenging gender stereotypes (coefficient: 1.35, p-value<0.01). In comparison to Hindus, the Sikh students show statistically significant less progressive attitudes towards challenging gender stereotypes, a pattern retained for both boys and girls.

In comparison to "Other" caste groups, students belonging to SCs (coefficient: -0.37, p-value<0.05) and STs (coefficient: -0.67, p-value<0.05) reported less progressive attitudes on challenging gender stereotypes. Among girls, those from SCs (coefficient: -0.59, p<0.05) and STs (coefficient: -0.76, p<0.05) reported statistically significantly less progressive attitudes.

Students with access to internet reported more progressive attitudes on challenging gender stereotypes (coefficient: 0.22, p-value<0.05), and this influence is retained among boys but not among girls.

In comparison to children of fathers in salaried jobs, those with fathers engaged in agriculture reported less progressive attitudes on challenging gender stereotypes (coefficient: -0.56, p-value<0.01), followed by fathers who had their own business (coefficient: -0.32, p-value<0.01). The influence of father's profession on attitudes of children in challenging gender stereotypes is retained among boys and girls.

Children of educated women reported more progressive attitudes towards challenging gender stereotypes. Children of women who had completed a college degree reported most progressive attitudes (coefficient: 0.56, p-value<0.001). Daughters of women who had acquired a college degree reported most progressive attitudes in challenging gender stereotypes (coefficient: 1.24, p-value<0.01) followed by daughters of women who had completed secondary education (coefficient: 0.86, p<0.05). Findings do not show similar consistent influence of mother's education on boys.

Findings suggest that AEP has positively influenced attitudes of students on challenging gender stereotypes (coefficient: 0.34, p-value<0.01). This positive influence is retained among both boys and girls.

Programme (AEP) and Other Factors Influencing Attitudes on Challenging GBV: Results from Multivariate Analyses

Table 5

Factors Affecting Students' Attitudes on Challenging Gender-based Violence: OLS Results

	All students		**Boys**		**Girls**	
Background Characteristics	Coefficient	95% CI	Coefficient	95% CI	Coefficient	95% CI
Age	0.14***	0.1, 0.19	0.09***	0.03, 0.15	0.22***	0.15, 0.28
Sex						
Boys (ref.)						
Girls	1.21***	1.1, 1.33				
Religion						
Hindu (ref.)						
Sikh	-0.52***	-0.71, -0.34	-0.69***	-0.95, -0.44	-0.29**	-0.57, -0.02
Others	0.15	-0.05, 0.35	0.16	-0.1, 0.43	0.14	-0.15, 0.43
Caste						
Other (ref.)						
SCs	-0.42***	-0.67, -0.18	-0.39**	-0.73, -0.06	-0.48***	-0.83, -0.13
STs	-0.37**	-0.7, -0.04	-0.39*	-0.84, 0.05	-0.29	-0.77, 0.19
OBCs	-0.02	-0.19, 0.15	-0.02	-0.24, 0.20	-0.05	-0.31, 0.21
Access to internet						
No (ref.)						
Yes	0.29***	0.14, 0.45	0.47***	0.23, 0.7	0.18*	-0.03, 0.39
Father's profession						
Service (ref.)						
Business	-0.18	-0.32, -0.05	-0.24*	-0.42, -0.06	-0.13	-0.32, 0.06
Agricultural	-0.25	-0.47, -0.02	-0.32**	-0.6, -0.03	-0.11	-0.48, 0.27
Wage Labour/ Not employed	-0.24*	-0.51, 0.04	-0.30	-0.66, 0.07	-0.09	-0.51, 0.34

Mother's education						
Non-literate (ref.)						
Middle education completed	0.11	-0.2, 0.43	0.06	-0.32, 0.45	0.23	-0.35, 0.8
Secondary education completed	0.06	-0.23, 0.34	-0.12	-0.47, 0.24	0.39	-0.12, 0.9
Higher education completed	0.67***	0.38, 0.96	0.45*	0.09, 0.81	1.06***	0.54, 1.57
Type of school						
Comparison (ref.)	0.29***	0.17, 0.42	0.21**	0.05, 0.38	0.41***	0.22, 0.59
Intervention						
N	**7,662**		**4,454**		**3,208**	

Note: *Significance level: *** p<0.01, ** p<0.05, *p<0.10*

The OLS regression results in Table 5 show that older students have statistically significantly more progressive attitudes towards challenging GBV (coefficient: 0.14, p-value<0.01) and this influence is retained in both boys and girls. Girls reported statistically significantly more progressive attitudes on challenging GBV (coefficient: 1.21, p-value<0.01).

In comparison to Hindus, the Sikh students show statistically significantly less progressive attitudes towards challenging GBV (coefficient: -0.52, p-value<0.01). This finding holds for both boys (coefficient: -0.69, p-value<0.01), and girls (coefficient: -0.29, p-value <0.05). In comparison with other caste groups, students belonging to SCs and STs reported less progressive attitudes on challenging GBV. Findings suggest a similar trend among both boys and girls for the SCs but not STs.

Students with access to internet reported more progressive attitudes on challenging GBV (coefficient: 0.29, p-value<0.01) and this influence is retained among both boys and girls.

Boys reported less progressive attitudes on challenging GBV if their fathers were engaged in agriculture (coefficient: -0.32, p<0.01) in comparison to those whose fathers were in salaried professions.

Mothers' higher education played an important role in developing progressive attitudes towards challenging GBV for all students and

particularly for girls (coefficient: 1.06, p<0.01).

Findings suggest that AEP positively influenced attitudes of adolescent students on challenging GBV (coefficient: 0.29, p-value<0.01). The positive influence of AEP is retained among boys (coefficient: 0.21, p-value<0.05) and girls (coefficient: 0.41, p-value<0.01). (See Table 5)

Discussion

Enabling adolescents to recognise and challenge gender-based discrimination, violation and harassment are important objectives of AEP, which aims at improving overall well-being of school-going adolescents. Using data from AEP evaluation survey, we analyse the factors influencing attitudes of adolescents in challenging gender stereotypes and GBV, as a proxy for predictable behaviours when faced with similar situations in real life. Adolescent and youth development in India is strongly affected by socio-economic-cultural contexts: caste, religion and the family's socio-economic level influence the conditions and possibilities of survival, attention to studies and encouragement for girls' education. The influence of these variables has been factored in determining the overall attitudes on gender stereotypes and GBV.

The findings suggest overall progressive attitudes among students towards challenging gender stereotypes and GBV. It is apparent that students may find it somewhat easier to recognise and challenge gender stereotypes than GBV. Gender stereotypes might be gradually dissolving, to some extent at least, given contemporary contexts in which girls are going in for education and jobs in every field, thus mitigating the harshness of rigidly defined gender roles, attributes and abilities. GBV may be harder for young people to recognise and challenge, forming as it does the tenacious core of patriarchy.

In comparison to boys, girls reported more progressive attitudes on both these domains. These findings are consistent with Youth Study findings (IIPS and Population Council, 2010) where girls reported more progressive attitudes towards challenging traditional gender roles, than boys (age group 15–24 years), for instance, 20 per cent of girls compared to 36 per cent young boys reported that educating boys is more important than educating girls; and 74 per cent girls in comparison to 57 per cent boys reported that girls should be allowed to take decisions about their own marriage. It is noteworthy that majority of girls reported very progressive attitudes on challenging gender stereotypes, which is an indicator for progressive social change. While it is essential that girls understand and resist gendered notions that have kept them in a secondary position since centuries, boys are lagging behind. A special effort seems to be required to positively influence boys'

mindsets. Given that the majority of perpetrators of GBV are men, it is extremely important to influence attitudes of male students, for overall long-term reduction in incidence of GBV. It is encouraging that findings from the survey suggest improvement in attitudes of boys on both gender stereotypes and GBV. These findings corroborate with existing evidence that with context-specific culturally relevant investments, it is possible to change attitudes and behaviours of young men in relatively short periods of time. Both the *Yari-dosti* (means friendship in Hindi) initiative for promoting gender equity, piloted in 2005–06 among young men from low-income communities in Mumbai (Verma *et al.,* 2006) and the Gender Equity Movement in Schools (GEMS) which engaged adolescents in age group 12–14 years (Achyut, Bhatla, Khandekar, Maitra, and Verma, 2011) demonstrated positive changes in gender attitudes of those exposed to the interventions.

Findings from the present evaluation suggest that older adolescents have more progressive attitudes on challenging GBV, as compared to younger adolescents. GBV is a notoriously complex social reality, hence, we hypothesise that older adolescents are likely to have the maturity to develop a better understanding of the issue. Furthermore, AEP is initiated in Class IX (ages 14–15 years) and messages are reinforced in Class XI (ages 16–17 years).

Access to internet is related to more progressive attitudes especially for the boys. It is plausible that access to internet may be proxy to adolescents being able to navigate through relevant information independently and take more informed decisions.

The findings suggest that adolescents belonging to Sikh religion reported less progressive attitudes. However, we hypothesise that rather than attributing this association to a particular religion, geography may be a better explanation. Given the reality of India as a patriarchal society, boys are valued more than girls. However, there are variations within the country and northern parts of the country harbour more entrenched notions of gender-based discrimination. In this evaluation survey, the state of Punjab represents the northern region of the country and was one of the earliest to record adverse Child Sex Ratio (CSR) as low as 798 girls per 1000 boys for age group 0–6 years (Census 2001). Census 2011 shows some recovery in terms of CSR in Punjab, but it is still very low (846).

The present study is not able to explain the reasons for less progressive attitudes on gender stereotypes and GBV among adolescents from SCs and STs. It is acknowledged that SCs and STs have been at the periphery of mainstream development and hence young people from this background may not have sufficient exposure to challenge prevalent gender norms.

The finding that higher education among mothers is correlated with

more progressive attitudes among adolescents corroborates another school-based study with high school students in Bihar, India (Shekhar, Ghosh, and Panda, 2007) which suggests that mothers' education has an important bearing on attitudes and behaviours of adolescent children. Given the importance of mothers' education in shaping attitudes of adolescents, especially girls, it will be appropriate if AEP invests in addressing and engaging parents, particularly mothers.

In order to draw meaningful comparisons, analyses are limited to private schools, leaving out the public education system that is likely to enrol children from more deprived backgrounds. However, AEP is a large-scale programme that aims to improve the overall health and well-being of school-going adolescents and has not been evaluated before. Hence, the survey findings are encouraging in suggesting that initiatives such as AEP can serve as effective interventions to challenge prevalent discriminatory social norms. Multivariate analyses to ascertain programme effects control for certain background characteristics that are likely to influence attitudes on gender-based stereotypes and GBV. However, it is acknowledged that there may be other factors, such as area of residence (urban vs. rural), parents' attitudes towards these issues and others that may influence the attitudes being assessed but have not been included. Another limitation is the use of self-reported data which might be subject to response bias. However, careful attention has been given to minimise this limitation at all levels of survey design and implementation. In the design phase, attitudes towards gender stereotypes and GBV were explored through several real life situations, including a range of options from most progressive to regressive; survey instruments were pre-tested to ensure that questions were understood; and confidentiality of responses was ensured during data collection, thus encouraging honest reporting.

Although there is no clear evidence to show that any particular caste, religion or socio-economic strata is more prone to GBV or gender stereotypical attitudes than others, yet it is logical that somewhat different strategies may work with students from different contexts. This research is a rare effort to examine this terrain in the interests of ensuring that AEP programming may be refined to be equally relevant to students from varying socio-economic-cultural contexts.

Consistent with findings from similar studies; the results suggest that students exposed to AEP reported more progressive attitudes on challenging gender stereotypes and GBV. A study conducted with school and college students in Patna suggested that exposure to family life or sex education was associated with better knowledge on reproductive health issues in comparison to

similarly aged adolescents who were not exposed to this specific educational intervention (Shekhar *et al.*, 2007). Similarly, an intervention to promote youth health in Goa demonstrated that with appropriate interventions, it is possible to change attitudes and behaviours related to gender stereotypes and GBV (Balaji, Andrews, Andrew, and Patel, 2011).

The findings also suggest that AEP should make concerted efforts to engage with boys and parents, especially mothers. Specific targeted interventions may also be needed with socially disadvantaged groups. Given the reasonably high access to internet among adolescents, the programme may invest in internet-based learning to reach out to larger numbers as well as reinforce important messages.

With improving school enrolment and retention rates, schools can serve as crucial spaces to inculcate and promote progressive attitudes among young people to challenge discrimination and violation related to gender and sexuality. Given the prevalence of high levels of GBV in present-day India, and continuing gender discriminatory norms, the findings presented in this paper make a strong case for mainstreaming initiatives such as the Adolescents' Education Programme in school education.

Appendix

Vignettes and statements for constructing index on challenging gender stereotypes	%	% boys	% girls
1. Rajan likes to do housework like cutting vegetables, washing dishes and cleaning. But when his friends come home, he hides this from them. He fears that the boys will tease him and call him a 'sissy' or a girl. Which of the following statements do you agree with?			
Rajan should stop doing housework (score= -1)	5.1	6.4	3.4
Rajan is right in hiding the housework from his friends (score=-1)	10.6	12.9	7.4
If he tells his friends, Rajan might be a good influence on them (score=1)	41.4	39.6	43.9
Rajan should feel proud that he does housework and not hide it (score=1)	71.1	83.1	76.1
2. Kavita has been good in sports. Suddenly, when she turned fourteen she became shy and embarrassed to wear sports clothes, or to run, play or cycle. What do you think Kavita should do?			
Wear whatever she feels comfortable in and continue to play, run, cycle, etc. (score=1)	75.2	70.7	81.5

Stop playing as there is no future in sports for girls (score=-1)	2.4	3.3	1.3
Discuss with her teacher or anyone she trusts why she is feeling like this (score=1)	52.6	49.3	57.0
Push herself to wear what all other sportsmen/sportswomen wear (score=-1)	16.6	20.7	10.8
3. Arif and Niloufer are twins. Both of them are good painters and want to become artists. Their parents encourage Niloufer but discourage Arif. They feel that Arif needs to think about earning enough to support a family in the future. What do you think?			
Arif should give up art as his parents are right (score=-1)	7.6	3.8	6
Arif should inform his parents that he will pursue his interest in arts (score= 1)	55.4	60.8	57.6
Both Arif and Niloufer should explore study as well as career options as artists (score=1)	64.0	71.4	67.1
Arif should continue painting secretly (score=-1)	11.7	6.1	9.3
4. The following are some statements that you may have often heard. Some of these statements are based on biological difference, while others are based on people's mindsets. Give your opinion for each statement. (Based on-)			
Girls find mathematics difficult. They are better suited for home sciences. People's mindset (score=1) Biological differences/ Not attempted (score=-1)	 86.1 13.5	 92.5 7.3	 88.8 10.9
Boys can handle technical abstract things much better than girls. People's mindset (score=1) Biological differences/ Not attempted (score=-1)	 71.5 28.1	 82.0 17.8	 75.9 23.8
Women become mothers, that is why they are better care givers than men. People's mindset (score=1) Biological differences/ Not attempted (score=-1)	 61.3 38.3	 60.7 39.1	 61.1 38.6
Women are more emotional than men People's mindset (score=1) Biological differences/ Not attempted (score=-1)	 55.0 44.7	 58.3 41.5	 56.3 43.4

Men are better than women at controlling their emotions and therefore do not cry People's mindset (score=1) Biological differences/ Not attempted (score=-1)	 55.3 44.4	 60.5 39.3	 57.5 42.3
All girls at an early age are interested in cooking, decorating and managing People's mindset (score=1) Biological differences/ Not attempted (score=-1)	 80.2 19.4	 85.7 14.1	 82.5 17.2
Challenging Gender stereotype index — higher value of index implies positive attitude related to challenging gender stereotypes: Mean 5.7 (s.d., 3.5) [range: -9, 12] [possible range: -12, 12]			
Vignettes and statements for constructing attitude on challenging gender-based violence	**%**	**% boys**	**% girls**
1. Monica and Sabina go to see a film. On the way out of the hall, they are teased and harassed by a man who passes obscene comments. Your advice to Monica and Sabina would be to:			
Confront the man and warn him: Unlikely/ circumstantial (score=1)	53.0	46.9	61.5
Seek support from others around (score=1)	33.4	37.6	27.7
Not go to see films in cinema halls (score=-1)	5.3	6.7	3.4
Go with parents or brothers, who can protect them (score=-1)	36.9	38.0	35.3
Complain to the cinema manager and insist they act to make the hall safe for women (score=1)	58.4	56.3	61.3
2. Mohit is ten years old. His uncle often comes over to stay. He brings lots of toffees and biscuits for him. He also insists that he will sleep in Mohit's room. At times he tries to touch him in ways Mohit does not like. Mohit's parents notice that he has become very quiet and withdrawn. Which of the following statements in your opinion are correct?			
Mohit is misunderstanding his uncle's affectionate behaviour (score=-1)	34.2	38.3	28.4
Mohit's uncle is trying to sexually abuse him (score=1)	23.2	25.7	19.8

Mohit's parents should try to understand why he has become so quiet and withdrawn (score=1)	59.8	52.3	70.3
Mohit's parents should keep quiet and not ask any questions as this could upset the uncle (score=-1)	5.7	7.2	3.7
Mohit's parents should not let the uncle be alone with him (score=1)	41.8	36.7	48.9
3. A male school games teacher frequently touches some girls longer than necessary while instructing them. He sometimes brushes their breasts. This makes them very uncomfortable. In your opinion the girls should:			
Keep quiet out of embarrassment (score=-1)	2.2	3.0	1.0
Talk to a teacher or parent they trust (score=1)	58.9	53.4	66.5
Make a complaint to the school authorities (score=1)	68.8	69.9	67.3
Discuss with other girls to find out if they have a similar experience (score=1)	42.2	37.5	48.8
Confront the teacher themselves: Unlikely (score=1)	22.0	20.5	24.1
Ignore out of fear of the teacher (score=-1)	2.7	3.3	2.0
4. Which are the circumstances where you think a man is justified in beating his wife?			
Not attempted	0.8	1.0	0.5
She argues with him or the family	9.0	11.2	5.9
She dresses in a manner to attract attention	7.2	9.4	4.2
She is unfaithful to her husband	11.8	13.8	8.9
She cooks badly	0.8	1.2	0.2
She spends money without permission	1.5	2.0	0.7
She gives birth only to daughters	1.7	1.4	2.1
She neglects her children (score=-1)	3.7	5.0	1.9
Under no circumstances should a man beat his wife (score=1)	63.6	55.0	75.6
Challenging gender-based violence index — higher value of index imply positive attitude related to challenging gender-based violence: Mean 4.0 (s.d., 2.6) [range: -5, 11] [possible range: -7, 11]			

References

Achyut, P., N. Bhatla, S. Khandekar, S. Maitra, and R.K. Verma. 2011. *Building Support for Gender Equality among Young Adolescents in School: Findings from Mumbai, India.* International Centre for Research on Women (ICRW), New Delhi.

Alexander, M., L.S. Garda, S. Kanade, S. Jejeebhoy and B. Ganatra. 2007. Correlates of Premarital Sexual Relationships among Unmarried Youth in Pune district, Maharashtra, India. *International Family Planning Perspectives*. Vol. 33. No. 4. pp. 150–59.

Balaji, M., T. Andrews, G. Andrew, and V. Patel. 2011. The Acceptability, Feasibility, and Effectiveness of a Population-based Intervention to Promote Youth Health: An Exploratory Study in Goa, India. *Journal of Adolescent Health*. Vol. 48. No. 5. pp. 453–60.

Bearinger, L.H., R.E. Sieving, J. Ferguson, and V. Sharma. 2007. Global Perspectives on the Sexual and Reproductive Health of Adolescents: Patterns, Prevention and Potential. *Lancet*. Vol. 369, pp. 1220–31.

Bhasin, S.K. and O.P. Agarwal. 1999. Perceptions of Teachers regarding Sex Education in National Capital Territory of Delhi. *Indian Journal of Pediatrics.* Vol. 66. pp. 527–31.

Contreras-Urbina, M. 2015. Measuring Gender-based Violence Experienced by Children and Adolescents: Instruments used in GBV Surveys and School-based Programme Evaluations. In *The Evaluation of Comprehensive Sexuality Education Programmes: A Focus on Gender and Empowerment Outcomes (*pp. 23–24). UNFPA, New York.

Duncan, O.D. 1957. Measurement of Population distribution. *Population Studies*. Vol. 11. pp. 27–43.

Dunne, M. and F. Leach. 2005. *Gendered School Experiences: The Impact on Retention and Achievement in Botswana and Ghana,* Researching the Issues Series No. 56. Department for International Development (DFID), London.

Gentleman, A. 2007. *Sex Education Curriculum Angers Indian Conservatives*. *New York Times,* 24 May 2007. Accessed from: http://www.nytimes.com/2007/05/24/world/asia/24iht-letter.1.5851113.html?pagewanted=all&_r=0

Heise, M., M. Ellsberg, and M. Gottmoeller. 2002. A Global Overview of Gender-based Violence. *International Journal of Gynaecology and Obstetrics*. Vol. 78, Supplement 1, pp. 5–14.

International Institute for Population Sciences and Population Council. 2010. *Youth in India: Situation and Needs, 2006–2007.* IIPS: Mumbai.

Jaya, M.J. and Hindin. 2007. Nonconsensual Sexual Experiences of Adolescents in Urban India. *Journal of Adolescent Health*. Vol. 40. No. 6. 573.e7-573.e14.

Jejeebhoy, S.J. and K.G. Santhya. 2011. *Sexual and Reproductive Health of Young People in India: A Review of Policies, Laws and Programmes.* Population Council: New Delhi.

Kaidbey, M. 2015. *A New Era for CSE: Focus on Human Rights and Gender in the Evaluation of Comprehensive Sexuality Education Programmes: A Focus on Gender and Empowerment Outcomes.* United Nations Population Fund (UNFPA), New York.

Krishnan, S. M.S. Dunbar, A.M. Minnis, C.A. Medlin, C.E. Gerdts, and N.S. Padian. 2008. Poverty, Gender Inequities, and Women's Risk of Human Immunodeficiency Virus/AIDS. *Annals of the New York Academy of Sciences*. Vol. 1136, pp. 101–10.

Laski, L., Z. Matthews, S. Neal, G. Adeyemo, G. Patton, A. Capasso, S. Gold, S. Petroni, L. Say, R. Khosla, V. Chandra Mouli, B.J. Ferguson, M. Melles, S. Kasedde, T. Oyewale, N. Yasrebi, S. Lehtimaki, D. Engel, S. Chalasani, P. Awasti, and L. Sharaf. 2015. Realising the Health and Well-being of Adolescents. *British Medical Journal.* 351, h4119.

Mahajan, P. and N. Sharma. 2005. Parents Attitude towards Imparting Sex Education to their Adolescent Girls. *Anthropologist.* Vol. 7. No. 3. pp. 197–99.

Marston, C. and E. King. 2006. Factors that shape Young People's Sexual Behavior: A Systematic Review. *Lancet.* Vol. 368. No. 15. pp. 81–86.

McManus, A. and L. Dhar. 2008. Study of Knowledge, Perception and Attitude of Adolescent Girls towards STIs/HIV, Safer Sex, and Sex Education: A Cross Sectional Survey of Urban Adolescent School Girls in South Delhi, India. *BMC Women's Health.* Vol. 8 No. 12.

Ministry of Women and Child Development (MWCD), Government of India. 2007. *Study on Child Abuse, India.* pp. 71–103.

Rohrbach, L.A., N.F. Berglas, P. Jerman, F. Angulo-Olaiz, C. Chou, and N.A. Constantine, 2015. A rights-based Sexuality, Education Curriculum for Adolescents: 1-year outcomes from a Cluster-randomised Trial. *Journal of Adolescent Health.* Vol. 57, pp. 399–406.

Santhya, K.G. and S.J. Jejeebhoy. 2012. *The Sexual and Reproductive Health and Rights of Young People in India: A Review of the Situation.* Population Council: New Delhi.

Sen, G., A. George., and P. Ostlin. 2002. Engendering Health Equity: A Review of Research and Policy. In G. Sen, A. George, and P. Östlin (Eds.), *Engendering International Health — The Challenge of Equity.* MIT Press: Cambridge.

Shekhar, M., S. Ghosh, and P. Panda. 2007. Exploring Safe Sex Awareness and Sexual Experiences of Adolescents in Patna. *Economic and Political Weekly.* Vol. XLII. No. 48. pp. 49–55.

Srinivasan, A. 2011. *Gender Violence in India.* A Prajnya Report 2010. Accessed from www.prajnya.in, on 23 September 2015.

Thakor, H.G. and P. Kumar. 2000. Impact Assessment of School-based Sex Education Programme amongst Adolescents. *Indian Journal of Pediatrics.* Vol. 67. pp. 551–58.

Thomson, M. 2002. Boys will be Boys: Addressing the Social Construction of Gender. In Cleaver Frances (Ed.), *Masculinities Matter! Men, Gender and Development.* Zed Books, London and New York.

United Nations Population Fund (UNFPA) and National Council of Educational Research and Training (NCERT). 2010–11. *Concurrent Evaluation of the Adolescence Education Programme.* Accessed from: http://www.aeparc.org/resources/aep-evaluation-full-report

Unni, J.C. 2010. Adolescent Attitudes and Relevance to Family Life Education Programmes. *Indian Journal of Pediatrics.* Vol. 47. pp. 176–79.

Verma, J., R.K. Pulerwitz, V. Mahendra, S. Khandekar, G. Barker, P. Fulpagare, and S.K. Singh. 2006. Challenging and Changing Gender Attitudes among Young Men in Mumbai, India. *Reproductive Health Matters.* Vol. 14. No. 28. pp. 135–43.

Yoga Education in Schools and Teacher Education
Some Initiatives

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Abstract

The word "Yoga" is derived from the Sanskrit word "yuj" which means "join" or "unite". As an end, yoga signifies "integration of personality" at the highest level. Yoga is an ancient science and art of maintaining health and harmony of body and mind. It has been rediscovered having a potential role for developing physical, mental, emotional and social health of the children. Yoga has been highlighted even in the National Policy on Education, 1986. However, due importance was not given to yoga in the school curriculum. For the first time, adequate emphasis has been given to yoga in the National Curriculum Framework (NCF) 2005, by adding yoga to the curriculum and emphasising that the time allocated for games and yoga must not be reduced or taken away under any circumstances. In this paper, an attempt has been made to present the theoretical aspect of yogic practices, policy initiatives related to yoga in school education in terms of curriculum framework, development of syllabi and textual material. Initiatives taken at the teacher education level have also been reflected.

Introduction

Health is a positive concept. It does not mean merely freedom from disease, but it also includes a jubilant and energetic feeling of well-being with an amount of general resistance and capacity to easily cultivate immunity against specific offending agents. Good health is the right of every human being. But this right depends on individual, social and environmental factors.

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However, along with these factors, we can develop a better immune system and a better perception of the self by adopting the right kind of lifestyle, so that other conditions do not affect us adversely in achieving good health.

There are many modern and indigenous methods and disciplines that can help us to remain healthy and successfully fight with diseases. For example, the system of yoga, naturopathy, ayurveda, unani, homeopathy and siddha can be quoted among indigenous systems, whereas allopathic system is quoted as the modern and popular medical system. Yoga is one of the most powerful drugless systems of treatment. It has its own concept of wellness which has been scientifically understood and presented by many. Yoga can be adopted as lifestyle for promoting our physical and mental health. Yoga, if effectively introduced at the school level, would help to inculcate healthy habits and a healthy lifestyle to achieve good health.

What is Yoga?

The word "Yoga" is derived from Sanskrit word *"yuj"* which means "join" or "unite". This may be taken as the union of body, mind and soul, and is used in the literature both as an end as well as means. As an end, yoga signifies "integration of personality" at the highest level. As means, yoga includes various practices and techniques which are employed to achieve the development of such integration. These practices and techniques are means in the yogic literature and are also referred collectively as "Yoga".

Yogic practices help—

- in developing an understanding of the yogic practices and apply this understanding accordingly in one's life and living.
- in developing a healthy habit and lifestyle in children.
- in inculcating humane values among children.
- in developing physical, emotional and mental health through yogic activities.

Yoga—Its History

Yoga has its origin thousands of years ago in India. It has originated from a universal desire towards attaining happiness and getting rid of sufferings. According to yogic lore, Shiva is considered as the founder of Yoga. A number of seals and fossil remains of Indus Valley Civilisation, dating back to 2700 BC, indicate that yoga was prevalent in ancient India. However, systematic reference of yoga is found in Patanjali's *Yogadarshna*. Maharishi Patanjali systematised the yogic practices (MDNIY, 2010). After Patanjali, many sages and yogis contributed to its development and as a result, yoga has now spread all over the world. In this sequence, on 11 December 2014, the United Nations General Assembly (UNGA) with 193 members, approved the proposal to celebrate 21 June as the "International Yoga Day".

General Guidelines for Yogic Practices

Yoga may be introduced from the primary level onwards in informal ways, but formal introduction of yogic exercises should begin only from Class VI. The yoga curriculum must address itself to the children and there should be some hints to them to take up a study of this subject on their own, in addition to what is being taught in the class. Yogic activities can be done by all children including children with special needs. However, children with special needs should perform these activities in consultation with yoga experts/yoga teacher as per their capacity (NCERT, 2015a, 2015b).

- The yogic practices should start with a quiet mood, which could be attained by reciting a short prayer. Select a well-ventilated, clean and non-disturbing place for practice. Yogic practices should not be performed on a hard surface. A *durry*, a mat or a blanket can be used for this purpose.
- It is essential that body should be prepared by activities such as ankle bending, knee bending, finger movements, hand clenching, wrist bending, wrist rotation, elbow bending, shoulder rotation and eye movement. After this, *Surya Namaskara* can be practised.
- Regularity of practice is essential both in the physical and mental aspects of yoga. Patience is an important requirement for yoga. Do not despair if one does not succeed today in doing a certain asana or in following the right principle of conduct. Perseverance in efforts is needed. Success will come with time.
- One should not compete but cooperate. A spirit of competition is a definite hindrance on the path of yoga. Competition feeds our ego, while yoga helps us to rise above our ego.
- Yogic practices should be learnt under the guidance of experienced teacher. Most of the yogic practices should be practised on an empty or on a very light stomach. Early morning is the ideal time for yoga practice, but it can also be practised in the evening.
- There are some limitations of yogic practices. If you are suffering from any problem or chronic disease, inform your teacher before starting yogic practices.
- Yogic practices can be practised at home, once they are properly learnt in the school.
- Yoga has a broader meaning. Therefore, apart from asana and pranayamas, one should also practise moral and ethical values in life.

Common Yogic Practices

Yogic texts propound several practices such as *yama, niyama,* asana, pranayama, *pratyahara, shatkarma* (cleansing practices), mudra, *bandha, dharana* and dhyana (meditation).

Commonly used practices are as follows (NCERT, 2015a, 2015b):

(i) *Yama and Niyama*: These are initial sets of principles that are concerned with our conduct in personal and social life. These are related to ethics and values that help us in following high standards in our personal and social life. Principles of *yama* are concerned with one's social life; while the principles of *niyama* are concerned with one's personal life. The five principles of *yama* are: *Ahimsa* (non-violence), *Satya* (truthfulness); *Asteya* (non-stealing); *Brahmacharya* (abstinence) and *Aparigraha* (non-collectiveness). The five principles of *niyama* are: *Shaucha* (cleanliness); *Santosha* (satisfaction); *Tapas* (austerity); *Swadhyaya* (study of good literature and knowing about the "self") and *Ishwarpranidhana* (dedication to the God/Supreme power).

(ii) *Asanas*: The term asana means sitting in a particular posture, which is comfortable and which could be maintained steadily for a long time. Asana gives stability and comfort, both at physical and mental level. There may be variations in the techniques of some of the asanas depending upon the following yoga institutions. Asana may broadly be classified into three categories: *(a) Cultural or Corrective asana; (b) Meditative asana; (c) Relaxative asana.*

Cultural asanas can be further classified into two groups, depending on the effects produced: (i) asana that work through and on the spine and visceral organs; (ii) asanas that work through the skeletal muscles, ligaments and joints. *Meditative asanas* are those asanas which are aimed at sitting quiet and are used for higher practices in yoga. *Padmasana, swastikasana, sukhasana* and *siddhasana* can be put in this category.

Relaxative asanas are those which remove tension and bring about physical as well as mental relaxation. The important asanas in this category are *shavasana* and *makarasana*.

Guidelines for the practice of asanas

- Generally, the asanas are practised in the sequence of standing, sitting, prone-lying and supine-lying position. Though there is another version which follows a different sequence.
- Asanas must not be practised in haste or by applying any sort of undue force and under any urgency. Jerks should be avoided.
- Asanas should be performed with body and breath awareness. There should be coordination between breath and movement of body parts.
- As a general rule, inhale while raising any part of the body and exhale when bending down.
- The practitioner has to follow instructions sincerely with optimal attention.
- Final position should be attained slowly, step-by-step, and should be maintained with closed eyes for developing an inward awareness within the body.

- Final position of asanas must be maintained for as long as one is comfortable. One should maintain the final posture according to one's own limitations and should not go beyond one's capacity.
- During maintenance of final position of asana, there should ideally be no tremors or any type of discomfort.
- Regular practice is essential. Body starts listening to command only after a regular and diligent training for a sufficient period of time. If regularity is disturbed due to some reasons, then one should resume the practice within minimum time.
- In the initial phase, asanas involve de-conditioning and reconditioning processes. Therefore, initially, one may feel a little fatigued after the practice but after a few days' practice, body and mind get adjusted and one starts experiencing a feeling of well-being and happiness again.

(iii) *Pranayama*: Pranayama consists of the breathing techniques which are related to the control of breath or respiratory process. Pranayama, popularly known as "yogic breathing", involves a conscious manipulation of our breathing pattern. The health of the respiratory system depends upon the quality as well as the quantity of air inhaled by the person. It also depends on the rhythm and completeness of the breathing. Through pranayama, a practitioner advantageously works with her/his respiratory, cardiovascular and the nervous system which bring about physical and emotional stability, and peace of mind.

Guidelines for the practice of pranayama:

- Pranayama should be done preferably after the practice of asanas.
- Breathing in pranayama should be done through the nose only except *sheetali* and *sheetkari.*
- During pranayama, there should not be any strain in facial muscles, eyes, ears, neck, shoulders or any other part of the body. During pranayama, eyes should remain closed.
- In the beginning stage, one should learn to maintain in gradual manner the 1:2 ratio of breathing, which means exhalation time should be double the inhalation time. However, while practising pranayama, do not make haste in resorting to any of the above mentioned ideal ratio.

(iv) *Pratyahara*: Yogic practice of *Pratyahara* means withdrawal of senses from sense organs in order to control mind. In *pratyahara,* the awareness about the external surroundings is withdrawn and is taken to inside. Introspection, studying good books are some practices which can help in *pratyahara.*

(v) *Bandha and Mudra*: *Bandha* and mudra are the practices involving manipulation of certain semi-voluntary and involuntary muscles

in the body. These practices bring about voluntary control and tone up the internal organs.

(vi) *Shatkarma/Kriya* (Cleansing Process): *Shatkarma* means six *karmas* or *kriyas*. The *karma/kriya* means "action". *Shatkarma* consist of purificatory processes which cleanse the specific organs of the body by detoxifying them. The purification helps to keep the body and mind healthy. There are six cleansing processes described in *hatha yogic* texts. These are *Neti, Dhauti, Basti, Trataka, Nauli and Kapalabhati*. These are used to clean the internal organs or systems by using water, air or manipulation of certain organs of the body.

Guidelines for the practice of *kriyas*:

- *Kriyas* should be done on an empty stomach. Therefore, these should be done preferably in the morning.
- *Kriyas* should be performed under the supervision of an expert.
- Each *kriya* has a specific process, which should be strictly adhered to.
- Different things like water, salt, air and manipulation are used for each *kriya.*

(vii) *Meditation*: "Meditation is a practice which helps in concentration of the body and mind. In meditation, concentration is focused for a long time on a single object like tip of the nose, space between eyebrows, etc. It develops a sense of well-being and improves memory and decision making power in the person" (Bhogal, 2001).

Guidelines for the practice of meditation:

Practice of asana and pranayama, if performed before meditation, helps in developing an ability to sit in one position for a considerable period of time in meditation.

- Select a peaceful, calm and quiet place for the practice of meditation.
- Allow your eyes to get closed gently to enter into an inner awareness.
- A meditative practice invites many thoughts, memories and emotions may surface on the mind. Remain non-reactive to them.
- As one continues with this process for some time, one may feel an abstract and a non-specific awareness of the whole body. Now continue with the whole body awareness. In case of any difficulty, go back to the breathing awareness.
- In the beginning, it is generally difficult to observe the breath. If mind wanders, do not feel guilty. Slowly, but firmly, bring your attention to your breath.

Policy Initiatives Related to Yoga in School Education

(i) National Policy on Education, 1986 (revised 1992)

Yoga in para 8.21 states "as a system, which promotes an integrated development of body and mind, Yoga will receive special attention. Efforts will be made to introduce Yoga in all schools. To this end, it

will be introduced in teacher training courses."

(ii) Position Paper on National Focus Group on Health and Physical Education — Yoga and Physical Education for Fitness and Health of Children (NCERT 2006)

In para 2.5, it is stated "Both yoga and physical education contribute to not merely the physical development of the child, but have a positive impact on the psycho-social and mental development as well. Both yoga and physical education have not been given the due importance in the school curriculum and neither has their contribution to the health and overall development of the child been adequately acknowledged. The constraints faced by yoga and physical education are related to a number of factors that affect the quality of school education in general, and health and physical education in particular."

Although the number of studies concerned with yoga and physical education are very few, the available studies throw some light on the status of this area. There is a tendency for yoga to be reduced to mere physical exercise that defeats the very essence of this practice. At present, there is a shortage of trained yoga teachers that is related to the non-availability of adequate number of institutions that have the capacity and expertise for this purpose. If yoga is to be effectively integrated, then the government would need to overcome the shortage of yoga teachers. In the interim period, teachers who are trained in physical education need to be trained in yoga education. It may be worthwhile to review the syllabus and pedagogy of the teacher's training programme offered by different colleges and deemed universities in this area. Apart from the concern about the availability of trained teachers, there is also the negative attitude of administrators at the central, state and district levels within the education department and authorities within schools with respect to both yoga and physical education. The experience of both these areas have been that where there is a supportive school atmosphere, the transaction of both these subjects has by and large been effective, but examples of these are rather a few in number (NCERT, 2006).

(iii) *National Curriculum Framework (NCF) 2005*

As per the NCF 2005, Health and Physical Education adopts a holistic definition of health within which physical education and yoga contribute to the physical, social, emotional and mental development of a child. Mid Day Meal Programme and medical check-ups need to be made a part of the curriculum and education about health to address the age-specific concerns at different stages of development. The idea of a comprehensive school health programme that includes six major components, *viz.*, medical care, hygienic school environment, school lunch, health and physical education are important for the overall development of the child, and hence need to be included in the curriculum. The more recent addition to the curriculum is yoga. The entire group must be taken together as

a comprehensive health and physical education curriculum, replacing the current fragmentary approach in schools today. As a core part of the curriculum, the time allocated for games and for yoga must not be reduced or taken away under any circumstances. This subject area, consisting of health education, physical education and yoga, must be suitably integrated into the elementary and secondary pre-service teacher education courses. The potential of the existing physical education training institutes should be reviewed and utilised adequately. Similarly, their appropriate syllabi and teacher training for transaction of yoga in schools need to be reviewed and reformulated. Yoga may be introduced from the primary level onwards in informal ways, but formal introduction of yogic exercises should begin only from Class VI onwards (NCERT, 2005). All interventions, including even health and hygiene education, must rely on the practical and experiential dimensions of children's lives.

Initiatives Taken So Far

(i) Syllabus and Textbooks on Yoga for School Education

The National Council of Educational Research and Training (NCERT), on the eve of International Yoga Day, observed on 21 June 2015, developed syllabus and textual material on yogic activities for students of Upper Primary and Secondary stages. The syllabus for Classes VI to X in brief is given below (NCERT, 2015a, 2015b).

Class VI	
Theme/ Sub-Theme	**Activities/Processes**
Yoga for Health	*Surya Namaskara* **Asanas** — *Tadasana, Vrikshasana,Utkatasana, Vajrasana, Swastikasana, Ardhapadmasana, Niralamba Bhujangasana, Ardha–halabhasana, Makarasana,Uttanapadasana, Pawanmuktasana, Shavasana, Breathing with Awareness* **Kriya** — *Trataka* **Meditation**
Class VII	
Yoga for Physical Fitness	What is flexibility? Yogic Practices to Enhance Flexibility *Surya Namaskara* **Asanas** — *Tadasana, Hastottanasana, Trikonasana, Atichakrasana, Padmasana, Yogamudrasana, Paschimottanasana, Dhanurasana, Makarasana, Vajrasana, Chakrasana, Ardhahalasana, Shavasana* **Kriya** — *Kapalabhati* **Pranayamas** — *Anuloma-viloma, Bhastrika* **Meditation**

Class VIII	
Yoga for Concentration	Yogic Practices for Health and Harmony **Asana** — *Garudasana, Baddhapadmasana, Gomukhasana, Ardhamatsyendrasana, Bhujangasana, Shalabhasana, Makarasana, Matsyasana, Naukasana, Setubandhasana, Halasana, Shavasana* **Kriya** — *Agnisara* **Pranayamas** — *Anuloma-viloma, Seetkari, Bhramari* **Meditation**
Class IX	
Introduction	**Discussion** on What is Yoga, Importance of Yoga and **Guidelines for Yogic Practices**
Personality Development through Yoga	*Surya Namaskara* **Asanas** — *Tadasana, Katichakrasana, Simhasana, Mandukasana, Uttana Mandukasana, Kukkutasana, Akarna Dhanurasana, Matsyasana, Bhujangasana, Shalabhasana, Dhanurasana, Sarvangasana, Halasana, Shavasana* **Kriyas** — *Kapalabhati, Agnisar* **Pranayamas** — *Anuloma-viloma, Bhastrika* **Bandha** — *Uddiyana* **Meditation** — Meditation, Introspection
Class X	
Yoga for Stress Management	Yoga for Stress Management **Asanas** — *Hastottanasana, Padhastasana, Trikonasana, Shashankasana, Ushtrasana, Ardhamatsyendrasana, Bhujangasana, Shalabhasana, Sharvangasana, Matsyasana, Makarasana, Shavasana* **Kriyas** — *Kapalabhati* **Pranayamas** — *Anuloma-viloma, Bhramari Pranayama, Bhastrika Pranayama* **Meditation** **Yoga for Healthy Living** *Shirshasana, Bakasana, Mayurasana* (for boys) *Hamsasana* (for girls), *Uttana Kurmasana* (for boys)

(ii) Textual Materials on Yoga for School Education

Two textual materials have been developed. These are as follows:

Yoga: A Healthy Way of Living (Upper Primary Stage)

This textual material is meant for the students of Upper Primary stage

(Classes VI to VIII). It includes various yogic activities to be performed by students of this stage. These activities are an integral part of the syllabi of Health and Physical Education brought out by NCERT. Yoga has been considered to be introduced from the Primary level onwards in informal ways, but formal introduction of yogic exercises should begin only from Class VI onwards. In this textual material, practices of asanas and pranayama have been given importance. Besides asanas and pranayama, *kriyas* and meditation have also been included (NCERT, 2015a).

Yoga: A Healthy Way of Living (Secondary Stage)

This textual material is meant for the students of Secondary stage (Classes IX to X). This book includes three units. Unit 1 is an introductory unit, which explains in brief the origin and history of yoga and the general guidelines for doing yogic activities. The other two units are for students of Classes IX and X respectively. Unit 2 is on personality development and Unit 3 is on managing stress among adolescent children through yogic practices and adopting other yogic principles. Developing physical fitness, emotional stability, concentration and mental development of students through yoga have also been given due emphasis. The book is more practice-oriented,aligning with the syllabi of yoga and holistically dealing with "Health and Physical Education". Each unit gives a brief description of asanas, pranayamas, *kriyas* and meditation, followed by the successive actions or steps of these yogic practices (NCERT, 2015b).

Both the books are practice-oriented aligning with the syllabi of yoga and holistically dealing with "Health and Physical Education". The material is explained in simple language and also profusely illustrative, so that the students can learn and practise it even at home. This material can also be used by others who wish to learn some common and important yogic practices for healthy living. The success of this effort will depend on the steps that school principals and teachers will take to encourage children to do these practices and reflect on their learning.

(iii) Scheme on Yoga Olympiad

The Ministry of Human Resources Development and NCERT are conceptualising "Yoga Olympiad" as a venture with the objective to promote the awareness of yoga and to build up a network of yoga students, teachers and yoga practitioners at the national level, to spread the message of yoga as a science of holistic living. Apart from physical demonstration of *yogasanas,* the Olympiad will also assess the individual's knowledge, grasp of concepts, definition of yoga and its various techniques for total growth of individual at the physical, mental, emotional and spiritual levels.

Participation

All government, government-aided schools will be eligible to participate in the olympiad. Kendriya Vidyalaya Sangathan and Navodaya Vidyalaya Samiti schools will conduct Yoga Olympiad at their institutional levels and will send their teams to national level directly:

Target Group

Upper Primary stage comprising students from Class VI to Class VIII will participate with age group:

- 10 to 14 years Girls (Upper Primary stage)
- 10 to 14 years Boys (Upper Primary stage)

Secondary stage comprising students from Class IX to Class X with age group:

- 14 to 16 years Girls (Secondary stage)
- 14 to 16 years Boys (Secondary stage)

Organisation of Yoga Olympiad from School to State/UT levels will be the responsibility of respective States/UTs. States/UTs are free to organise Yoga Olympiad as per their norms and instructions. This is only an advisory for States/UTs and they are free to follow or can develop their own scheme. National level will be the final and culminating level of Yoga Olympiad, where the best of State/UT entries will showcase their performance. States and UTs shall select the best teams for participating at the national level. At this stage, best four girls and best four boys of Upper Primary and best four girls and best four boys of Secondary level will participate (I, II, III position winners as main participants and IV position winner as Substitute/Extra). In all 16 students from each State/UT/KVS/NVS will participate in this Olympiad. Other aspects of the scheme are being finalised.

Yoga in Teacher Education Programmes

The National Council for Teacher Education (NCTE), while revising the norms and standards of teacher education in the country, as well as curricular provisions, introduced Yoga Education as an essential area of study in all teacher education programmes recognised by the NCTE (Government of India, 2014).

(i) Self-Learning Materials on Yoga Education

As a first step, self-learning materials on Yoga Education components for D. El. Ed. (Diploma in Elementary Education), B.Ed. (Bachelor of Education), and M.Ed. (Master of Education) have been developed (www.ncte-india.org). These materials will be used by 18,000+ teacher education institutions and over 14 lakh would-be teachers every year. These are as follows.

(ii) D. El. Ed. Programme (Special Features)

It is a four credit course bifurcated into theory (two credits) and Practicum (two credits). The theory part is to be studied by the target group (would-be elementary teachers) on

their own, whereas for practicum, they are required to practise the relevant techniques (Asanas, Pranayamas, etc.) under the guidance of an adept practitioner. The course comprises the following seven units of study.

- Introduction to Yoga and Yoga Practices
- Introduction to Yogic Texts
- Yoga and Health
- Applied Yoga for Elementary Education
- Yoga and Cognitive, Affective Development
- Yoga and Physical Development
- Guidelines for Practicum

(iii) B.Ed. Programme (Special Features)

- It is a two-credit course, bifurcated into theory and practice.
- It comprises four units of study. The first three units provide a theoretical base to yoga, yogic texts and their application in maintaining both physical and mental health of the practitioner.
- The fourth unit (practicum) contains systematic guidelines for practising Yoga techniques Asanas, Pranayamas, *Kriyas,* Mudras, etc., which are well illustrated with the help of photos and highlighting the special instructions and precautions, along with their specific benefits (physical, emotional stability).

(iv) M.Ed. Programme (Special Features)

- It is a two-credit course, further bifurcated into: (i) application of yogic practices for development of self, personality and for managing the stress and the (ii) guidelines for practicum all the yogic practices recommended in the first three units and well-illustrated with the help of appropriate photos of different postures, coupled with special instructions for practising these.

National Yoga Meet for Deans and Heads of Departments of Education

Above 200 delegates from all over the country attended the National Meet to chalk out Yoga Education held at S-VYASA University, Bengaluru with a two-fold aim in view:

(a) To orient the Deans and Heads of Departments of Education of different universities and the Directors of the State Councils of Educational Research and Training of different states towards the relevance and nature of Yoga education and Yoga practices in the lives of teacher educators and teachers, so that they can act as leaders to effectively implement these curricular provisions on Yoga education in different teacher education institutions.

(b) To chalk out practical/pragmatic strategies and future "plan of action" for implementation in the country, in consultation with delegates and experts on Yoga education, who have been

invited from different parts of the country.

Some of the themes discussed during the meet are as follows:

- Understanding yoga and yogic practices including both *Patanjali* yoga and *Hatha* yoga practices.
- Yoga and Health — both physical and mental.
- Application of yoga in promoting concentration, creativity and memory, yoga and nutrition.
- Yoga and stress management, yoga and personality development, and understanding the self.
- Practising some select yoga techniques.

Yoga in National Education Policy 2015

Majority of states report that Health and Physical Education has been implemented as a compulsory subject from Classes I to X. However, researches show that in practice, this is not happening. The National Education Policy 2015 has spelt out whether the nomenclature health, physical education should continue and sports and yoga components remain an integrated manner in school education or should yoga be an independent subject in school curriculum.

To sum up, the aim of yoga thus, at the school as well as at the teacher education levels, is to encourage a positive and healthy lifestyle for physical, mental and emotional health of children. Yoga helps in the development of strength, stamina, endurance and high energy at physical level. It also empowers oneself with increased concentration, calmness, peace and contentment at the mental level, leading to inner and outer harmony.

References

Bhogal, R.S. 2011. *Yoga and Modern Psychology*. Kaivalyadhama Ashram Lonavala, Dist. Pune, Maharashtra, India.

Gharote, M.L. 2012. *Applied Yoga*. Kaivalyadhama Ashram, Lonavala, Maharashtra, India.

Government of India. 2014. NCTE 2014 Regulations.

Morarji Desai National Institute of Yoga (MDNIY). 2010. Yoga Teachers' Manual for School Teachers.

MHRD.1986. *National Policy on Education, 1986* (revised in 1992). New Delhi.

NCERT. 2005. National Curriculum Framework. New Delhi.

——. 2006. Position Paper National Focus Group on Health and Physical Education, New Delhi.

——. 2015a. *Yoga: A Healthy Way of Living (Upper Primary Stage)*. New Delhi.

——. 2015b. *Yoga: A Healthy Way of Living (Secondary Stage)*. New Delhi.

Transforming Urban Public* Schools

A Challenge for School Leadership

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Abstract

School leaders of urban government schools are confronted with multitude of challenges. Urban schooling is highly differentiated along socio-economic lines and government schools are perceived to be the last resort of those poor sections who cannot afford even low cost private schools. This leads to low self-esteem and low self-worth among school teachers and students. This hugely demoralises children and may drive them to engage in activities what a few sociologists term "counter culture" to school. In addition, urban schools cater to children from very diverse backgrounds ranging from language, religion, caste, region, etc. Quite often, children attending government schools are first generation learners and seldom experience literate ambience in their daily lives. Consequently, urban schools are likely to face enormous challenges in ensuring enrolment and regular attendance of children, achievement of learning levels. Further, urban government schools also suffer from inadequate and dilapidated infrastructure, school locations not conducive to children and learning, poor inspection and support systems for teachers and school leaders, etc. These challenges put enormous pressure on school leaders in ensuring that children attend schools and learn basic literacy and numeracy skills. Against this background, this paper makes an attempt to understand the distinct characteristics of urban schools and their students. The role and challenges faced by school leaders in urban areas in improving the functioning of schools

* "Public" schools used to mean "government" schools and both terms are used interchangeably. In Indian context, however, "public" is often used to refer to private schools. The present refers to government school as public school.

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to meet the learning and psychological needs of children are discussed. The gaps in the professional preparation of school leaders are identified. The school leaders need to be visionary and innovative for transforming the schools.

Introduction

Public (government) schools in urban areas are in a precarious situation. They are entrusted with the onerous task of educating children from poor, and of socially and ethnically downtrodden groups, migrants, who often happen to be first or at best second generation learners. School leaders of public schools encounter many challenges in discharging their responsibilities. The public school leaders do not have adequate mandate to ensure teachers do their job properly. The motivational factors within the system or leverages for a school leader within structures of urban schooling for bringing about transformation are largely absent. The segregation in urban schooling relegated public schools to residual status. Many a time, infrastructure in public schools is either bare minimum or in a dilapidated state. The public schools are either overcrowded with children or have insufficient teachers to function normally. Over and above this, the government school leaders can seldom expect cooperation or participation from the community. The community is more likely to be dispersed on wide geographical areas and also less likely to have internal cohesion. Further, the socio-economic background of children attending government schools is not distinctly lower but also diverse with multiple forms of deprivation. Orfield and Lee (2005) observed that segregation and poverty underlie larger issues in urban education systems. Urban education system depicts not only the diversity of student population but also the social chasm between the teacher and student, as generally teachers do not belong to the community to which the children belong. This is especially true of urban schools in India. Most of the teachers belong to the middle and upper middle class, whereas the children belong to the poor socio-economic background, which creates a distance between them.

More than ever, schools have students from dozens of regional, cultural, religious and linguistic backgrounds. Diversity presents a challenge to school heads to find effective ways for integration and transforming the schools to meet the needs of all students. It places a premium on school leaders to think and act beyond their customary duties and functions and take a leadership position, in which the school vision needs to be formulated in collaboration with all the team members, which include teachers, students, parents and community. In this context, transforming urban schools to achieve better student learning outcomes and education experience for children, calls for better preparation of school leaders.

The school leadership in urban government schools is a challenging position that requires a range of highly developed competence, as well as the core values. Against the above background, the present paper makes an attempt to understand the distinct characteristics of urban schools and its students, and also focuses on how the school heads can deal with such diverse population. The paper argues that the school leaders are the centre point for bringing the transformation in schools, as has also been described in the research literature. It is also pinpointed that there is a need for capacity building of the school heads as they understand the local context and issues that their school is faced with. Gaps in the preparation of school leaders are identified and some of the ways through which the school heads can work towards bringing the transformation are discussed.

Significance of School Heads in Schools: What does the Previous Research Say?

Number of researchers have highlighted the significance of school heads in school transformation, especially those leading the disadvantaged schools. Scholars agree that principals are the backbone of any school and they are the central figures in schools. Sergiovanni (1995) writes that "no other school position has a greater potential for maintaining and improving quality schools" (p. 83). Beck and Murphy (1993) observe that the School Principal — also known as the middle manager and the site administrator— is the major influence on whether education is effective or ineffective; whether morale is high or low; whether the school climate is positive or negative; whether personnel are satisfied or dissatisfied; whether students achieve or don't achieve; whether parents and the public are cooperative or uncooperative; and whether there is effective or ineffective management and leadership (p. 164).

Qualitative studies of effective schools have unequivocally established the linkage of school quality to the importance of school leadership roles and how they perform their multifaceted role. Whether they believe in *status quo* or do they lead the school with a clear vision? Do they take risk and critically reflect on the problems they encounter and try to find solutions in collaboration with their team? Hall *et al.* (2002) observe that school leaders are drivers of school improvement, determiners of achievement focus, and leaders of the school community. School leaders set the tone for their buildings, provide leadership and direction for their schools' instructional programmes and policies, and sustain professional development for school personnel and themselves, and nurture personalised school environments for all students (Tirozzi, 2001). School leaders, in sum, set forth the conditions necessary for teachers to implement change, the integral component of the school improvement process (Zepeda, 2007).

A growing body of research indicates that school leaders, particularly principals, can exert a measurable, though indirect, positive influence on student achievement (Leithwood and Riehl, 2003). Moreover, there is evidence that high quality leadership is especially important in schools serving low socio-economic youngsters who have often been at the greatest risk for academic failure (Scheerens and Bosker, 1997). In aggregate, leadership effects on student achievement appear to account for about 5 per cent of the overall variation in pupil test scores, yet this relatively low figure represents almost 25 per cent of all in-school variables over which educational policy-makers have some control (Hallinger and Heck, 1996), thus making leadership a variable of singular importance. Louis *et al.* (2010) also corroborate earlier findings and observe that leadership is second only to classroom instruction, among all school-related factors that contribute to what students learn at school. Leadership effects on student learning occur largely because leadership strengthens professional community, in turn, fosters the use of instructional practices that are associated with student achievement (Louis *et al.,* 2010, p. 10). Moreover, there is evidence that high quality leadership is especially important in schools serving low socio-economic youngsters who have often been at the greatest risk for academic failure (Scheerens and Bosker, 1997). Sharma (2011, 2015) observes that successful leadership is not related to holding a position only, but rather acquiring leadership skills along with the ability to emphatically implement those skills. The author advocates that school leaders need humanistic skills, more than the technical skills, such as communication skills, comfort, empathy, decision-making, influence, time management, self-management and commitment. An extensive review of the researches on school leadership led Harris (2005) to believe that one of the relatively unexplored areas that remains to be studied is the understanding from contextual differences between schools and how that influences the forms of leadership that seem to operate within these schools.

However, research on school leadership in India is still in its nascent stage. The research studies are few in number. Much of the research has focused on managerial and administrative aspects of school leaders. Review of leadership studies in the past six decades has revealed that most studies revolve around studying the personal characteristics, qualities, skills, values, behaviour, and leadership styles of school leaders.

Govinda (2006) conducted a diagnostic study to obtain a comprehensive picture of the roles of head teachers in school management, in six states of India: Assam, Karnataka, Kerala, Madhya Pradesh (MP), Mizoram and Uttar Pradesh (UP).

The findings reveal that most of the head teachers, hamstrung by lack of a clear set of guidelines regarding their managerial role and inadequate staff strength, have not been able to evolve a decentralised internal management system. Even in the biggest schools, there is an absence of regular interaction between the teachers and the head teachers. Constrained by the external controls exercised by the Department of Education, the head teachers of government schools do not have much scope to exercise their authority in various dimensions of school management. Majority of the head teachers face a major financial problem in managing their institutions. The study also finds out that there has been inadequate monitoring of head teachers' performance. No feedback mechanism has been evolved to keep the head teachers focused on their role as managers. No idea-shared forum has been instituted to help them experiment and innovate. Another study, Diwan (2009) highlights that school principals are of crucial importance for the improvement of schools as long as the onus of taking decision for schools lay with them. According to the study, empowering the school heads who can take school-based decisions necessitates vital decisions at the policy levels. In this context, the study discusses certain policy decisions that need to be taken up in a hierarchical and bureaucratic model and the areas of capacity building exercises that need to be conducted to help school leaders meet the demands emerging from the social and educational scenario of the country.

Pushpanadham (2006) focuses on the principles and practices of school-based management for school effectiveness. The author highlights that educational leadership is identified as an important factor for quality education and developing countries have focused on this important factor and initiated systematic training and development programmes for their leaders. Moreover, the latest educational policies advocate decentralised educational management, and any educational reform will be successful with both an evolution of institutional structures and specialised training and development programmes for education professionals. One strategy for achieving these goals is found in School-based Management (SBM), a model of decentralised school administration that provides clear guidelines. Professional leadership is essential for successful implementation of decentralised management of education at all levels, which could be built through the capacity building programmes. At this juncture, a systematic and need-based professional preparation of principals, teachers, parents and members of the community is needed.

A renewed interest in the effects of leadership on pupil performance comes at a time when the data from various sources, such as

ASER reports and NCERT Baseline Achievement Surveys across the country reveal that the learning competency of students is very low and students do not acquire required competency corresponding to their grade. Moreover, in the recent years, decentralisation and the devolution of powers to the lowest unit, i.e., at school level is considered to be the best way to improve the effectiveness of an organisation or institution and at the school level, the role of school heads becomes pivotal in improving the quality of education. Several changes that are taking place in wider policy and in school education system in India requires school heads to play a more proactive role, as they are faced with several challenges. These include retaining all enrolled children, improving the learning achievement levels, ensuring teacher presence in schools, etc. In addition, the heads of schools now have to manage several auxiliary activities like Mid Day Meal, disbursement entitlements, scholarships, etc. Their role is not limited within the four walls of a school but they need to be responsive to community and manage interaction with community members, SMCs and other stakeholders and make them partners in the improvement of schools. It has been widely acknowledged that the heads of the schools could bring the change and transformation in the school system and create the enabling environment, so that all children could learn. The role of school heads becomes all the more critical when they cater to the disadvantaged children living in impoverished urban areas.

What is Transformation?

Change is continuous and a well-defined shift to achieve the set goal, whereas transformation is not just to accomplish a defined change, but to reinvent the institution, keeping in view the local context and discover a new or revised strategy of change, based on a vision for the future. It is a process of change and trying out new experiments. To bring transformation in school, the leaders (primarily school heads) need to have the courage to take initiative, ability of risk-taking, problem solving, reflective thinking and strategic planning with a shared vision, with the involvement of different stakeholders. Transformation is the creation and change of a whole new form, function or structure. To transform is to create something new, responding to the changes in the context, therefore, trying out new experiment that has never existed before and could not be predicted from the past. Transformation is a "change" in the mindset. The change is knowledge-based and decision making is with the help of data and information gathered. The first step is transformation of the individual or we may call it personal transformation. Transformation occurs when leaders create a clear vision for transformation and build up a system to continually question and challenge beliefs, assumptions, patterns, habits and

paradigms, with an aim of continually developing and applying different strategies with sound knowledge and information.

In India, the public schools are not functioning satisfactorily. Besides the system level constraints like lack of funds and resources, absenteeism of teachers, large number of vacant positions of teachers, shortage of teachers in schools, high teacher-pupil ratio, the school leaders are reluctant to take new initiatives which has resulted in deteriorating quality in the public school system. Dissatisfied with the schools, parents especially belonging to middle and upper middle class, have started sending their children to private schools. Even the poor parents prefer to send their children to low fee private schools, as they feel that in private schools the school teachers and heads are more accountable and innovative. The two parallel systems of private and government have further accentuated the social and economic disparity, which creates social unrest and tensions in the society. This is an alarming situation. Government schools can improve only if the school heads begin to think beyond their administrative and managerial roles. At this juncture, the need is to transform the school to improve the quality of education and the school head is a key person who could be instrumental in bringing transformation.

Need for Building School Leadership for Urban schools

The need to build the leadership at the school level, both in the rural and urban areas has arisen as the Indian education system has undergone a tremendous change with the huge expansion of the number of schools, teachers and students. The number of elementary schools has increased from 5,92,969 in 1979–80 to 10,93,950 in 2013–14; and the corresponding increase in secondary and higher secondary schools has been from 42,463 in 1979–80 to 1,01,348 in 2013–14. The number of teachers has also increased both at the elementary and secondary levels. At the elementary level, the number has grown from 21,47,223 in 1979–80 to 73,54,152 in 2013–14. At the secondary and higher secondary levels the number increased from 7,94,076 to 16,20,907 during the same period. With the enactment of Right to Education Act (RTE) 2009 the enrolment has increased substantially from 8,96,41,617 in 1979–80 to 19,88,99,486 in 2013–14. Similarly, at the secondary level the enrolment has increased from 81,15,227 in 1979–80 to 1,58,71,303 in 2013–14. With the expansion in the school education sector, the need for the decentralisation was felt and the district became a unit of planning in the early 1990s. With the increase in the number of schools over the years, it became difficult for the district level officials to manage and monitor the schools. Therefore,

new structures under the SSA and RMSA were created at the block and cluster levels. The block and cluster level coordinators were given the prime responsibility for providing the administrative and academic support to schools. In reality, even these officials are also basically performing the administrative and managerial roles like collecting information and data from schools on the attendance of children, disbursement of entitlements like uniform, Mid Day Meal to the children and were not able to provide the necessary on site support to teachers or the head teachers for improving the learning levels of the children. It was soon realised that the system level reforms did not bring the desirable results and low retention rate, poor comprehension levels and the low learning levels of children, especially those belonging to disadvantaged sections still remained a major area of concern. In view of this, school based planning and management gained prominence and for this, the role of school heads is important as they have the major responsibility of leading their respective schools considering each school has its distinct characteristics and context.

The Twelfth Five Year Plan (2012–2017), for the first time, indicated that the improvement of school leadership is required in the process of school education for improving the quality of education, governance, learning outcomes, School Quality Assessment and Accreditation and Roles in System Improvement. The programme of Leadership Development in School Education has been visualised to act as the vehicle to empower and drive critical education reforms through intensive and interdisciplinary curricular experiences, active exchange of ideas, adoption of an interactive pedagogical approach that promotes team work and collaboration, creation of opportunities for professional development of leaders in school education, identification and nurturing of talent within and outside the school system to take up leadership and establishment of a network of institutions to impart leadership education (p. 75).

Gaps in Developing the Educational Leaders for Transformation of Urban Schools

In India, the school heads are functioning without proper direction, having no vision of their own. They function in a monotonous way and routine administrative and managerial activities are being carried out. No concerted efforts are made by the head teachers to deal with the diversity and they do not function in a coordinated manner for a common goal and purpose. There has been a dearth of evidence-based research on the need for assessment of the school heads and the system level functionaries as to what kind of skills and competencies are required of them to lead and transform the school, keeping in view the local context and environment. The programmes are

supply driven, without the research evidence of the needs of the school heads.

The school head position is gained on seniority basis and not competency-based, especially at the elementary level. Even at the secondary level around 25 per cent school principals are recruited directly and 75 per cent are recruited on the seniority basis and the age of these principals is generally more than 50 years. No pre-induction capacity building programme on their skill development is organised, before they join the post of head of the school.

The hierarchy system still predominantly prevails in Indian education system and the school heads act as per the direction given by the system level functionaries. This type of leadership known as managerial or transaction leadership equates with the management of systems and processes, rather than management of people (Serigovanni 2001). The school heads, in turn, also at the school level create structures, whereby it is clear what is required of their subordinates. In India, the transactional leadership predominantly prevails as the school head is governed by the system level functionaries and hardly takes initiative to try out the new experiments and even does not provide the freedom to the teachers to try out innovations.

However, in some of the mature educational systems, school leadership is dealing with the people and for the people. In such systems, the leadership goes beyond administering and managing day-to-day operations and is essentially concerned with cultural rather than structural changes. The school leaders try to bring transformation or change in the culture taking into consideration the strength of their team members, characteristics and background of their student population. The change is brought through team building, motivation and collaboration with teachers, community and other stakeholders, and this kind of leadership in literature is called as transformational leadership. Transformational leaders set goals and incentives to push the teachers to higher performance levels, while providing opportunities for personal and professional growth for each individual. Stephen Covey (1989) reminds us that good leadership comes from a shared vision and principles. According to Burns (1978), transformational leadership is observed when "leaders and followers make each other to advance to higher level of moral and motivation". Through the strength of their vision and common purpose, transformational leaders are able to inspire followers to change expectations, perceptions and motivation to work towards common goals. Bass (1997) suggested that transformational leaders garner trust, respect and admiration from their followers. Leithwood *et al.* (1999,p.9)

observe that transformational leadership is about building unified common interests between leaders and followers. They set directions by building a vision and setting the goals, develop the staff through encouragement, motivation and professional development, develop the organisation and establish a school culture that embodies shared norms, values, beliefs and attitudes, promote trust, fostering shared decision-making processes and problem-solving capacities; collaborating with the parents, community and system level functionaries. Most important is that they respond positively with open mind to the opportunities and challenges of educating diverse groups of students.

The Indian education system still needs to move in this direction. The idea of "distributed leadership" in which there are several key players in the formulation of vision and carrying forward the common purpose of education still has not taken off in India. The distributed leadership perspective focuses on how leadership practice is distributed among formal and informal leaders. As Benett *et al.* (2003, p.3) describe it "distributed leadership is not something done by an individual 'to others' ... rather it is an emergent property of a group or network of individuals in which group members pool their expertise". The underlying principle of distributed leadership is collaborative rather than bureaucratic which also means identifying the potential and strengths of the team members and tapping their strengths and also developing new skills and a new gamut of approaches that fit the new role. It also means involving all the teachers according to their merit and not the select few that could create conflicts and tensions in the school. Distributed leadership gives an opportunity to all the stakeholders to work towards a common goal. It is also said that distributed leadership in reality is a form of work re-appropriated, in which the staff feel more responsible for their work, are given greater autonomy and are provided with adequate feedback on performance. The challenge is to develop and foster distributed model of leadership that can transform schools and school systems. If the school heads are able to distribute their work, they will be able to devote time in engaging with the instructional activities like taking classes, monitoring the teaching-learning process, being the mentor to the teachers, etc. It could be said that instructional or pedagogical leadership is an essential component of the transformational leadership. These leaders are able to focus on the teaching-learning process and provide mentoring or coaching to teachers if needed.

In India, it has been seen that the glut of paperwork and expectations of the system level functionaries have burdened the school heads who do not spend time on supporting the teachers in the teaching-learning process. Research has shown that

teachers are the most important school-based determinant of student learning, in turn, the teacher success is directly linked to the effectiveness of the school head and his or her ability to create an environment where teachers can thrive. They need to play a role of instructional leader who must create conducive school culture for learning, drive instructional change by helping teachers to improve their teaching competency, use data-driven analysis of student achievement and actively engage with the students as well as with their parents. They need to acquire the skills for providing feedback to the teachers and encourage improvement. This kind of instructional leadership is almost missing and therefore, though with the improvement in infrastructural facilities, the learning level of children remains. The need is to prepare school leaders to take initiative and formulate the school vision in collaboration with students, teachers and other stakeholders. To make the school a learning organisation, the school heads need to focus on the professional development of self and also of the teachers. In this context, the system should provide flexibility and freedom to school heads for taking initiative and be innovative for improving the learning of all children.

Challenges in Transforming Urban Schools

The urban school system is faced with both structural and cultural challenges. Structural challenges are specific system-level and school-level policies and practices which do not encourage the children to participate actively in the school and fail to adequately address students' needs, e.g., the national norm for establishment of school is uniform though the context of urban areas is different, teacher deployment is done without taking into consideration the linguistic background of the children. Cultural challenges are those policies, practices and set of beliefs that contribute to dysfunctional perceptions of students' intellectual abilities— particularly those students who are culturally and linguistically diverse (Noguera, 2003), e. g., teachers' perception is that these urban disadvantaged children cannot learn, parents do not know the importance of education. The role of school heads becomes critical as he/she is the focal point who has to respond to these challenges in the context of local concerns and larger policies. The above discussion reveals that leading an urban government school can be a difficult and demanding task even for the most experienced and competent head teacher. The educational realities, negative effects of poverty and human misery that often depress marginalised communities can prove to be quite overpowering for many head teachers.

The salient characteristics of the Indian urban schools catering to disadvantaged children could be summarised as follows:

- enormous cultural-linguistic diversity;
- high immigrant/refugee population;
- high population of students whose first language is different from school language;
- high incidence of poverty;
- variety of social problems (e.g., drugs, alcoholism, dysfunctional families);
- violence in the family or in the neighbourhood;
- children craving emotional attention;
- high level of stress;
- high dropout rate of students;
- irregular attendance of children;
- low achievement level of children;
- lack of parent involvement within the school programme;
- inadequate infrastructural, ancillary facilities in the schools;
- low motivation and enthusiasm of teachers.

Therefore, leading these low-income, urban, multicultural schools is different from leading private schools located within the same geographical location, as the government schools have children whose parents do not actively participate in the education of their children, whereas private schools have more parental support and more homogeneous as well as stable student populations.

One of the major issues faced by urban public schools is linguistically diverse students, those students whose home language is different from the school language. Poverty and diversity present challenge to teacher and school leaders to find effective ways for integration and inclusion of all children. As the children belong to harsh environmental and socio-economic circumstances, the school leaders need to be empathetic and need to make an effort to help overcome their barriers.

School leadership positions are likely to be the most effective if the school leaders have the personal attributes like ability to take initiative and risk, optimism and resilience, emotional intelligence, self reflection, critical thinking and the most important is to understand the emotional and psychological needs of these children. The main competences required by people in leadership roles especially serving the urban public schools is that they need to have a sound knowledge of the educational developments, programmes and schemes initiated by the State. At the same time, they need to act keeping in view the local context and environment in which the school is situated. The school leaders need to demystify their perception that these children have low intelligence and capability. The first prerequisite for transformation is the willingness of school leaders to change their perceptions and pre-conceived notions

The school leaders need to be innovative and critical thinkers to meet the needs of all students. They must develop culturally sensitive activities through plays, dramas and stories that integrate multicultural

viewpoints and histories. The school head should encourage the teachers to apply instructional strategies that help all students to learn and acquire the necessary competence, knowledge and skills. In fact, finding committed and dedicated quality teachers in the schools serving diverse population is a major national concern, especially in view of the enactment of Right to Free and Compulsory Education Act 2009.

Haberman (1993) argues that successful teaching in low-income, urban, multicultural schools is a different order of teaching. He proposes that urban schools should look for character more than training in hiring teachers and head teachers for the poverty-stricken children. Heads of school serving diverse students in low-income urban schools need to be having the qualities such as caring relationships with students, commitment to acknowledging and appreciating student effort, commitment to inclusion, and support accountability for at-risk students.

An important issue is how to create awareness and sensitivity among the school heads towards the specific environmental, socio-economic and educational problems of the urban disadvantaged. The question is what kind of orientation may be given to these school heads so that they can create a friendly, joyful and conducive environment for these children in school. How do they create an enabling environment that the schools do not become an institution which create social and economic chasm. The school heads have to come out of their pre-conceived notions, which Senge (1990) calls as mental model that these children cannot learn. They need to go beyond the boundaries of school and try to understand their socio-economic environment and build relationship with parents and community to create awareness about the importance of education. The school leaders need to communicate to the teachers that they need to adopt different teaching methods as the children have different cognition and learning styles.

Summing Up

The foregone discussion highlights that the practice of school leadership in India is limited to carrying out routine functions like maintenance of discipline in school, maintenance of school records, submitting information to higher authorities, overseeing distribution of incentives under various schemes, etc. The school leaders in India are not visualising themselves as change-makers. They have not been able to acquire either the required knowledge and skills or aptitude. It appears that the system itself is either indifferent to school leaders who take initiative or attempt bringing changes in the practice of school leadership, or even hostile in some cases. Consequently, the tendency to be indifferent to performance of schools is deep-rooted in the system. This can only be dealt by initiating changes at multiple levels.

The system should be geared to value innovation and initiatives by school leaders with opportunities to correct themselves when things go wrong. In the absence of some systemic changes, no amount of training in knowledge and skills is helpful in bringing change and transformation. Secondly, the school leaders are required to be equipped with necessary knowledge and skills. Thirdly, and more importantly, the mechanisms to develop school leaders' aptitude to take charge and direct school activities as per the specific context have to be found out. The school leaders need to move from transaction leadership, to transformational leadership in which they have to prepare the vision of their own school, set goals and evolve strategies to improve the school functioning. For this, they need to collaborate with all the stakeholders to regain the faith of the people in public schools.

References

Bass, M. 1997. Does the Transactional/Transformational Leadership Transcend Organisational and National Boundaries. *American Psychologist.* Vol. 52, No 2. pp. 130–39.

Beck, L.G. and J. Murphy. 1993. *Understanding the Principalship: Metaphorical Themes 1920-1990.* New York Teacher College Press.

Benett, N.W. Christine Philip and J.A. Harry. 2003. *Distributed Leadership. A Review of Literature.* National College for School Leadership.

Burns, J.M. 1978. *Leadership.* New York: Harper 4. Row.

Covey, Stephen. 1989. *The 7 Habits of Highly Effective People.* Free Press.

Diwan, R. 2009. Resilience in Promotion of Schools as Learning Organisations: Reflections on Karnataka Experience. *Journal of Indian Education.* Vol. XXXV, No. 2.

Orfield, Gary and Chungmei Lee. 2005. *Why Segregation Matters: Poverty and Educational Inequality.* The Civil Rights Project at Harvard University.

Govinda, R. 2006. *Role of Head Teachers in School Management in India, Case Studies from Six States.* ANTRIEP, NUEPA, New Delhi.

Grint, Keith. 1997. *Leadership: Classical, Contemporary and Critical Approach.* Oxford University Press.

Haberman, M.J. 1993. Diverse Context for Teaching: Impeachers and Reflectors. In M.J. O'Hair and S.J. Dell (Eds.), *Diversity and Teaching.* Fort Worth, TX: Ha-court Brace.

Hall, John, Shannon Johnson, Allen Wysocki, Karl Kepner, Dereck Farnsworth, and Jennifer L. Clark. 2002. *Transformational Leadership: The Transformation of Managers and Associates.* University of Florida.

Hallinger, P. and R. H. Heck. 1996. Reassessing the Principal's Role in School Effectiveness A Review of Empirical Research, 1980-1995. *Educational Administration Quarterly.* Vol. 32. No. 1. pp. 5–44.

Hallinger, Philip and Junjun. Chen. 2015. Review of Research on Educational Leadership and Management in Asia: A Comparative Analysis of Research Topics and Methods, 1995–2012. *Educational Management Administration and Leadership*. Vol. 43. No. 1. pp. 5–27.

Harris, Alma. 2005. Leading from the Chalk-face: An Overview of School Leadership in Leadership. Vol. 1. p. 73.

Harris, Alma and Spillane James. 2008. Distributed leadership through the Looking Glass. *Management in Education.* Vol. 22. No.1. 31–34.

Leithwood, Kenneth A. and Carolyn Riehl. 2003. What We Know about Successful School Leadership. National College for School Leadership.

Leithwood, Kenneth and Karen Seashore Louis. 2012. *Linking Leadership to Student Learning*. Jossey-Bass.U.S.

Louis, K.S., K. Leithwood, K.L. Wahlstorm, and S.E. Anderson. 2010. Learning from Leadership: Investigating the Links to Improved Student Learning. Ontario Institute for Studies in Education, University of Ontario.

Noguera, P. 2003. *City Schools and the American Dream: Reclaiming the Promise of Public Education*. New York, NY: Teachers College Press.

Pushpanadham, K. 2006. Educational Leadership for School based Management. *ABAC*. Vol. 26. No. 1. (January–April), pp. 41–48.

Scheerens, J. and R. Bosker. 1997. *The Foundations of Educational Effectiveness*. Oxford: Pergamon.

Senge, Peter M. 1990. *Fifth Discipline: Art and Practice of the Learning Organisation*. Random House, South Africa.

Sergiovanni, T. 1995. *The Headteachership: A Reflection Practice Perspective*. Boston: Allyn and Bacon.

———. 2001. *Leadership: What's in it for Schools?* London, Routledge, Falmer.

Sharma, S. 2011. Attributes of School-Principals-Leadership Qualities and Capacities in International Congress for School Effectiveness and Improvement, 04-07, January. Limassol Cyprus.

———. 2015. Do Leadership Qualities Determine Competent Principals. *Innovare Journal Of Education*. Vol. 3. No. 1.

Tirozzi, G.N. 2001. The Artistry of Leadership: The Evolving Role of the Secondary School Principal. *Phi Delta Kappan*. Vol. 82. No. 6. pp. 434–39.

Zepeda, S.J. 2007. Instructional Supervision Applying Tools and Concepts. Larchmont, New York, *Eye on Education.*

Understanding Hindi–English Code Switching in Indian Classrooms

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Abstract

Despite the fact that code switching between Indian languages and English has emerged as a popular trend, especially among the Indian youth, it is castigated as an inappropriate form of language use by many. Popular perceptions interpret code switching as being language corruption, accepting its occurrence only in informal conversations rather than in formal. The concomitant diffusion of the trend of code switching and various perceptions associated with it has intercepted conversations that occur in Indian classrooms. Disregarding the popular notion that interprets switching between languages as lack of competence in the base language, this paper undertakes an analysis of the nature of code switching that occurs in the context of education by examining actual classroom conversations. The aim is to trace the multiplex of social and functional roles that code switching plays when it occurs within classroom transactions.

Introduction

Alternation between languages or code switching is a common phenomenon in multilingual societies such as India. Although Indian languages are often switched amongst themselves in spoken conversations, the presence of Hinglish, Taminglish, Punjinglish, Telenglish, Benglish, Maratinglish, Gujinglish, Rajinglish indicates that English has attained a special place in this regard. The increasing use of English corpus within sentences framed largely in Indian languages in

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media has augmented and endorsed such code switching to the extent that it has emerged as a trend in the youth of the country (Si, 2011). A number of research studies conducted in the field show that the trend is global in nature (Simon, 2001; Ruan, 2003; Wheeler and Swords, 2004). Such a linguistic situation in popular culture is counteracted by the fact that many consider code switching between languages to be a symbol of inadequate competence in the base language or language interference. The use of the term *khondinglish,* that can be translated as "broken-English", to refer to an alternation between Oriya and English, for instance, illustrates the connotations that are attached to such language alternation. Hence, although code switching has become an intrinsic feature of language usage in informal contexts, people generally attempt to adhere to the use of a single language in situations that are more formal.

The conflicting situation makes it imperative that scholars in the field of education undertake an in-depth analysis of code switching phenomenon in order to assist teachers to arrive at informed notions that are based on research rather than on popular views prevalent in the society.

Although a number of studies have been conducted in this regard in the West, this paper aims to examine the nature of code switching that occurs in Indian classrooms in order to unveil its social and functional role within classroom conversations. The paper concludes by arguing that code switching between the two languages is not arbitrary in nature; it has rather attained a special significance in the context of education.

In the following section, excerpts from classroom conversations have been quoted and analysed in order to further our understanding of code switching phenomenon. The data was collected in a government school situated in Delhi, India, as a part of a major research project. The data consisted of 25 hours of non-participant classroom observations and voice recordings done in Grade I, IV, VIII and XI of the school. These voice recordings were transcribed and later analysed using the method of discourse analysis. The excerpts from the data that have been quoted in this paper have been carefully selected to illustrate the arguments that are being presented in this paper most clearly. The paper has been delimited to the study of code switching occurring between Hindi and English that manifests in the speech of teachers rather than students for the sake of simplicity in the analysis. Research participants have been assigned pseudonyms due to ethical considerations.

Code Switching in Indian Classrooms

Hindi–English code switching in the context of Delhi has attained the status of what Grosjean and Li (2012) refer to as "bilingual mode" and what Myers-Scotton

(2005) identifies as "unmarked code switching" in multilingual societies. It may be rightly argued that Hindi–English code switching is the default languages that constitute a shared multilingual identity among Delhites. A number of studies have successfully traced the gradual increase in the use of a language marked by Hindi–English code switching over the past few decades in metropolis such as Delhi and Mumbai. A diachronic investigation of Hindi–English code switching using Bollywood film scripts, for instance, was undertaken by Si (2011). The study utilised quantitative analyses to show "a massive increase" in the overall use of English over a period of time, a trend which was claimed to be "particularly evident among young speakers" (Si, 2011, p. 389).

Concomitantly, the use of "the default" code switching between Hindi and English has also seeped into the context of education despite the fact that, theoretically, language education aims to equip learners with full blown proficiency in each of the languages that is being learned. The argument is illustrated in classroom conversations such as the following:

A student is reading a chapter aloud for the rest of the students in Grade 11 of the school. The teacher occasionally stops her to explicate the concept in between. Some such utterances are given here, with their English translation.

(a) Teacher: *anuvanshikta kya hoti hai?*

(b) Garima: **mam**…
(Pause)

(c) Teacher: *anuvanshikta hota hai* **heredity**. *Likh lo. Vatavaran…* **environment**…*Paripakvta abhi isne bataya tha…***maturity**.

(d) Garima: **maturity**.

(The students write the English translations dictated by the teacher in their notebooks.)

(e) Teacher: *ab jo vridhhi or vikas hai vo in teeno par kaise nirbhar hai?*

(f) Garima: **mam** *anu…*(She tries to read the word from the textbook. The teacher interrupts.)

(g) Teacher: *anuvanshikta yaniki* **heredity**. *Aapki* **parents** *ki* **height** *jitni hogi aapki* **height** *bhi utni zyada ya utni kam hone ki sambhavna zada hai. Theek hai?…*

English Translation

(a) Teacher: What is heredity?

(b) Garima: **Mam…**
(Pause)

(c) Teacher: Heredity is **heredity**. Write it. Environment is **environment.** Maturity, she just told it…**maturity.**

(d) Garima: **Maturity**

(The students write the English translation dictated by the teacher in their notebooks.)

(e) Teacher: Now how do growth and development depend on these three?

(f) Garima: **Mam** hered... (She tries to read the word from the textbook. The teacher interrupts.)

(g) Teacher: Heredity means **heredity.** Whatever is the **height** of your **parents**, there are chances that your **height** will be as high or as low. Alright?...

Note that the excerpt has been taken from a "Hindi medium" classroom, which implies that the textbook that is being read by the students is written in Hindi (exclusively). In contrast, the primary feature of the explanation of the text provided by the teacher is inter-language rendition. The analysis of the excerpt shows that a number of words from English have been inserted into the sentences of Hindi by the teacher under the assumption that the students are familiar with the English equivalents of these words rather than the terms of Hindi. In other words, the aim of the explanation provided by the teacher is to render familiarity to the concepts since she assumes that the concepts that are being taught to the learners are not new but the terms that have been used in the textbook are new for them. For the teacher, the process of explaining the text includes substituting unfamiliar words (of Hindi) with words (from English) that the learners are familiar with (as done in utterance c) and supplementing additional examples (as done in utterance g) to support the content provided in the textbook. Apparently, code switched Hindi-English is being considered as the language that can be understood by all in the context of this classroom. It is the language of classroom transactions in such conversations.

Another important aspect of code switching between Hindi and English done in classroom contexts becomes apparent if one analyses examples such as the following:

Fourth Grade's Class Teacher has been talking to a parent for a while. The parent turns towards the door of the classroom to leave but the teacher stops her.

(a) Teacher: emm...ek second. Aap *kis ki mummy hai, Muskan ki?*

(The parent nods. The teacher turns to the student.)

(b) Teacher: *apne dikha diya tha* **caste certificate** *mujhe?* (Muskan does not respond.) *maine bola hai na apko* **caste certificate** *ke liye?*

(c) Muskan: **mam yes**.

(The teacher turns back towards the parent.)

(d) Teacher: *apka jati praman patr bana hua hai na?*

(e) Parent: bana hua hai...

English Translation

(a) Teacher: Emm,..just a second. Whose mother are you? Muskan's?

(The parent nods. The teacher turns to the student.)

(b) Teacher: Did you show me your

caste certificate? (Muskan does not respond.) I have told you to show me your **caste certificate.**

(c) Muskan: **Mam yes.**

(The teacher turns back towards the parent.)

(d) Teacher: Have you got a caste certificate made?

(e) Parent: We have got it made…

The switch between the languages English and Hindi done by the teacher forefronts the assumption that the teacher has made regarding her interlocutors in this conversation. Teacher's language choice in the phrase "caste certificate" in utterance (b) is a result of her assumption that her student who studies in an English medium (government) school will be able to comprehend the phrase. On the other hand, her switch into Hindi, when she addresses the illiterate parent in utterance (d) indicates that she assumes that the parent would fail to comprehend the phrase in English. (Note that the teacher does not use English exclusively with the student since the student, studying in Grade 4 of a government school in Delhi, might not be able to comprehend full blown English.) A simplistic analysis of this excerpt may interpret it as an example of linguistic accommodation. However, the excerpt shows that code switched Hindi and English has assumed "the overall social role" (Matras, 2009, p. 121) of the language of education within the conversational context, contrasting directly with the use of Hindi, that has been assumed to be the language of illiterate parent, on the one hand, and with the use of English, since it is socially interpreted as the language of the elite and a symbol of high education, on the other (Dearden, 2014). Hence, the values that the speaker attributes to these languages as well as the assumptions about interlocutor's language use connect directly to result in code switching in such contexts.

Further, it can be stated that the switching done in this excerpt is largely participant related. Auer (1998) has distinguished participant related code switching from conversation oriented functions of code switching. Conversation oriented code switching includes functions such as highlighting of reported speech, or side comments, reiterations or quasi-translations for emphasis and change of mode (for instance, from formal teaching to informal conversations). Code switching of this kind plays an important role in organising the conversation at various levels. Such a form of code switching is exemplified in the context of education by conversations like the following.

The teacher is talking to the students of Grade 11.

(a) Teacher: **Lesson two. Lesson two** *shuru karte hai. Aj* **B section** *me ho gaya hai* **lesson** two *bhi. Kyuki unka pahla* **period** *mai padha deti hu, fir jati hu* **scholarship** *ka kam karne. Apka* **miss** *ho jata hai. Koi bat nahi, ho jaega apka bhi.*

(A student asks something from the teacher. The teacher responds but it cannot be heard clearly at the back of the classroom.)

(b) Latika: **Mam reading work** *kar lenge*.

(c) Teacher: *Aap log chhote bachche ho kya? Chalo* ***books*** *nikalo! Mai batati hu. Hamara jo* **second chapter** *hai vo maulik adhikaro ko samarpit hai. To pahle* **chapter** *me diya savidhan kya hai.*

(d) Garima: *Or kaise bana.*

(e) Teacher: *Hame iski avashyakta kyu hai? Kaise ye bana? Ab savidhan ne nagriko ko kuch diya hai. Savidhan ne nagriko ko kuch adhikar diye hain. Theek hai? Hamare desh ka maulik dastavez hai savidhan. Or ye jo savidhan hai, isne jo adhikar nagriko ko diye hain vo maulik adhikar kahlate hain...Maulik adhikar humara koi nahi cheen sakta, kyuki isko hame maulik dastavez ne diya hai. Or dusra, ye jo adhikar hai iska hannan hota hai, ye cheene jate hai to hum nyayalaya ki sharan me bhi ja sakte hain.*

(f) Teacher: *Kaun* **read** *karega dusra* **chapter**?...

English Translation

(a) 'Teacher: **Lesson two**. Let's start **lesson two**. I completed **lesson two** as well in **section B** today. Because I teach them in the first **period**, and then I go to do the work for **scholarships**. Yours gets **missed**. Never mind, yours will be done too.

(A student asks something from the teacher. The teacher responds but it cannot be heard clearly at the back of the classroom.)

(b) Latika: **Mam** we will do **reading work**.

(c) Teacher: Are you little children? Take out your **books**! I will tell you. Our **second chapter** has been dedicated to fundamental rights. So the first **chapter** told us what the Constitution is.

(d) Garima: How was it made?

(e) Teacher: Why do we need it, how was it made? Now the Constitution has given something to its citizens. The Constitution has given some rights to its citizens. Alright? Constitution is the fundamental document of our country. And this Constitution, the rights that it has given to the citizens, those rights are called fundamental rights... No one can seize our fundamental rights because it has been provided to us by the fundamental document. And secondly, if these rights are denied, we can approach the court for protection.

(f) Teacher: Now who will read the second chapter?'

The switching between Hindi and English in the above illustrated conversation marks out what Matras (2009) calls "turns in the

content". In this example, since she is teaching Hindi medium students, the teacher chooses Hindi as the language to deliver the main content of her narration (in utterance e). However, the informal part of the conversation held at the beginning of the conversation, as well as towards the end (in utterance f), includes a number of single word insertions from English into the base language Hindi. The English vocabulary that has been inserted (lesson, period, section, scholarship, read, chapter, etc.) is a part of common lexicon that is familiar to students in the context. Note that the constellation of participants and the languages known to the participants has not changed in this conversation; the only change that has led to a modification in the teacher's language use in utterance (e) is the change in the mode or purpose of language use, that is, from informal conversation with the students to formal content of the lecture.

Matras (2009) argues that language use in such contexts is not directly connected with the overall social roles that the languages have, or with the social values that are attributed to those languages. Rather, language alternation functions as an "instrument" used by the speaker to achieve a local goal "which is to guide the listeners to distinguish between the main content of a narration line and a departure from that line" (Matras, 2009, p. 121). Such language contrasting functions to furnish an organisation to the conversation, marking "turns" in the conversational intent.

Discussion

The excerpts quoted above illustrate the complex nature of code switching that occurs between Hindi and English in the context of education. Most commonly, code switching within teachers' lectures functions to render inter-linguistic familiarity by exploiting semantic equivalence between terms of the two languages that are being code switched between. Further, although it seems that code switched Hindi and English is the default language choice in the area of Delhi in general, which inadvertently seep into educational contexts, but the analysis of excerpt two in this paper shows that it could be education that is endorsing the use of such a form of language in reality. Although a generalisation necessitates further support from empirical data, it can be argued that code switched Hindi and English becomes the language of education in contexts such as those analysed in this paper. Lastly, the analysis depicts that code switching plays a critical role in situations wherein it functions to assist teachers to effectively organise the content of their lectures. As illustrated in excerpt three, the contrast of languages itself may be exploited for the purpose of "local management of the discourse" (Matras, 2009, p. 126). Hence, it can be concluded that the

role that code switching plays in the context of education in multilingual societies is not arbitrary but rather multi-layered and complex in nature. Code switching must, therefore, be subjected to sincere research rather that uninformed opinions based on popular perceptions.

References

Auer, P. 1998. Introduction: Bilingual Conversation Revisited. In P. Auer (Ed.), *Code-switching in Conversation* (pp. 1–24). London: Routledge.

Dearden, J. 2014. *English as a Medium of Instruction–A Growing Global Phenomenon*. Retrieved from: http://www.britishcouncil.org/sites/default/files/e484_emi_cover_option_3_final_web.pdf

Grosjean, F. and P. Li. 2012. *The Psycholinguistics of Bilingualism*. Beijing: John Wiley and Sons.

Jake, J., C. Myers-Scotton, and S. Gross. 2002. Making a Minimalist Approach to Code-switching Work: Adding the Matrix Language. *Bilingualism: Language, and Cognition*. Vol. 5. No. 1. pp. 69–91.

Matras, Y. 2009. *Crossing the Boundaries: Code Switching in Conversation*. NY: Cambridge University Press.

Muysken, P. 2000. *Bilingual Speech: A Typology of Code-mixing*. UK: Cambridge University Press.

Myers-Scotton, C. 2005. Supporting a Differential Access Hypothesis: Code Switching and Other Contact Data. In. L. Kroll and De Groot (Eds.), *Handbook of Bilingualism: Psycholinguistic Approaches* (pp. 326–48). Oxford: Oxford University Press.

Ruan, J. 2003. A Study of Bilingual Chinese/English Children's Code Switching Behaviour. *Academic Exchange Quarterly*. Vol. 7. No. 1. Retrieved from: http://rapidintellect.com/AEQueb/5jan2148/2.htm

Si, A. 2011. A Diachronic Investigation of Hindi–English Code-switching using Bollywood Film Scripts. *The International Journal of Bilingualism*. Vol. 15. No. 4. pp. 388–407.

Simon, D. 2001. Towards a New Understanding of Code Switching in the Foreign Language Classroom. In R. Jacobson (Ed.), *Codeswitching Worldwide II* (pp. 311–42). Berlin: Mouton de Gruyter.

Wheeler, R. and R. Swords. 2004. Code Switching: Tools of Language and Culture Transform the Dialectically Diverse Classroom. *Language Arts*. Vol. 81. No. 6. pp. 470–80.

Learning Science in Classrooms, Nurturing Thinking Abilities

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Abstract

Science is a systematic process of understanding nature and the dynamic relationship between human and nature, and Science education aims to help learners understand this process by acquiring certain types of knowledge, skills and thinking abilities. It is imperative to investigate — are classrooms providing students opportunities to achieve the aims of Science education? The present study attempted to answer pertinent research questions — "What do teachers regard as the most important purpose of Science teaching? How does this understanding translate in classroom practices? How is Science teaching in classrooms aligned with the goals of Science education in 21st century?" The paper presents critical analysis of teaching-learning practices followed in the classrooms, and evaluates potential of these practices in fostering thinking abilities among students. Questionnaire based survey and focus group discussion were used to collect information from a sample of Science teachers. There is evidence that knowledge-transfer methods promoting rote memorisation are prevalent in most of the classrooms, whereas thinking abilities find the central place in educational policy documents of 21st century. Probably a strong linkage exists between the notion of Science as a body of knowledge and non-child-centric classroom practices. There was negligible indication of practices to stimulate students' thinking and inculcate scientific attitude. To accomplish the purpose of Science teaching at school level, classroom practices

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need to be radically changed in a manner that matches the way "scientists work and think". The paper also recommends and discusses some innovative teaching-learning practices and other system-related changes, as potential measures to improve the quality of Science learning.

Introduction

Role of school education has been crucial in enriching knowledge, developing skills, inculcating habits, and instilling right values among individuals and societies. It is believed that abilities developed during childhood play a major role in overcoming the hurdles and challenges in the real life ahead — personal, social or professional. It begins with deriving meaning from what we learn in our classrooms. Is it really happening within the education systems? Are citizens (global) able to draw relevant meaning of their learning and utilise their understanding to solve real life problems? About two decades ago, Howard Gardner had expressed a genuine concern in his famous book, *The Unschooled Mind*:

"… even students who have been well trained and who exhibit all the overt signs of success—faithful attendance at good schools, high grades and high test scores, accolades from their teachers—typically do not display an adequate understanding of the materials and concepts with which they have been working. Students who receive honor grades in college-level physics courses are frequently unable to solve basic problems and questions encountered in a form slightly different from that on which they have been formally instructed and tested..." (Gardner, 1995, 2011, p. 3).

Based on students' responses for a typical question from Physics, he further reiterated:

> *"…….Yet 70 per cent of college students who had completed a course in mechanics gave the same naïve answer as untrained student…"* (Gardner, 1995, 2011, p. 3).

Gardner raises a very relevant question "Why are students not mastering what they ought to be learning?" The paper is an attempt to investigate this "why" by analysing how our school students are learning Science in their classrooms.

"What is the basic goal of Science education" is always the beginning point of such educational inquiry. Engagement with this question also necessitates exploring "what is Science all about". We have been reading in books or magazines and hearing at various fora that Science is an evolving and expanding body of knowledge derived from many investigations. The point that needs to be emphasised is that it is not just a body of knowledge, but also comprises a set of methods and practices that lead to knowledge generation

(or, construction). Inquiry-based and problem-solving approaches form the heart of all scientific methods. Science is an activity of understanding the world we live in, through systematic observation and rigorous reasoning. It is about relating theories to the evidence using the body of scientific knowledge and practices, critically evaluating and challenging existing theories, and/or modifying them as per evidence. Aims of Science education have their foundation on this nature of Science. Teaching of Science is meaningful, only if it is in harmony with the nature of Science and aims of Science education.

At the juncture, when Science is expected to immensely contribute to the sustainable development of humanity, Science teachers, educators and academic leaders need to examine deliberately — "Do their classrooms and classroom practices reflect the objectives of Science education?" This would lead to exploring the strategies that have the potential to realise the goals of Science education.

Objectives and Methodology

The present study revolves around the focal issue — "***Does Science teaching in schools have the potential to develop scientific inquiry and thinking abilities among students?***"

The following research questions.

1. What do teachers regard as the most important purpose of Science teaching?
2. How does teachers' understanding translate into classroom practices?
3. How is Science teaching in classrooms aligned with the goals and the best practices of Science education?

Sample for the study consisted of 98 Science teachers from 36 different schools. Table 1 shows some basic characteristics of the surveyed population.

The required data was collected through a small focus group discussion, followed by administering a mixed type of questionnaire to individual respondents. For close ended items in the questionnaire, respondents were instructed to mark their responses on a rating scale of 1–5. These categories were mapped with frequencies of occurrence of events, to help respondents register their responses more objectively.

Table 1
Characteristics of Respondents

Gender		Educational Qualification		Location		Classes Teaching				Medium of Teaching	
Male	*Female*	*Graduate*	*Masters and above*	*Metro cities*	*Non-metro cities*	*Upto V*	*Upto VIII*	*Upto X*	*Upto XII*	*English*	*Hindi*
18	80	62	35	40	58	17	28	45	8	69	29

Following description was provided to ensure that each category is more likely to mean the same to different people.

1. (Very frequently) – in more than 75 per cent periods
2. (Frequently) – in 50 to 75 per cent periods
3. (Occasionally) – in 25 to 50 per cent periods
4. (Rarely) – in less than 25 per cent periods
5. Never

To address the third research question and relate findings to research and policy documents, review of research literature and major policy documents was done. Important Indian policy documents were the *National Education Policy and Plan of Action* (MHRD, 1985, 1992), the *National Curriculum Framework* and Position Papers by Focus Groups on Aims of Education and Teaching of Science (NCERT, 2005, 2006), *National Knowledge Commission Report* (NKC, 2009) and *India Science Report* (NCAER, 2005).

Findings

The major findings of the study have been presented under the following headings.

Top Five Purposes of Teaching Science in Schools

Figure 1 shows the top five responses of teachers about "the most important purpose of teaching Science in schools". It can be seen that according to 30 teachers, development of experimentation skills is the most significant purpose of Science teaching. This notion was followed by the understanding of scientific concepts and principles (23) and acquisition of knowledge (14), respectively. Responses like to develop abilities to apply scientific knowledge in everyday life, to develop thinking skills, and to make them better human beings altogether counted 15. Other responses were helping children to become scientists (2), doctors or engineers (5); getting admission in good colleges (3); getting well paid jobs (2).

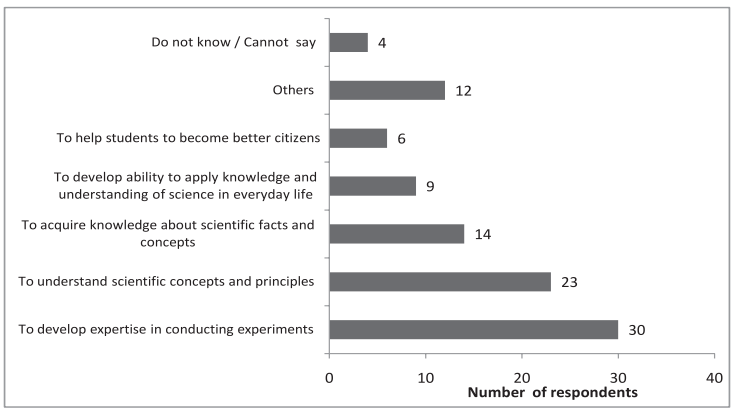

Figure1: Teachers' Responses about Purpose of Science Teaching

Frequency of Various Teaching Learning Practices in Classrooms

Science education leverages a variety of teaching methods, tools and classroom techniques to achieve its purpose. Questionnaire had a list of methods, along with others (specify), and teachers were requested to mark the method they used in the last academic session, on a scale of 1–5, based on quantifiable frequency. They were allowed to pick two or more methods. A large number of respondents selected more than one method, whereas 18 of them had selected more than five. Table 2 shows that textbook reading and traditional lecture (chalk-talk) method dominates in most of the Science classrooms. About 53 participants used textbook reading in their classrooms on more than 50 per cent occasions, whereas 50 respondents used lecture method with blackboard on more than 50 per cent occasions.

In classrooms of 19 teachers, demonstrations of scientific principles or practices were part of classroom teaching on less that 25 per cent occasions, whereas 79 teachers never used demonstration during classroom lectures. Use of charts, posters, models or audio-visual materials on about 25 per cent occasions was reported by 27 teachers. About 13 teachers marked use of experimentation method on rare occasions. Number of such teachers who never used audio-visual aids and experimentation method during teaching was 71 and 76, respectively.

Table 2
Frequency of Teaching Learning Practices in Science Classrooms

	Teaching-learning methods	**1**	**2**	**3**	**4**	**5**
1	Textbook reading	15	38	17	17	11
2	Lecture with blackboard	27	23	34	14	-
3	Lecture-cum-demonstration	-	-	-	19	79
4	Use of audio-visual aids	-	-	-	27	71
5	Experimentation	-	-	-	22	76
6	Project work	-	-	-	21	77
7	Inquiry methods	-	-	-	9	89
8	Other methods (<5)	-	-	-	13	85
		Number of respondents				

Note: *Twenty-one respondents had assigned projects to their students on rare occasions (less than 25 per cent times).*

Status of Questioning as Teaching Learning Method

Asking questions, noticing and observing have been considered as the basic abilities for scientific inquiry. It can be seen in Table 3 that 20 teachers used questions to involve students in thinking on various occasions. Nine teachers made effort to gather ideas of previous knowledge with the help of questions in more than 50 per cent classes. Seven teachers leveraged questioning as a trigger to build upon teaching learning in their classrooms.

Table 3 shows that most often, questions were used to test knowledge and award marks or grades. In classrooms of 15 teachers, questioning got a significant attention after completing the topic. It was also observed that questions were mostly confined to the textbooks, and were rarely drawn from real-life situations or addressed students' curiosity.

Table 3
Status of Questioning as a Teaching Method

	Aspects of questioning	1	2	3	4	5
1	**Use of questioning — why**					
	(a) as stimulus to engage students in questioning and thinking	-	4	7	9	78
	(b) to measure preconceptions among students	4	5	13	17	59
	(c) as tools to build upon the learning process	2	5	11	18	63
	(d) to revise and reinforce the learning	4	9	14	21	60
	(e) to test students' knowledge	11	20	51	16	-
	(f) to award marks to the students	15	28	55	-	-
2	**Use of questioning — when**					
	(a) before teaching any topic	6	8	15	15	54
	(b) after completing the topic	5	9	20	37	27
	(c) during teaching	3	8	12	23	55
3	**Use of questioning — source**					
	(a) The content in the textbook	59	35	4	-	-
	(b) Students' everyday life	2	7	10	17	62
	(c) Students' natural curiosity	-	-	6	8	74
		No. of respondents				

Aims and Practices of Science Teaching — in Policy and Education Research

In the context of 21st century, Hurd's two major aims of Science education, knowledge and enterprise can be best articulated as: (i) to impart knowledge, abilities and values that enable students to work in a specific local context, and (ii) to develop scientific attitude and temper that promotes thinking in a global perspective (Hurd, 1960). Fulfilment of these aims is crucial for sustainable growth and development of societies.

The nature of Science is neither universal nor stable (Lederman, 1992) and the same holds true for the aims of Science education. Evolution of scientific knowledge is most often driven by societal (or global), economic, political and cultural forces. With increasing role of Science and technology in everyday life, questions like "what is it that children should know?", "why they should know", and "how they should acquire and utilise their knowledge for individual and social well-being" are gaining much attention of social scientists.

In knowledge-and-intelligence-based-economies, Science education aims to enable and empower young minds solve problems of day-to-day life in a logical and meaningful manner; to promote well-being of individual(s) and societies. It is strongly believed that scientifically aware and literate citizens have the potential to bring about societal transformation. Engagement of students with scientifically-oriented questions is the most essential component of scientific inquiry and asking questions have been considered as the first and the most important scientific process in the Science framework for K-12 education by the National Research Council, US (NRC, 2012). At the same time, Science teaching must ensure to cultivate and sustain the joy, wonder and motivation of learning (NCERT, 2005).

Scientific inquiry has always been assigned a significant place in education policies. The Education Commission, 1964 highlighted the need for developing a spirit of scientific inquiry among students (NCERT, 1971). In 1976, spirit of scientific inquiry, temper and humanism was included in the Constitution as fundamental duties of all citizens. It was also endorsed by the *Programme of Action* (1992) for the *National Policy of Education, 1986* (MHRD, 1992). The Position Paper by the national focus group on teaching of Science (NCERT, 2006) also emphasised the need for inculcating scientific inquiry and temper among school children and stressed on a student-centric teaching learning process.

The Position Paper has stressed that aims of Science education should follow directly from the six criteria of validity for the curriculum, *viz.* cognitive validity, content validity, process validity, historical validity, environmental validity and ethical validity; with an emphasis on

developing scientific temper (NCERT, 2006). Use of scientific methods, inquiry and problem-solving approaches of learning in secondary stage Science classrooms have been explicitly recommended by the focus group (NCERT, 2006).

Acknowledging the challenges and issues in achieving these aims, the Position Paper recommended major infrastructural and qualitative changes in Science teaching, so that the classroom practices are in sync with the notion of "learning to learn", "nurturing curiosity and creativity" and "building scientific temper". Pratt and Hackett (1998) suggested that students develop deeper understandings of Science concepts and critical thinking skills of learning Science by inquiry. A study by Hanauer (2006) reveals how under the heading of scientific inquiry a multi-modal structure of oral, written, visual and physical forms of communication direct students to the required and predefined results.

Feynman (1995) characterised the scientific method in three words — observation, reason and experiment. Memorising the content given in textbooks, in order to help students score better in examinations neither relates to the nature of Science nor to the aims of Science education. Science is also not about reproducing the steps of an experiment, as emerged during the investigation. Highly-structured experimentation techniques lay little emphasis on thinking skills and scientific attitude.

A huge visible gap exists between the aims, policy perspective and teaching-learning practices in the classrooms. Experiences narrate that students are hardly provided with the opportunities to experience the fun of learning Science, and nurturing their innate curiosity and other thinking abilities.

Discussion

Purpose of Science Education

Teachers' knowledge and belief about Science education and inquiry have been one of the leading areas of research since 1990s (Lederman, 1992; Cobern and Loving, 2002). Conceptual understanding of teachers into aims of Science education is a precursor to the effective and meaningful learning among students. Approaches that a teacher adopts in classroom are primarily determined by a deeper understanding of "what are the knowledge and abilities that can be developed among students through Science teaching?". It was found that almost 50 per cent teachers visualise Science purely as a body of knowledge. Although it was widely acknowledged that mugging up facts and concepts needs to be discouraged, it was not reflected in the classroom practices. Classrooms were encouraging memorisation of scientific concepts, principles and processes without deriving meaning out of it.

About one-third of them seemed to be cognizant of the significance of

doing Science, but notion of Science teaching to develop thinking abilities, attitudes and values appeared to be feeble among Science teachers. A number of studies have shown concern over the unsatisfactory level of both teachers' and students' understanding of nature of Science (Duschl, 1990; Lederman, 1992). It is true that knowledge of scientific concepts and principles cannot be simply ignored. In many cases, they form the foundation of basis of high-order abilities. But it is crucial to incorporate such elements of teaching-learning to the classroom that engage students in activities fostering thinking abilities like scientists.

Very strong opinion emerged that scientific thinking can primarily be developed through systematic experiments in well-equipped laboratories. In contrast, absence of well-equipped laboratories cannot hinder learning scientific processes in school classrooms. For school students, each classroom has potential to engage students in scientist-like activities during which they can acquire Science process skills. Purpose of such tasks must be to ignite thinking, and to provide them triggers to construct questions that need investigation. Existence of näive ideas among teachers about aims of Science education indicates the need and scope of advancement in Science teacher education programme in the country, at pre-service as well as in-service level.

Teaching Learning Practices in Classroom

A teacher needs to use a variety of methods and tools in the classroom depending upon the topic, learning and age level of the learner and learning objectives. Availability of resources, socio-cultural factors and school leadership also have a significant influence on teaching methods. Classroom practices are one of the strongest indicators of teachers' understanding about "Aims of Science Education" as well as "how do students learn Science?".

Dominance of rote learning methods encourages the students to receive and reproduce the information without any processing, and thus restricting their creativity and problem-solving abilities. The scene does not seem to have changed over decades. Textbooks and blackboard are still common resources and material used by maximum teachers. Overdependence of Science teachers on textbooks is well documented (Stake and Easly, 1978; Weiss, 1993). In their study, Stake and Easly (1978) found that 90 per cent teachers use textbooks or other instruction materials 90–95 per cent times in their classrooms. Although teachers were aware that Continuous and Comprehensive Evaluation (CCE) demands variation in methods, but they found it difficult due to various reasons like higher number of students in a class, lack of understanding on how to do and many other infrastructure and administrative issues.

It was further found that 25 per cent teachers adopt teaching-learning methods that provide students opportunities to use their basic instinct to observe and explore (Table 2). Some projects were certainly assigned, but they were far away from the practices of project-based learning. Project works were usually restricted to predetermined presentations, models, charts, reports, etc. Most often these tasks are accomplished at home. In such circumstances, focus of the project revolves only around the end product and process aspect part remains ignored. They fail to engage students in thinking and/or working in a scientist-like manner.

Findings indicated very limited use of scientific methods and inquiry learning in the classrooms. Most crucial consequence of such practices is that students start visualising Science as a source of knowledge. There is ample evidence that students hardly get any opportunity of asking questions; formulating hypothesis; testing to validate them; and, communicating their findings. Learning Science requires students to engage in a scientist-like manner within and outside the classroom; and most involve observation, imagination, hypothesis and reasoning. There is a need to develop a culture promoting discovery of new knowledge that marks a significant shift from the existing trend to transfer established knowledge.

Status of Questioning and Scientific Inquiry in Classroom

Teaching is more meaningful and translates effectively into learning, when students are curious and alert. Observant and curious students pose a number of questions which most often governs the teaching learning process. Questioning is a reflection of curiosity that is an essential component of a live Science classroom. Howard Gardner has stated in his book, *The Disciplined Mind*– "*Habits of mind are important goals of education and can be nurtured through questioning and reflection*" (Gardner, 1999).

It has been discussed in previous sections that questioning in classrooms is analogous to testing and there is no room for student's curiosity in the entire learning process. Questions are rarely used as a trigger for teaching learning. Traditional education system with closed classrooms discourages the natural inquisitiveness to question and as students grow in age and grades, they pose less questions. The teaching practices promote listening and reproducing instead of observing, questioning and exploring. Reasons might be manifold, but it is very clear that students are getting minimal chances of knowledge construction, through scientific methods.

In the Report on *How Students Learn Science*, Magnusson and Palincsar highlight the significance of questioning as: "*Engaging children*

in Science, then, means engaging them in a whole new approach to questioning. Indeed, it means asking them to question. . . It means questioning the typical assurance we feel from evidence that confirms our prior beliefs, and asking in what ways the evidence is incomplete and may be countered by additional evidence." (Magnusson and Palincsar, 2005)

When students are encouraged to construct their own knowledge and understand the relevance of Science in their coursework and life, their attitude towards Science improves (Novak, 1988). The National Knowledge Commission has expressed concerns over a talent crunch in Science, with the economic growth (NKC, 2009). There is an urgent need to reduce information-transfer and shift towards meaningful methods of learning Science.

Feasible Approaches to Address Some Key Issues

Integration of Curriculum, Teaching and Assessment

The Report to Nation (NKC, 2009) has recommended systemic change in Science pedagogy at all levels of school education, and has emphasised the need to revisit curriculum to make it more interesting and engaging for students. Curriculum, teaching-learning and assessment are considered as the three integral components of education, so a systematic approach integrating all components is desirable to achieve the required changes in the education system.

In standards based systems, these three components flow from standards that do possess the potential to guide and shape curriculum, teaching and assessment. Well-stated standards and learning expectations support teaching-learning and assessment by providing tasks that are measurable and observable. Standards and assessments examine the alignment between learning objectives and learning experiences; evaluate the appropriateness of teaching materials and the effectiveness of teaching strategies; measure what and how well students are learning in their classrooms; and directly match the students' learning with the attainment of curricular goals (Sharma, 2015).

Irrespective of class levels, standards should explicitly state what is it that "students should know, can do and think". Standards (or content standards) and performance expectations (or performance standards) need to be articulated with underlying principles that (a) students cannot properly understand scientific concepts without engaging in the scientific processes, and (b) they can demonstrate competence in scientific practices in the context of specific content. It is equally important to acknowledge and consider that cross-curricular and multi-disciplinary concepts provide students with cognitive and non-cognitive tools

that can enhance their ability to understand and apply practices in specific content domains.

In the last decade there has been lots of work to extend standards and benchmark them against the research findings of cognitive Science–how students learn. This approach of learning system based on learning progression holds great promises to improve quality of Science learning among students.

Problem-based Approach of Learning

Use of Problem-based learning (PBL) in classrooms can be traced to mid-1960s as an alternative method to the conventional approach of teaching. The PBL method is well aligned with the constructivist approach of learning, because it allows students to relate their previous knowledge with their newly acquired knowledge, while working in groups to solve real life problems (Tarhan and Acar, 2007). PBL uses problems as a stimulus or learning tool for students, enable to construct their knowledge and improve their problem-solving skills. These problems simulate daily life complex problems rooted in situations that the learner is likely to encounter in the world outside of school (Woods, 1985). A group of learners is provided with a well-formulated problem and while discussing various aspects of the problem within their group they stimulate their prior knowledge. On the other hand, in the conventional teaching, problems are used to apply related concepts and principles at the end of a content unit.

Main features of the Problem-based learning method may be listed as:

- Learning is student-centred.
- Learning takes place in small groups, usually 6–10 students.
- Role of teacher is replaced by that of a facilitator.
- A problem is used to organise the group and trigger learning.
- PBL nurtures collaborative problem-solving skills and stimulates the cognitive processes.
- New knowledge is drawn from the pre-existing knowledge.

Boud and Feletti (1997) have specified few generic steps to implement PBL method in the classrooms. Processes of the PBL are similar in many aspects to the essential features of scholarly inquiry — its processes and objectives align with those of the research experience, making such learning opportunities accessible to a broader population of students. Students assess their knowledge themselves, identify their learning gaps, and obtain the required information through their own investigations.

Success of PBL method lies on the rigour in defining problems. End-of-chapter textbook problems in general do not require the analytical, synthetic and evaluative thinking needed for PBL, nor do they provide the contextual richness (Duch, 1996; White, 1996). On the other

hand, ill-structured problems fail to provide all the information necessary to develop a solution, introducing uncertainty about the path towards resolution as well as about the goals (Qin *et al.*, 1995). Basically, the major limitation of PBL is that it incorporates a formal learning cycle of activities that may take as much as several weeks to complete, depending on the nature of the problem (Boud and Feletti, 1997).

Inquiry-based Classroom

Inquiry Learning or Inquiry-based Learning (IBL) is the systematic investigation of questions to explore their answers and answers of such questions are either unknown or unclear. Inquiry method is basically simulated research, because both research and inquiry require the same kind of mental activities. However, they differ in the outcome of the activity and its relevance for the body of knowledge.

IBL is not a new concept. The method has its roots in John Dewey's book, *Democracy and Education* (1916) that describes how true learning begins with the curiosity of learners. The Theory of Inquiry (Dewey, 1938) advocates that inquiry teaching involves allowing children to learn from direct experience and cultivate their natural curiosity; and, the essentials of creative thinking lie in the processes of Science. Since then, Science educators have been advocating and promoting the methods of inquiry in Science classrooms (Schwab, 1962; Orlich 1989; Cherif, 1995; Wenning, 2005, 2007). It is obvious that 21st century Science education reform calls for pedagogical shift from a teacher-centred, textbook-based instructional paradigm to a student-centred, inquiry-based model (Kahveci, 2010).

One may argue that the purpose of Science teaching in schools is not discovery or invention, but one needs to be cognizant that the purpose of inquiry learning in school teaching is to help students to experience the scientific processes involved in the construction of scientific knowledge. Throughout the course of study, engagement of students in activities that promote and foster scientific inquiry emerged as a rare practice in the classrooms. Inquiry learning has proven to be a powerful tool in learning Science and also in influencing students' attitude and belief towards Science (Duschl, 1994). Reasons shared by the respondents varied from stringent norms to deliver a fixed content within given timeframe to a lack of awareness and how to do factor. But all these factors were hindering concretion of a collaborating learning atmosphere between teachers and students. Such classroom practices fail to develop and sustain interest among students for the subjects.

New millennium has witnessed a decline in students' enrolment in Science discipline in higher education (NCAER, 2005). *India Science Report* by NCAER (2005) expressed concern

over increasing dissatisfaction of students with teaching of Science in the higher classes in school; and, stated that 45 per cent of the students did not pursue Science after Grade X due to lack of interest, and almost one third due to lack of motivation. This makes it imperative to engage students in construction of the knowledge in a meaningful manner.

Five essential components of inquiry learning that apply across all grade levels are: (i) engagement of students in scientifically oriented questions, (ii) priority to evidence, (iii) formulation of explanations from evidence to address these questions, (iv) evaluation of explanations in light of alternate explanations reflecting scientific understanding, and (v) communicate and justification of their proposed explanations (NRC, 1996). In simple words, the process of IBL consists of a researchable question, a methodology to explore an answer to the question, an answer to the question, a conclusion based on the answer, justification of the conclusion with the evidence and arguments, critical evaluation of the answer and the conclusion, and dissemination of all earlier points.

Question may arise about the age and grade level, when students can engage in investigations. Wenning (2005, 2007) has presented different levels and types of inquiry activities with varying degrees of teacher intervention and intellectual sophistication. As per Wenning's taxonomy, inquiry tasks might vary from teacher-guided to student-regulated pedagogy, depending upon the age and class level.

Irrespective of forms and levels of inquiry learning, the basic processes are common. According to Suchman (1966), the steps of the inquiry are to:

1. present discrepant events or specific problematic situation;
2. encourage observations of developing a statement of research objectives;
3. ask students for observations and explanations (testable hypotheses);
4. encourage the testing of those hypotheses;
5. develop tentative conclusions and generalisations; and
6. debrief the process.

National Science Teachers Association of the US identifies scientific processes like observing, questioning, hypothesising, predicting, investigating, interpreting, and communicating as steps of inquiry (NSTA, 2003).

Mohanan and Mohanan (2012) identify asking questions, looking, noticing, and thinking, as four central activities of scientific inquiry and elaborate:

"…. *Given that inquiry is the investigation of questions, it follows that all inquiry begins with questions... The capacity to discover and formulate interesting and significant questions that call for investigation is the very first step in inquiry. The capacity for*

looking and the capacity for noticing is a fundamental quality for scientific inquiry… Thinking is a cluster of mental activities directed towards a goal. Designing an experiment to test the hypothesis that obesity is contagious requires thinking, and if it is contagious, inventing a theory that explains how it spreads also requires thinking". (Mohanan and Mohanan, 2012, pp. 3–4)

These steps might not be necessarily linear and distinct, but these skills play a critical role in helping children develop scientific ideas and concepts.

Professional Development and Capacity Building of Teachers

Teachers' awareness of nature of Science, aims of Science education and innovative practices like inquiry are must to implement best practices of Science teaching-learning in the classroom. It supports them design a conceptual framework of scientific inquiry, and create a collaborative and enriched learning environment, so that learners can construct their knowledge with new questions, hypothesis and investigations in a democratic manner. The framework developed by teacher and the enabling environment would support students to accomplish their learning objectives. Teacher is required to maintain a delicate balance between the guidance and child's creativity and thinking; and, between scientific concepts and processes.

Lederman (1999) advocates pursuing and evaluating systematic and concerted efforts to help teachers develop their conceptions, skills and abilities in order to enable them to transform their Science knowledge in classroom practices. Wenning's (2007) framework for the assessment of scientific inquiry that might guide teachers to formulate strategies for inquiry learning in their classrooms success of Inquiry learning depends exclusively on the learning environments and the role of teacher.

Effective Implementation of ICT Supported Learning

Tools of ICTs can make Science teaching-learning more versatile and goal-oriented. Besides this, they motivate students and promote creativity and interpersonal skills like cooperation and collaboration. ICTs, for example, offer a range of useful tools for use in school Science activity, like tools for data capture, processing and interpretation, data logging systems, graphing tools and modeling environments. Different forms of ICT can enhance both the practical and theoretical aspects of Science teaching and learning. Osborne and Hennessy (2003) have identified potential contribution of ICTs in classroom teaching as:

- expediting and enhancing work production; offering release from labour intensive manual processes and more time for thinking, discussion and interpretation;
- linking school Science to contemporary Science and

providing access to experiences not otherwise feasible;
- supporting exploration and experimentation by providing immediate, visual feedback;
- focusing attention on over-arching issues, increasing salience of underlying abstract concepts;
- fostering self-regulated and collaborative learning;
- improving motivation and engagement.

(Adapted from Osborne and Hennessy, 2003)

However, it is not appropriate to assume simply that the introduction of such technologies necessarily transforms Science education. Rather, we need to acknowledge the critical role of teacher, in creating the conditions for ICT-supported learning through selecting and evaluating appropriate technological resources, and designing, structuring and sequencing a set of learning activities. As the school curriculum goes beyond classrooms and establishes links with the external scientific and social communities, ICT has to play a central role in supporting development of scientific reasoning and critical analysis skills. It can help teachers both in facilitating key aspects of scientific thinking and in bridging gap between schools and social and scientific communities.

Conclusion

In the era of knowledge and information based economy, most of the developments are expected from Science and technology. There is a continuous demand for improving quality of Science education. The study enforces that Science teaching in classrooms does not encourage young minds to question, to formulate hypotheses, to look for alternative solutions and develop an attitude impregnated in values of humanism. On the other hand, development of high order thinking skills like logical reasoning, critical thinking as well as on fostering scientific attitude, values, interests and humanism have always been the integral components of Science education.

Bridging the gap demands a major shift in perception — from knowledge to spirit and abilities of inquiry; and, from a prescribed list of contents to the "spark of excitement" that stems from discovery. There is a need to begin with well-defined standards and clear understanding of learning objectives not only in terms of conceptual knowledge, but also in terms of skills, attitudes, values and overall mindset. Classroom practices should be oriented towards the achievement of these learning objectives. With the help of relevant tasks, students need to understand the world around them and make rational decisions.

Teachers' ability and professional development is vital for students' learning. Out of a variety of methods, teachers must decide a method that is most suitable and productive for accomplishing learning objectives. Classroom practices that aim to influence students' attitude and

belief towards Science and foster a spirit of scientific inquiry, would enable realising the goals of Science education.

References

AAAS. 1993. *Benchmarks for Scientific Literacy*. American Association for the Advancement of Science. Oxford University Press, New York.

Boud, D. and G. Feletti. 1997. *The Challenge of Problem-based Learning.* Kogan Page, London. N.C. Brady, and R.R. Weil.

Cherif, A. 1995. *INQUIRY: An Easy Approach to Science Teaching*. Evanstan. Illionis.

Cobern, W.W. and C.C. Loving (2002). Investigation of Pre-service Elementary Teachers' Thinking about Science. *Journal of Research in Science Teaching*. Vol. 39. No. 10. pp. 1016–1031.

Dewey, J. 1916. *Democracy and Education.* Macmillan, New York.

———. 1938. *Experience and Education.* Macmillan, New York.

Duch, B.J. 1996. Problem-based Learning in Physics: The Power of Students Teaching Students. *Journal of College Science Teaching.* Vol. 25. No. 5. pp. 326–29.

Duschl, R.A. 1990. *Restructuring Science Education.* Teachers College Press, New York.

———. 1994. Research on the History and Philosophy of Science. In L.G. Dorothy (Ed). *Handbook of Research on Science Teaching and Learning.* Macmillan, New York.

Feynman, R.P. 1995. *Six Easy Pieces: Essentials of Physics Explained by its Most Brilliant Teacher.* Reading, MA: Perseus Books.

Gardner, H. 1995. *The Unschooled Mind: How Children Think and How Schools Should Teach.* Perseus Books.

———. 1999. *The Disciplined Mind: What all students should understand.* Simon and Schuster.

———. 2011. *Frames of Mind: The Theory of Multiple Intelligences.* Basic Books.

Hanauer, D.I. 2006. *Scientific Discourse: Multi-literacy in the Classrooms.* London, Continuum.

Hurd, P. Deh. 1960. 'Summary' in Rethinking Science Education: The Fifty-Ninth Yearbook of the National Society for the Study of Education, University of Chicago Press, Chicago.

Kahveci, A. 2010. Quantitative Analysis of Science and Chemistry Textbooks for Indicators of Reform: A Complementary Perspective. *International Journal of Science Education*. Vol. 32. No. 11. pp. 1495–1519.

Lederman, N. 1992. Students' and Teachers' Conception of Nature of Science: A Review of the Research. *Journal of Research in Science Teaching.* Vol. 29. No. 4. pp. 331–59.

———. 1999. Teachers' Understanding of the Nature of Science and Classroom Practice - Factors that Facilitate or Impede the Relationship. *Journal of Research in Science Teaching.* Vol. 36. No. 8. pp. 916–29.

MHRD. 1986. *National Policy on Education*. Ministry of Human Resource Development, New Delhi.

———. 1992. *Programme of Action on National Policy of Education. 1986*. GOI, New Delhi.

Magnusson, S.J. and A.S. Palincsar. 2005. Teaching to Promote the Development of Scientific Knowledge and Reasoning about Light at the Elementary School Level. In, How Students Learn: Science in the Classroom. Report by Committee on How People Learn. National Research Council. Washington, DC: The National Academies Press.

Mohanan, K. P. and T. Mohanan. 2012. Assessing Science Talent. The Document Circulated during the Web Workshop to Develop Conceptual Framework for Scientific Inquiry By IISER, Pune. Accessed from: www.iiserpune.ac.in/~mohanan/educ/assess-talent.pdf

NCAER. 2005. *India Science Report. Science — Education, Human Resources and Public Attitude towards Science and Technology*. National Council of Applied Economic Research.

NCERT. 1971. *Education and National Development: Report of Education Commission 1964–66*. National Council of Educational Research and Training, New Delhi.

———. 2005. *National Curriculum Framework*. New Delhi.

———. 2006. Position Paper of National Focus Group on Teaching of Science. National Council of Educational Research and Training. New Delhi.

NKC. 2009. *Report to Nation 2006–2009*. National Knowledge Commission. Govt of India. New Delhi.

National Science Teachers Association (NSTA). 2003. Standards for Science Teacher Preparation: Arlington, Va.: NSTA.

National Research Council (NRC). 1996. *National Science Education Standards*. National Academic Press Washington, DC.

———. 2012. *A Framework for K-12 education: Practices, Crosscutting Concepts and Core Ideas*. National Academic Press, Washington, DC.

Novak, J.D. 1988. Learning Science and Science of Learning. *Studies in Science Education*. Vol. 15. No. 1. pp. 77–101.

Orlich, Donald. C. 1989. Science Inquiry and the Commonplace. *Science and Children*. ERIC. pp. 22–24.

Osborne, J. and S. Hennessy. 2003. Promise, Problems and Future Directions. Literature Review of ICT: Bristol: Futurelab.

Pratt, H. and J. Hackett. 1998. Teaching Science: The Inquiry Approach. *Principal*. Vol. 78. No. 2. pp. 2–20.

Qin, Z., D.W Johnson, and R.T. Johnson. 1995. Cooperative versus competitive efforts and problem-solving. *Review of Educational Research*. Vol. 65. No. 2. pp. 129–43.

Schwab, J.J. 1962. The Teaching of Science as Inquiry. In J.J. Schwab and P. F. Brandwein (Eds.), *The Teaching of Science* (pp. 3–103). Cambridge, MA: Harvard University Press.

Sharma, P. 2015. Standards-based Assessments in the Classroom: A Feasible Approach to Improving the Quality of Students' Learning. *Contemporary Education Dialogue*. Vol. 12. No. 1. pp. 1–27. DOI: 10.1177/0973184914556864

Stake, R. and J. Easley. 1978. *Case Studies in Science Education.* Urbana, IL: Centre for Instructional Research and Evaluation.

Suchman, J.R. 1966. *Developing Inquiry.* Chicago, Ill: Science Research Associates, Inc.

Tarhan, L. and B. Acar. 2007. Problem-based Learning in an Eleventh Grade Chemistry Class: Factors Affecting Cell Potential. *Research in Science and Technological Education.* Vol. 25. No. 3. pp. 351–369.

Weiss, I. 1993. *A Profile of Science and Mathematics Education in the United States.* Chapel Hill, NC: Horizon Research.

Wenning, C.J. 2005. Levels of Inquiry: Hierarchies of Pedagogical Practices and Inquiry Processes. *Journal of Physics Teacher Education.* Vol. 2. No. 3. pp. 3–11.

———. 2007. Assessing Inquiry Skills as a Component of Scientific Literacy. *Journal of Physics Teacher Education.* Vol. 4. No. 2. pp. 21–24.

White, H.B. 1996. Dan Tries Problem-based Learning: A Case Study to Improve the Academy. 15. pp. 75–91.

Woods, D. 1985. Problem-based Learning and Problem Solving. In D. Boud (Ed.), *Problem-based Learning in Education for the Professionals.* Australia: HERDSA.

Relationship between Civic Sense and Civic Responsibility of Junior High School Students

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Abstract

The inference of this study, which explored the relationship between civic sense and civic responsibility of junior high school students, is based on the findings of a survey. The sample consisted of 121 students (62 girls and 59 boys) of 8th grade at CBSE schools of Varanasi district, UP. The prominent questions of the study were: (a) what is the relationship between students' civic sense and civic responsibility?, and (b) does the relationship between civic sense and civic responsibility differ with gender? Self-developed civic sense test and civic responsibility scale have been used for collection of the data. Product moment coefficient of correlation r and t ratio was calculated to analyse the data. The result of the study revealed no significant relationship between students' civic sense and their civic responsibility. On the basis of the findings, it concluded that a student who possesses a high level of civic sense may not be civic responsible. The results also show no significant difference between girls and boys on civic sense test. However, girls outscore boys on the graph of civic responsibility. Girls having equal level of civic sense are more responsible in comparison to boys of the same age group.

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Introduction

Do beliefs of an individual command his/her behaviour? Or an individual's beliefs are the reflections of the ideals of society and his/her behaviour is driven by accessible and favourable social learning.

Civic sense has long been the part and parcel of the curricula in India. However, lack of civic responsibility in our citizens is a matter of piquant debate as well as scholarly articles. Fundamentally, civic sense is that sense which makes an individual civilised (Pillappa, 2012). It encompasses the norms of society and the values enshrined in the Constitution that determine his/her values in the social context. Civic sense sculpts an individual into an entity that the State dreams of. The process of making an individual a citizen is continuous. In broader terms, the ethics and values enshrined in the Constitution and continued with tradition are imbibed by the people of the country. It can be said, as the State develops, civic sense develops as social ethos. A compassionate and cooperative attitude for fellow human beings is the premise of civic sense.

Socialisation and Civic Sense

Socialisation is one of the fundamental determinants of an individual's behaviour in a particular situation. Family, neighbourhood, per group and schools shape an individual's beliefs and behaviours (Parsons, 1937). However, changes in family patterns and the neighbourhood, the influence of technology and media brought a paradigm shift in the process of socialisation. The potential of family as an agent of socialisation is eroding (Sinha, 1984). In the era of growing urbanisation, the structure of neighbourhood is transforming. Now, instead of being a guardian of community values and maintaining an effective social control, the neighbourhood has changed into a complex of houses or apartments. The gadgets have substituted the peers and technology is dominating the making and unmaking of an individual's persona. In spite of all changes, school is still standing with its role and responsibilities. In shaping of the beliefs and behaviour of a child, the role of schools has become even more important in the present situation. Dewey (1916), a prominent educationist, considers schools as a miniature of society. A State imparts the knowledge of the rights and responsibilities to its citizens through schools. The civic education plays a prominent role there and it helps in developing a sense of being responsible citizens in students.

As mentioned earlier, civic sense has been part of the curriculum in India since Independence. In schools, the co-curricular activities are accordingly structured keeping the premises of civic education in mind. They are often revised as per the need of nation from time to time. As in 1961 an emotional integration

committee constituted by the Union Ministry of Education suggested for special assemblies, which had to be held twice in a school year, wherein students would have to be educated about the unity and oneness of the country. They would have to take oath of loyalty and devotion to country as well as for human beings in those assemblies. A suggested text of those oaths was like, "To my country and my people, I pledge my devotion; In their well-being and prosperity alone lies my happiness". In 1968, the National Integration Council suggested to develop the textbooks, which could impart citizenship education to students. The National Policy on Education (MHRD, 1986) envisaged a *Common Core Curriculum*, which extensively discussed on the citizenship education and its implementation policies.

The efforts for developing the civic sense in citizens and making them responsible is a never-ceasing process. However the question arises, are the efforts fructifying in our country? Does the civic sense developed in schools turn into civic responsibility among our students? Taking a sample of junior high school students, the present study provides an empirical answer to the latter question. The answer to this pertinent question is important to understand whether the sense of being a responsible citizen is converting into action amongst our students — who are future citizens.

The present study provides empirical answers to the following specific research questions:

- What is the relationship between civic sense of junior high school students with their civic responsibility?
- Is there any difference in civic sense and civic responsibility of junior high school girls and boys?

Objectives of the Study

The study achieved the following specific objectives

- To study the relationship between civic sense and civic responsibility of junior high school.
- To compare the level of civic sense of junior high school girls and boys.
- To compare the level of civic responsibility of junior high school girls and boys.

The Rationale and Hypotheses

The major research premise of this study was that the civic sense taught and developed through the civics curriculum at the junior high school level should be reflected in the civic responsibility of the students. Accordingly, the expectation in this study was that a significant positive relationship must exist between civic sense and civic responsibility. Further, since both boys and girls are studying the same civics syllabus, it was expected that significant differences will not be found in their civic sense and civic responsibility.

In order to verify the above expectations, the following null hypotheses had been formulated and subjected to empirical verification:

- There is no significant relationship between civic sense and civic responsibility of junior high school students.
- There is no significant difference between civic sense of junior high school girls and boys.
- There is no significant difference between civic responsibility of junior high school girls and boys.

Methodology

The research design adopted for the study was descriptive survey design.

Sample

The sample of the study comprised 121 students (62 girls and 59 boys) of 8th grade studying in two schools of Varanasi following the Central Board of Secondary Education syllabus. Random cluster sampling technique had been used to select the sample.

Tool Used

"Test of Civic Sense" constructed and standardised by Singh (2013) had been used to measure the civic sense of junior high school students. This tool consists of 44 items on civic sense. The test-retest reliability coefficient of this test was 0.87. The author of the tool ensured its content validity besides establishing its construct validity by calculating Cronbach alpha value for each dimensions of civic sense.

The civic responsibility of students had been measured by civic responsibility scale developed and standardised by the researcher herself. The scale consisted of total 42 items of civic responsibility. Test-retest and split-half reliability of instrument was found to be 0.73 and 0.78 respectively. In order to establish the validity of the tool, Cronbach alpha value was calculated for each dimension and was found to be satisfactory.

Data Analysis

For extracting meaningful inferences, the data was subjected to compute the mean, S.D., Pearson Product Moment correlation coefficient r and t-test.

The Results

For verification of *first hypothesis,* i.e., there is no significant relationship between civic sense and civic responsibility of junior high school students, the Pearson product moment correlation was computed. The result is presented in Table 1.

Table 1 shows that the value of correlation between civic sense and civic responsibility (0.127), p=0.161 is not significant at 0.05 level of significance. Hence, the null hypothesis is accepted. This implies

Table 1
Relationship between Civic Sense and Civic Responsibility of Junior High School Students

N	Value of correlation
121	0.127

that civic sense and civic responsibility of junior high school students do not strongly go together and the expectation that learning of civic sense as an outcome of school Civics curriculum should be translated or reflected in students' civic responsibility is not found to be true. Therefore, it can be concluded that a student who is having a high level of civic sense may not necessarily demonstrate a high level of civic responsibility on an action level in day-to-day life.

For the verification of *second null hypothesis,* i.e., there is no significant difference between civic sense of junior high school girls and boys, the t-test was applied to compare the means and standard deviations. The results of this analysis are presented in Table 2.

The result in Table 2 shows that significant difference does not exist between civic sense of junior high school girls and boys. Consequently, the second null hypothesis has also been accepted.

The t-test results pertaining to *third null hypothesis* comparing the means and standard deviations civic responsibility scores of junior high school girls and boys have been presented in Table 3.

Based upon the significant t-value in Table 3, the null hypothesis that there is no significant difference between civic responsibilities of junior high school boys and girls is rejected. Since the mean scores of female students is significantly higher than male students, it may be concluded that junior high school girls are significantly more civic than their male counterparts.

Discussion

The results of the present study reveal that civic sense does not essentially convert into civic responsibility in students most of the time. In this context, a careful examination of the scores of the civic sense test and civic responsibility scale suggests that students who are excellent at civic sense test (M= 41.73) most of the time were scoring average on the civic

Table 2
T-test Analysis of Male and Female Students in their Civic Sense

Variable	Category	N	Mean	SD	T-ratio	5% level of significance
Civic Sense	Male	59	41.67	1.67	0.370	not significant
	Female	62	41.79	1.66		

Table 3
T-test Analysis of Male and Female Students in their Civic Responsibility

Variable	Category	N	Mean	SD	T-ratio	5% level of significance
Civic Sense	Male	59	64.88	1.84	4.035	Significant
	Female	62	66.17	1.68		

responsibility scale (M=65.54). This result indicates that the students are aware about the social ethos and constitutional norms. However, when the question of practising those values and norms is asked, they simply choose the favourable alternatives. For example, they are aware that road is not to be crossed when the light is red but they cross it, as it is in their favour at that point of time. Most of the time, these alternatives are the reflexes of favourable social learning. It appears that socialisation rather than classroom learning is an important factor in shaping the civic behaviour of an individual.

As the findings of this study reveal that the students have sufficient level of civic sense, it is clear that the efforts done by schools in promoting the civic sense are fructifying. Hence, our curriculum is in tandem with the need of society. But, somewhere the other agents of socialisation like family, neighbourhood are not disseminating the idea of practising civic sense. The result of present study affirms the study of LaPiere (1934). He did a study to know the belief and behaviour of American people towards Chinese people. He found that 91 per cent of the participants of his survey were not biased in their belief towards Chinese people, but were discriminatory in their behaviour for them.

Wicker (1969) reviewed a number of studies with a variety of samples and concluded that our attitudes are not the predictor of our behaviour. Diener and Wallbom (1976) did a study to know the attitude of students towards cheating. He noted that all university students say that cheating is morally wrong. However, when a test was taken to check whether students follow what they believe in or not, they asked the students to work on an anagram solving task and told them to stop when a bell in the room sounded. They found that 71 per cent students cheated by working past the bell. Batson termed such kind of attitude as moral hypocrisy. We do witness such a moral hypocrisy in our society and it appears our youngsters are swayed by it more than what they are taught in schools.

The attitude of an individual is the sedimentation of experiences. It guides individual's action in a particular situation. Study of Fazio and Zanna (1981) suggests that when attitude arises from experience, they are far more likely to guide actions. Samples of the present study are the students of 8th class. It might be possible they are having less exposure, consequently less experience. Therefore, what is present on cognitive level is not converting into action. That's why the students are aware about civic values, but they are not practising them. These observations certainly raise issues for further research into this domain of social importance.

Further related to second and third hypothesis, it is found that girls and boys are somewhat same on the

level of civic sense (M=41.67 and M=41.79), however, on responsibility scale girls outscore boys. The analysis done on various dimensions shows that girls are similar to boys in: (a) responsibility towards environment; (b) to act towards fraternity and cooperation; (c) leadership skills; and (d) to act for enhancing sensitivity towards gender, minority, physically challenged and socially deprived. But girls achieve higher at: (a) safeguarding public property; (b) critical appraisal towards surrounding activities; and (c) abiding by the rules, and rights and duties enshrined in the Indian Constitution. The findings suggest that girls are equal to boys on the cognitive level but they do better on action level. However, the sample size of girls taken in the study is too small to generalise the result.

Implications

The present study has immense implications for policy-makers of education, teachers and parents. As the study reveals that the students of junior high school level are cognizant of the civic values but they do not practise them. It can be said the changes and reviews of educational policy till now are only fruitful for developing civic sense in students but have failed to translate it into actions to behave as civic responsible citizens. The students are aware about the civic values, which is a praiseworthy accomplishment. Now the policy-makers should shift the focus on the practice of those values at the students' action level.

For the purpose, the educational practices should be restructured in such ways, which can make students active members of society rather than simply passive learners and knowledge bank. On the level of curriculum, cooperative learning and group learning based on experience and practice should be given more weightage in place of traditional memorisation method of teaching. On the level of co-curricular activities, service learning, field trips, community learning should be introduced. These activities will make students more aware about society issues and construct situations where students will learn to practise the civic values. If those situations are identical to real life, the learning will become the part of their habit and eventually change the attitude. The results of the present study are useful for school administrators and classroom teachers. They can change the school climate and the method of teaching in class as per the suggestion of the study.

The family is considered as the nucleus of society. Its role is more prominent in socialisation in comparison to other agents. The process of socialisation cannot be successful without the involvement of family. The parents need to take their role more seriously for making the child a responsible citizen. Moral hypocrisy in the family should be denounced before the children. The study can be enlightening for them.

References

Cronbach, L.J. 1960. *Essentials of Psychological Testing* (2nd ed.). New York: Harper and Raw, Publishers.

Dewey. 1916. The School and Society. Retrieved from: https://www.brocku.ca/MeadProject/Dewey/Dewey_1907/Dewey_1907a.html

Diener, Edward and Mark Wallbom. 1976. *Journal of Research in Personality*. Vol. 10. No.1. pp. 107–111.

Reddy, N.K. and Santosh Ajmera. 2014. *Ethics, Integrity and Aptitude*. New Delhi: McGraw-Hill.

Fazio, R.H. and M.P. Zanna. 1981. Direct Experience and Attitude Behaviour Consistency, in L. Berkowitz (Ed.), *Advances in Experimental Social Psychology*, Vol. 14 (pp. 162–202). New York: Academic Press.

LaPiere, R.T. 1934. Attitudes vs. Actions. *Social Forces*. Vol. 13. pp. 230–37.

MHRD.1961. *Report of the Emotional Integration Committee*. New Delhi: MHRD.

———. 1966. *Report of the National Integration Council*. New Delhi: MHRD.

———. 1986. *National Policy on Education*. New Delhi: MHRD. Retrieved on 12 January 2016, from www.ncert.co.in

Parsons, T. 1937. *The Structure of Social Action*. New York: McGraw-Hill.

Pillappa, P . 2012. *Civic Sense* (1st ed.). Excel Books, New Delhi.

Singh, S. 2013. Development of a Module of Education for Democratic Citizenship and Study of its Effectiveness on Students of Class VIII. Unpublished doctoral dissertation, Faculty of Education, BHU, Varanasi.

Sinha, D. 1984. Some Recent Changes in the Indian Family and their Implications for Socialisation. *Indian Journal of Social Work*. Vol. 45. No. 3. pp. 271–86.

Wicker, A.W. 1969. Attitudes versus Actions: The relationship of Verbal and Overt Behavioural Responses to Attitude Objects. *Journal of Social Issues*. Vol. 25. pp. 41–78.

Augmentation of Technology Enhanced Learning in 21st Century Education System

A Survey Report on Schools in New Delhi

Sangeeta Malik* and Usha Sharma**

Abstract

Learning is a process of expanding one's knowledge in a desired sphere. "System" here is a premeditated mechanism which facilitates learning to be more efficient and meticulous. A system which is adequately potent to assist the escalation in learner's knowledge would be considered as an eloquent learning system. In the 21st century, there has been a noticeable augmentation of "Technology Enhanced Learning" or learning through "Multimedia Learning System" which has modified the conventional learning methodologies and systems to a great extent. With an aim to study and evaluate the potential of the latest prevailing learning systems in the country, a survey has been carried out in six different schools of New Delhi, India, all belonging to diverse categories. A part of the analysis of this survey is presented in this paper.

Introduction

The whole process of teaching and learning revolves around "learner" and his/her holistic development. To make the process of learning fruitful, it is necessary to focus on the learner the most and make it an inclusive and meaningful experience for the

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child. The curriculum should allow a child to ask questions, explore, share and integrate the knowledge gained in school with his/her own day-to-day experiences.

Learning is a creative process of expression, management of concrete knowledge and cerebral exemplifications, rather than just memorising, storing and retrieving of information, merely for the purpose of examination and results. The child should be enjoying the course of studies and be satisfied with what he/she achieves.

Gone are the days of conventional Indian education system, where a classroom was categorised by elongated hours of students sitting in the classrooms attending to teacher's epilogues. Now-a-days, teachers are the facilitators of learning. In the current set-up, the students' favourite class includes teacher's lectures, experiments, solving MCQs and watching video clips or movies. Students work in groups, interact, indulge in healthy competitions, compile their works and ripen their skills and knowledge. They also use role-play to act out different scenarios and go for field trips during their regular classes and formative assessments.

These are all learning activities. One or more of these activities certainly match an individual learning style and information processing preferences. We all are capable of learning, but we all cannot learn in the same manner or in equal expanse. Where learning is concerned, there is no one tactic or methodology that fits all people. If instruction is designed and implemented with consideration of different styles of learning, all students will be able to increase concentration, process information and retain more difficult material both in terms of quantity and quality.

Learner-Centred Pedagogy

The education process must be learner-centred. The curriculum design proposed by a learning system (NCERT, 2005) should be likely to: (i) develop the basic capabilities of a student as a human being, (ii) expansion of knowledge followed by practice, and (iii) advancement of critical thinking in learners. It should provide opportunities and favourable environment to a learner to develop basic capabilities like language, understanding to form and sustain relationships with oneself and with the social world; and the capabilities of work and action which involve coordination of bodily movements and thoughts to achieve some purpose or create something. Similarly, knowledge of a practical discipline must also find a substantial place in formal curriculum.

Next, a promising learning system also puts the learner forward to gain the knowledge of a formal discipline, be it science, mathematics, art, philosophy or anything else, which involves understanding of a special vocabulary, concepts, theories, descriptions and methodologies, and

applying one's own critical thinking and creation. Appropriate design and successful implementation, both the factors are equally important when we examine the effectiveness of the prevailing learning systems.

The Evolution of Learning Systems

Even though the learning systems which exist today seem to be new in terms of technology and usage, still, they have their origin deep rooted in the years' old customary models of learning styles. Models are the prototypes that help us to make sense of our world by providing a background and a framework to help us understand a huge or multifaceted concept, and break it down into diverse, manageable units. Learning models provide teachers with an organised system for creating an appropriate learning environment, and planning instructional activities. Learning models influence what the teacher does in the class, what a student is expected to do in the class, the organisation of the classroom, the nature of the procedures, materials, the instructional tasks, and even the evaluation system.

(i) Classification of Learners and Learning Styles

Every individual has diverse learning capabilities and a preferred learning style. A learning style can be defined as an individual's natural or habitual pattern of acquiring and processing information in the given learning situations. The most widely accepted classification of learners and their learning styles, owing to the diversity in human nature, are elucidated in the following popular models.

(a) Kolb's Model

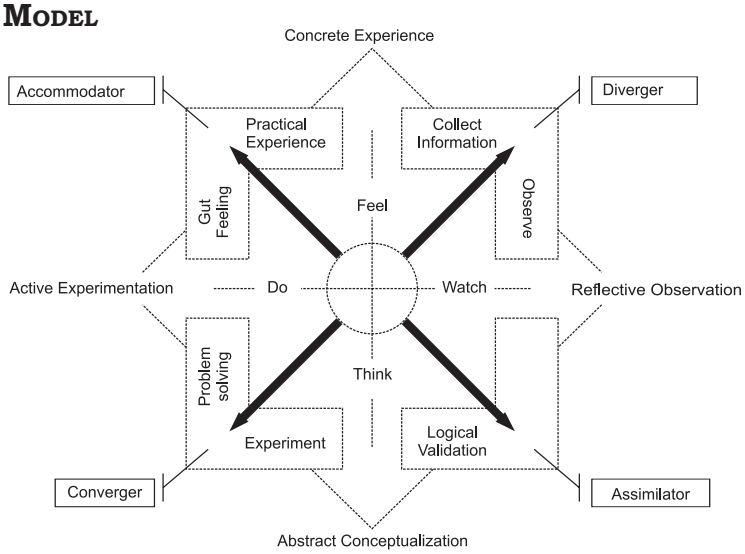

Figure1: An illustration designed on the basis of Kolb's Model.

David A. Kolb's model of learning styles, as re-illustrated in Figure 1 is a four-staged cyclical theory of experiential learning (ELT), where experience is known to be the source of learning and development. On the basis of this model, learners are classified into four categories according to their techniques of learning — *Diverger, Assimilator, Accommodator and Converger.*

Kolb proposed that an individual learner (Diverger) moves through a cycle of immediate experience which leads to observations and reflections on the experience (Assimilator). These reflections are then absorbed and linked with previous knowledge and translated into abstract concepts or theories (Accommodator), which result in new ways and actions to adjust to the experience that can be tested and explored (Converger).

This theory is a holistic approach that combines experience, perception, cognition and behaviour of the learner. The aim of ELT (Kolb, 1984) is to create, through a synthesis of the works of the foundational scholars, a theory that explains how experience is transformed into learning and reliable knowledge. The most direct application of the Kolb's model (Atherton, 2013) is to use it to ensure that teaching and tutoring activities give full value to each stage of the process. This may mean that for the tutor or mentor, a major task is to "chase" the learner round the cycle, asking questions which encourage "Reflection", "Conceptualisation", and ways of testing the ideas. The "Concrete Experience" itself may occur outside the tutorial/mentoring session.

(b) Felder-Silverman Model

Felder-Silverman model is a learning style model that classifies students according to their learning preferences (Felder and Silverman, 1988). It puts forward that different students learn in different ways they find themselves at ease. It categorises students' learning inclinations into four learning style magnitudes with two categories each. Table 1 shows illustration of stimulating correlation between the categories and learning preferences proposed on Felder-Silverman model. These correlations are based on the identification of a learner by means of:

(i) The nature and organisation of information a student is comfortable with (Sensory or Intuition).

(ii) The sensory modality which helps a student to receive the information (Visual or Verbal).

(iii) The techniques in which a student likes to process the received information (Active or Reflective).

(iv) The manner in which a student proceeds to comprehend the information resulting in the expansion of her/his knowledge (Sequential or Global).

Table 1
An Illustration Designed on the basis of Felder-Silverman Model

Sensing vs Intuitive Learner		**Visual vs Verbal Learner**	
Detailed practical work Prefer concrete facts and real world applications	Creative Prefer theoretical and abstract concepts	Learn through images like charts, graphs, pictures, etc.	Remember written or spoken words
Active vs Reflective Learner		**Sequential vs Global Learner**	
Interact with Material Communicate in a group	Think about material Individual/very small group communication	Learn linearly with logical steps	Learn randomly by fitting pieces together into a big picture

In general, different students are found in any one of the above mentioned categories of learners within all the respective dimensions. The learning styles reflect preferences and tendencies of the variety of students (Felder and Spurlin, 2005), they are certainly not the dependable gauges of their perfections or imperfections. Instead, they help the mentors making them aware of the diversity of learners within their classes and inspire them to design the information that can address the learning prerequisites of all their students. The learners in return can also be benefited with the insight of their unique category and learning styles.

(c) Fleming's VARK Model

Fleming's VARK model as re-illustrated in Table 2 explicates that an individual's learning style is her/his very own characteristics and choice of assembling, consolidating and processing the learning content. This model talks about our four perceptual modes or senses, where individuals have choices along each of the four perceptual modes for adopting any of the ways to obtain and give information. These modes are namely V=Visual, A=Aural, R= Reading/Writing and K = Kinesthetic. The only senses that are excluded in this model are taste and smell. No individual can use just one of his senses for learning, rather a blend of most of all is required for perfect learning (Fleming, 2001). The proportion of the different components in this blend is unique for all individual learners. Fleming here also indicates that students perform better where the instructors plan the learning activities in accordance with the students' learning styles determined by the VARK model.

Table 2
An Illustration Designed on the basis of VARK Model

Visual Learners: Learn through pictures, videos and diagrams, written texts, spatial arrangements, etc.	**Aural:** Learn through lectures, discussions, music, etc.
Reading and Writing: Learn by making lists, taking notes, reading textbooks, etc.	**Kinesthetic:** Learn by touching and doing, real life examples, working models and experiments, role-plays, hands-on activities, etc.

(ii) Multimedia Learning: From Natal to Matured

Though multimedia technology, as we see today is an amalgamated digital experience of various media like images, text, audio, video and animation, yet all these technologies were born separate and evolved on their own pathways for their own drive and practice. The multimedia technology thus evolved, tells a tale of the advent and juxtaposition of these technologies. Long ago, even before the humans knew terms like "science" and "technology", even in the pre-historic period around 15,000 BC, human beings used to depict the ideas and information on the walls of caves. That was the first ever formation of graphics and code. But only after thousands of years later, the various forms of technologies started emerging. Each one of them grew out of the other and fused well. But we necessarily want them all, as one as well as separate entities.

(iii) Multimedia Learning Systems in 21st Century

Learning systems today, grant access to learning through multimedia, which is more of a technique of mediated human–human communication instead of just human–computer interaction. Here, technology does not only play the role of the teacher, it is also equipped with several tools of teaching. If, at one end, it allows a specific learner to learn on her/his own pace, by repeatedly viewing the multimedia teaching content, give feedback to the system, take tests and get evaluated; it also facilitates learning by thinking, doing, analysing, etc., at the other end. It is self-sufficient to encompass all the traditional models of learning styles taking care of a variety of learners. Table 3 presents the consolidation of various activities and relevant experiences a student attains in the due course of learning. It also indicates how multimedia learning systems of the 21st century carve out their space among all the traditional models of learning.

Table 3
Traditional Models of Learning VS Multimedia Learning Systems

Multimedia learning systems in 21st century	Kolb's Learning System	Felder-Silverman Learning System	Fleming's VARK Learning System
Feel	Concrete	Sensing	
Think	Abstract	Intuitive	
Do	Active	Active	Kinesthetic
Observe	Reflective	Reflective	Reading & Writing
Watch		Visual	Visual
Hear		Verbal	Aural
Follow		Sequential	
Random Generation of Knowledge		Global	

(a) The Studied Learning Systems

Today, it has become a prerequisite for the developing countries like India to cope up with the ever-growing demand of high quality education. Most of the middle class families are turning to private schools ("Smart! But can it make...", 2012), and enrolment has grown tremendously in the recent years. With the evolving efforts, technology is brought to Indian classrooms as well so that the slit between the education system of developing and developed countries starts to fade and people get equal opportunities globally.

Here comes the role of "Technology in Education", which gave birth to education companies that could make technology an integral part of a student and teacher's daily life. The point of concern here is that how far these systems are placed rightly in the scenario of Indian education system. To get a better understanding of their access and worth, a few prevailing multimedia education solutions are hereby studied by means of a survey in a few Delhi schools (private as well as government schools).

Educomp

Educomp Solutions Limited, founded in 1994, is an education solutions provider and known as the largest education company in India. Educomp group reaches out to over 65,000+ schools and 30 million learners and educators across the world. Educomp Smart Classes is a flagship brand of Educomp Solutions.

It offers a huge digital content library of more than 20,000 modules with curriculum-mapped and multimedia-rich 3D content. It has

a good range of teacher resources, which include tools like Virtual Laboratory of Simulations, ready Work Sheets, Mind Maps, Teaching Ideas, Real Life Applications, Topic Synopsis, MCQs, Weblinks and Diagram Maker (Educomp Annual Report 2013–2014).

Educomp also offers a popular test preparatory chain for IIT-JEE exam preparation. It is a leading corporate infrastructure provider in Kindergarten to 12th standard (K-12) schools ("A Digitalised Version…", 2013). It also owns a huge pre-primary schools chain having 280 pre-schools across the country. The other important Educomp services and solutions include IT-enabled learning for government schools, Vocational Skill Development Education, Online Learning Solutions and Supplemental Learning Solutions. New upgraded version of Educomp Online "Fliplearn" provides teachers and students a learning and sharing platform with online resources and tools for better communication and problem solving.

TeachNext

TeachNext is a multimedia learning system for the K-12 segment, a solution from Next Education India Pvt. Ltd. Next Education won the "Best Digital Multimedia Content – K-12 Segment" award at the India eLearning Summit 2011. The records state ("TeachNext solution for…", 2012) that the content is created and designed for all CBSE, ICSE, IGCSE, ICSE and various state boards in eight different languages.

Over 5000+ schools and 5 million+ students across India have already implemented this solution. They also affirm that the content is 100 per cent aligned to the NCERT syllabus. The TeachNext system is controlled with a remote that works like a normal TV or a DVD remote. Almost 95 per cent of required operations can be done within five keystrokes with the TeachNext remote.

The other key features of TeachNext are audio-visual content, voice-overs recorded by Indian artists, question banks, advanced interactive tools like NextTools, NextDictionary, NextStudio to ensure that the teacher is able to explain and illustrate the concepts using life-like interesting animations. On the spot evaluation for student performance by using student answering system is another interesting feature.

The TeachNext Project has further launched after-school learning centre, called Next Learning Centre ("Next Education: Creating a Brighter…", 2014). Next Education has also launched a user-friendly school community mobile application, "LearnNext" for free. Lesson summaries, references and project ideas are available on the application.

A series of Next curriculum books for the pre-primary and primary classes are integrated with digital learning platform of TeachNext. Next books are based on the CCE framework recommended by CBSE and NCF, and impart Higher Order Thinking Skills (HOTS) among students.

CAL Lab

CAL Lab is set up as a component of *Sarva Shiksha Abhiyan*, a flagship programme of the Government of India to support the state governments in the creation, development and solidification of the formal primary and upper primary school systems to achieve the goals of UEE (Universal Elementary Education) Mission.

Under this umbrella, CAL (Computer Aided Learning) Labs were set up in government schools in Delhi and other states to equip them with curriculum mapped interactive multimedia-based animated educational content, so as to make classroom teaching more interesting and effective. All the government schools and around 400 MCD (Municipal Corporation of Delhi) schools in Delhi are targeted to be equipped with CAL Labs, so that the children studying in government schools get an equal opportunity to be at par with children studying in private schools (Government of India, 2007).

The efforts are being made to ensure the effective utilisation of the CAL Labs in schools and also to develop useful material based on the NCERT syllabus in the CAL development labs of the Department of Education. According to the minutes of the 199th meeting of the Project Approval Board for considering the Annual Work Plan and Budget 2013–14 for SSA Delhi held on 10 April 2013, 969 schools under the Department of Education were approved to be updated with CAL learning content with hardware upgrade, and the process of functioning/strengthening of CAL units in 314 MCD schools was also sanctioned (PAB Meeting, 2013).

The Survey

In order to investigate the levels of usage and educational efficacy of the 21st century learning systems, a questionnaire survey was done in which 1,755 students from three government and three private (total six) schools of Delhi participated. Given the access to use popular multimedia learning systems pioneering today's Indian education system, the purpose of the survey was, therefore, to determine comprehensively the various ways and extent of use; and didactic effectiveness of these learning systems in the learning process.

Table 4 presents the count of all students participated from each type of school (government or private) in this survey. Not only this, it also indicates the name of the Learning System(s), each type of school has adopted respectively.

Table 4
Samples

Type of School	No. of Schools	No. of Students Participated	Adopted Learning System
Private	3	1,363	Educomp, TeachNext
Government	3	392	CAL Lab
Total	**6**	**1,755**	**3**

Objectives of the Study

- To judge the manner and extent of using multimedia technology in classrooms by the students.
- To gauge the ease of use of the subscribed learning system by the students.
- To observe the students' beliefs and circumstances persuading their acceptance to the technology.
- To note the students' views on the didactic effectiveness of multimedia technology and its influence on student performance (both negative and positive).
- To understand the barriers in acceptance of subscribed learning systems by the students.

Data Collection

Utmost care has been taken in the selection of the data resources, i.e., schools. The most stimulating part in this data collection is that all these students form a heterogeneous group, representing essence of varied educational standards and infrastructure prevailing today in the Indian education system. Data is collected from co-educational schools, only girls' schools and only boys' schools as well. In the following sections, this questionnaire used for the survey is briefly introduced and afterwards the results of this study are presented.

Design of the Questionnaire

The various important aspects of the questionnaire design (Sudman *et al.,* 1982) were taken into consideration while designing the questionnaire. All questions were either open-ended with one word answer or close-ended with multiple choice questions or rating scales. Care was taken so that the time required to fill the questionnaire and hitches in comprehension could be reduced to a large extent.

The Students' Questionnaire comprised two parts A and B, including one and five sections respectively. It contained two printed pages. Table 5 shows the division of sections and arrangement of questions in the students' questionnaire.

Table 5
Design of the Questionnaire

Part	Section(s)	Total No. of Questions	Type of Questions	No. of Questions (section-wise)	Most Representative Questions in Each Section
A	1	8	Open-ended with one word answer/ close-ended with multiple choice questions	8	Section-I Questions based on the general background information of the student like gender, grade, age, class strength, favourite subject and if they have any experience of using computer technologies.

B	5	28	Open-ended with one word answer/ close-ended with multiple choice questions/ rating scales	6	Section-I Questions based on the access and use of the multimedia system subscribed by the respective school.
				2	Section-II Questions based on the students' overall acquaintance with the multimedia system subscribed by the respective school. These questions focused not only on the tools of multi-media system a student is acquainted with, but also on the type of assignments students do using those tools.
				8	Section-III Questions based on the respective students' views about the necessity and ease of use with multimedia technologies available at school.
				4	Section-IV Questions based on the respective students' view on the impact of muti-media technologies on his/her academic and overall performance.
				8	Section-V Comprised questions based on the respective students' views on the didactic effectiveness of multimedia technologies.

Data Analysis

Statistical analysis of the above data set indicated a number of challenging results.

(a) Average Class Size

Table 6 shows a cross tabulation between the type of schools studied and their respective class sizes. The data collected from students' questionnaire for class size varied from 28 to 62 per class. The study clarified that there were no government schools with a minimum class size ranging from 25–30 or having a class size between 36–40 students. The class size in government schools either lie between 31 and 35, or it is more than 40 and goes up to 62. It is very interesting to note here that there were no private schools having a class size more than 45 students. The maximum distribution of students in private schools is within the range of 31–45, which is quite a manageable size. Whereas, in case of government schools, the maximum range lies between 31 and 35, which is a small count, or it is variedly distributed between 41 and 65 students per class.

(b) Access to Computer at School

Table 7 presents a cross tabulation between the type of schools studied and the students' access to computer at school. The results very clearly indicate that still all government schools in Delhi are not equipped with computer labs. Approximately three-fourth of the student population studying in government schools is deprived of computer education whereas, in case of private schools, almost all students have access to computers at school.

Table 6
Average Class Size

(Percentage within Type of School)

		Average Class Size								Total %
		25–30	31–35	36–40	41–45	46–50	51–55	56–60	61–65	
Type of School	Govt School		73.5		7.4	3.6	11.2	2.3	2.0	100
	Private School	2.6	25.9	48.2	23.3					100
Total		2.1	36.5	37.4	19.7	0.8	2.5	0.5	0.5	100

Table 7
Type of School Using Computers

(Percentage within Type of School)

		Do you use computer at school?		Total (%)
		No (%)	Yes (%)	
Type of School	Govt School	74.5	25.5	100
	Private School	1.8	98.2	100
Total		18.1	81.9	100

(c) Acquaintance with Interactive Boards and Projectors at School

Provided that all schools considered under this study are subscribers of at least one of the popular Multimedia Learning Systems prevailing today in India, still, the question arises, whether the schools are equipped with the required tools for using those systems effectively. Are the students getting acquainted with the basic tools of Multimedia Technology? Table 8 presents a cross tabulation between the type of schools studied and the students' access to interactive boards to run subscribed multimedia system at school. The collected data clearly indicates that none of the government school students under study is acquainted with interactive boards, whereas more than 95 per cent of the private school students are acquainted with interactive boards.

As presented in Table 9, the data also shows that more than half of the students studying in government schools are not acquainted with projectors, and on the other hand, more than 90 per cent of the students studying in private schools are acquainted with projectors.

(d) Using Multimedia Systems for Assigning Homework and Online Interaction among Teachers and Students

Tables 10 and 11 depict the extent of use of available Multimedia Learning Systems for assigning homework

Table 8
Acquaintance with Interactive Boards

(Percentage within Type of School)

		Do you have acquaintance with Interactive Boards?		Total (%)
		No (%)	Yes (%)	
Type of School	Govt School	100		100
	Private School	4.5	95.5	100
Total		25.8	74.2	100

Table 9
Acquaintance with Projectors

(Percentage within Type of School)

		Do you have acquaintance with Projector?		Total (%)
		No (%)	Yes (%)	
Type of School	Govt School	56.4	43.6	100
	Private School	9.3	90.7	100
Total		19.8	80.2	100

to students and online interaction among teachers and students via its online applications. The data presented in Table 10 clearly indicates that the students who study in government schools do not get any home assignments using a multimedia application subscribed by their schools. About 1.3 per cent of population which has said yes to this question, is quite negligible. Whereas in case of private schools, it shows that more that 58 per cent of the students get homework through multimedia applications.

Similarly, Table 11 presents that not even a single student of the studied government school has the facility to interact online with their teachers and peers via multimedia application subscribed by their school. In case of private schools, it shows that they do have this facility but only 41 per cent of the students use this system.

(e) Acceptance of Multimedia Learning System: Students' views

A new methodology of teaching and learning when introduced in an age-old system needs to be accessed on the basis of three very important dimensions which directly leave impact on the students. These three dimensions are:

Table 10
Home Work is given using Multimedia Learning Systems
(Percentage within Type of School)

		Homework is given using Learning Systems		Total
		No	Yes	
Type of School	Govt School	98.7	1.3	100
	Private School	58.8	41.2	100
Total		67.7	32.3	100

Table 11
Online Interaction with Teachers and Friends
(Percentage within Type of School)

		Online interaction with teachers and friends is done using Learning Systems		Total
		No	Yes	
Type of School	Govt School	100.0		100
	Private School	62.4	37.6	100
Total		70.8	29.2	100

(i) Ease of Use

A learning system is accepted wholeheartedly, if it is easy to implement and makes the user feel comfortable within the learning environment. Table 12 shows the multiple views of all the students (both government and private schools) related to ease of use of the subscribed learning system. Though different students feel differently and not all strongly agree for its ease of use, still the results indicate that nearly 50–70 per cent students agree (or strongly agree) that the system is easy to use and allow them to learn in a comfortable learning environment. Nearly 40 per cent students feel that teachers are now learning facilitators instead of information providers.

(ii) Didactic Effectiveness

Educational efficacy of a system is judged on the basis of how much it motivates the learners, help them in understanding critical concepts and ideas and give a boost to the competency level of the students. Table 13 shows that more than 60 per cent students accept the didactic effectiveness of multimedia technology in learning on the basis of their own personal experiences at school.

Table 12
Ease of Use of Multimedia Learning System (Students' Views)
(Percentage of total students)

Survey Questions asked from students	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree	Total
I can implement MMLS successfully	4.8	7.1	16.4	48.7	23.1	100
MMLS eases the pressure on me as a student	12.6	18.3	19.7	33.7	15.7	100
MMLS allows me to learn at my own pace and style	8.0	13.5	19.7	45.0	13.8	100
Teachers are now learning facilitators instead of information providers	7.6	19.4	30.0	31.8	11.2	100

Table 13
Didactic Effectiveness of Multimedia Learning System (Students' Views)
(Percentage of total students)

Survey Questions asked from students	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree	Total
MMLS motivates me to get more involved in learning activities	6.5	8.4	15.8	46.4	23.0	100

MMLS improves my learning of critical concepts and ideas	5.0	6.9	17.1	45.5	25.5	100
MMLS makes me feel more competent as student	7.0	8.0	20.3	39.5	25.2	100

(iii) Students' Achievements

The education system of all the times persists as a result-oriented system. A student's achievement is not judged just on the basis of how students feel about the comfort level or effectiveness of the prevailing learning environment. Achievement has to be reflected in her/his acquired skills, knowledge and grades. Table 14 shows that 40–60 per cent students saw improvement in their achievement in terms of development of their communication skills, interpersonal skills, skills to work in a collaborated environment with their peers and a direct progress in the grades after they started using multimedia learning systems at school.

Barriers in Acceptance of Multimedia Learning System: Students' Views

During this survey, a few factors acting as barriers in the acceptance of multimedia learning system were also considered and understood. These factors deal with both the technical and non-technical issues which may interfere in the process of learning. The data is received from students of different schools with diverse scholastic backgrounds with varied exposure to technology and relevant practices. Even the students of the same school have stated dissimilar views on most of these questions as their answers to these questions are not only influenced by the common

Table 14
Achievements of Multimedia Learning System (Students' Views)

(Percentage of total students)

Survey Questions asked from students	Not at all	Marginal	Fair	Up to good extent	Excellent	Total
After starting to use MMLS, I have developed my communication skills	8.1	9.9	23.5	36.8	21.7	100
After starting to use MMLS, I see development of my interpersonal skills and collaboration with peers	8.4	11.6	29.2	31.4	19.4	100
After starting to use MMLS, I see my academic achievement (e.g., grades)	7.0	7.9	21.0	32.6	31.5	100

facilities they are exposed to at school level but also by their personal interests and family backgrounds. All these factors together justify the attainment of varied results. Table 15 depicts the results observed by means of a few listed questions asked from students through questionnaire.

(a) Divergence in Students' Access to Computers at Home and School

In answer to the question that Multimedia Learning System is successful only if a student has access to a computer at home, the results are very distributed. As depicted in Table 15, 10.7 per cent of the total number of students strongly disagreed with this statement. About 28 per cent disagreed and 19.5 per cent students neither agreed nor disagreed it. Whereas, 27.7 per cent students agree and 14.1 per cent students strongly agree that multimedia education at school is successful only if they have computers at home.

(b) Technical Constraints

With respect to the data collected in response to the questions about the technical conditions of multimedia system, Table 16 indicates that 8.3 per cent of the students strongly agreed and 21.6 per cent students agreed that the multimedia system does not work regularly in their school. Whereas, 18.2 per cent students strongly disagreed and 30.7 per cent students disagreed with the statement. About 21.2 per cent neither agreed nor disagreed about the same.

Apart from the results collected from these schools where multimedia system was considered as working, a few other government schools either denied having a multimedia system or stated that the system is in non-working condition since years.

Table 15
Non-availability of Computers as a Barrier in the Acceptance of Multimedia Learning System

(Percentage of total students)

Survey Questions asked from students	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree	Total
MMLS is successful only if I have access to computer at home	10.7	28.0	19.5	27.7	14.1	100
MMLS is effective only when extensive computer resources are available at school	12.1	28.4	24.3	24.6	10.7	100

Table 16
Technical Constraints: A Barrier in the Acceptance of Multimedia Learning System

(Percentage of total students)

Survey Question asked from students	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree	Total
MMLS does not work regularly	18.2	30.7	21.2	21.6	8.3	100

(c) Variance in the Familiarity with Computers Skills

In response to the question, if implementing Multimedia Learning System is difficult, because some students know more about computers than others, 62.6 per cent of the students disagreed in total, where 27 per cent students strongly disagreed and 35.6 per cent disagreed, to be precise. About 20.2 per cent of the total students participated in the survey neither agreed nor disagreed with the statement.

Table 17 clearly indicates that most of the students do not consider knowledge of computers as a pre-requisite to learn through multimedia. The students even if they have less technical knowledge of computers, find it easy to use multimedia for learning. Most of the government schools admitted that they do not have computer labs but the students learn through multimedia systems since long.

Table 17
Variance in Familiarity with Computer Skills: A Barrier in the Acceptance of Multimedia Learning System

(Percentage of total students)

Survey Question asked from students	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree	Total
MMLS is difficult because some students know more about computers than me.	27.0	35.6	20.2	13.7	3.6	100

(d) Convention of a Teacher's Help During Study

A teacher has always been the most important resource of knowledge and skills. Even today, the idea of a class studying without teacher's help is difficult to conceive. Still, the data was collected to gauge whether the conception of such a class that successfully learns via multimedia lessons without a teacher's help is possible or not. The study gave very interesting results as shown in Table 18. In all, 38.7 per cent students agreed (10.3 per cent strongly agreed, 28.5 per cent agreed) that multimedia system is successful only if the teacher helps them in class, whereas 38.8 per cent, a very close percentage of students gave exactly opposite responses by showing their disagreement (27.4 per cent disagreed, 11.3 per cent strongly disagreed). This indicates that teachers were, they are and will always remain an integral part of the classroom in Indian education scenario. If not as a resource person, they are revered as facilitators of the system where multimedia provides them with the knowledge pools.

(e) More Time Required to be Spent on Problems by Students

It is a point of concern if learning through multimedia learning system requires more time to be spent on problems. When asked, 49.8 per cent students strongly disagreed with the statement (14.0 per cent strongly disagreed, 35.8 per cent disagreed); 24.6 per cent students neither disagreed nor agreed with the statement; and 25.6 per cent students agreed (18.4 per cent agreed, 7.2 per cent strongly agreed) that they spent more time on problems if they study through multimedia system in comparison with books and class notes. The higher percentage of students' disagreement with the statement clearly states (depicted in Table 19) that learning through multimedia system can be done within the prescribed time, unless the students get themselves lost in the startling world of multimedia learning material.

Table 18
Convention of a Teacher's Help during Study: Is it a Barrier in the Acceptance of Multimedia Learning?

(Percentage of total students)

Survey Question asked from students	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree	Total
MMLS is successful only if the teacher helps me.	11.3	27.4	22.5	28.5	10.3	100

Table 19
Convention of a Teacher's Help during Study: A Barrier in the Acceptance of Multimedia Learning

(Percentage of total students)

Survey Question asked from students	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree	Total
MMLS demands that too much time be spent on problems.	14.0	35.8	24.6	18.4	7.2	100

(f) Students' Negligence of Important Traditional Learning Resources

With the inclusion of computers, internet and multimedia technologies in teaching-learning, it is presumed that students would now neglect the use of important traditional learning sources like prescribed text-books, library, etc. When asked, the results (Table 20) which came out, were very satisfactory. About 74.5 per cent students disagreed (61.9 per cent strongly disagreed and 12.6 per cent disagreed) that they have neglected any important traditional learning resources. About 14.3 per cent students neither agreed nor disagreed and only 12.1 per cent students agreed (6.4 per cent agreed and 4.7 per cent strongly agreed) that they neglect using library and textbooks while studying with the help of multimedia learning systems subscribed by their school. The results clearly indicate that as per students' views, multimedia learning system does not interrupt the traditional ways of learning and is an additional learning resource to them.

Table 20
Neglecting Important Traditional Learning Resources by Students' Involvement in Multimedia Learning

(Percentage of total students)

Survey Question asked from students	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree	Total
After starting to use MMLS, I have started neglecting important traditional learning resources (e.g., library, compulsory textbooks, etc.)	61.9	12.6	14.3	6.4	4.7	100

(g) Increase in Amount of Stress and Anxiety on Students due to Multimedia Learning

Exposure to technology may increase the amount of stress and anxiety on the students who are not at ease with it. But, in answer to the same question, as depicted in Table 21, 64.4 per cent students disagreed (30.6 per cent strongly disagreed and 33.8 per cent disagreed). About 18.1 per cent students neither agreed nor disagreed to the statement. Whereas, 17.5 per cent students agreed (10.8 per cent agreed and 6.7 per cent strongly agreed) that exposure to multimedia learning system has increased their stress and anxiety levels.

(h) Is Multimedia Learning System an Overburden on Students?

Apart from the textbooks prescribed by the school, their class lecture notes, reference books suggested by the teachers, library books, etc., students have no limits to the learning material that they are all the time engaged in studying for better academic records and learning. In this setup, the point of concern is, whether they feel overburdened when they are also exposed to multimedia learning system as a part of their study? The results of the study as depicted in Table 22 indicate that 58.5 per cent students disagree (25 per cent strongly disagreed and 33.5 per cent disagreed) with the statement. They do not consider classes run on the subscribed multimedia system as an overburden. Whereas, 18.2 per cent of the total strength agreed (11.5 per cent agreed and 6.7 per cent strongly agreed) with it. About 23.4 per cent neither disagreed nor agreed to consider multimedia learning system as an overburden.

Table 21
Neglecting Important Traditional Learning Resources by Students' Involvement in Multimedia Learning

(Percentage of total students)

Survey Question asked from students	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree	Total
MMLS has increased the amount of stress and anxiety in me.	30.6	33.8	18.1	10.8	6.7	100

Table 22
Learning through Multimedia System an Overburden on Learners (Students' Views)

(Percentage of total students)

Survey Question asked from students	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree	Total
MMLS is overburdening me as there is no limit to study material.	25.0	33.5	23.4	11.5	6.7	100

Findings

(a) Multimedia lessons are available only for the core subjects like Mathematics, Science and Social Studies. Only a few lessons for English and Hindi are available. No multimedia lessons are available for Sanskrit and foreign languages being taught in schools.

(b) Regular content updating to make multimedia lessons at par with NCERT syllabus is not found.

(c) No multimedia lessons are available for the subjects like Arts and Physical Education. Subject-based approach to organise the curriculum has completely neglected these areas of knowledge and they just remain as co-curricular activities. Though, these areas of knowledge have rich potential for the expansion of skills, aesthetics, imagination, creativity, resourcefulness and team work. Hence, reasonably good possibilities for the creation of excellent quality multimedia content to teach art, craft and physical education is there. Here arises a need for curricular reform.

(d) Schools have not subscribed all available tools of Educomp and TeachNext learning system.

(e) Instead of projectors and big screens, CAL lab programmes run on TV sets in government schools. It is difficult for a class of 40–50 students to watch the programme properly and understand the critical concept at the same time.

(f) Even there is a major loss in terms of time during each CAL lab class, as the students are required to be moved to CAL labs for every lesson they learn via multimedia. Hence, there is an urgent need to provide government schools with projectors having USB support in each class for which there is an availability of multimedia content. This way, the students of government schools can learn in equivalence to the students of private schools.

(g) The electricity supply in government schools also stands as a barrier in running regular CAL lab classes. Though the generators are provided, they remain non-working, once gone wrong.

(h) A number of government schools approached admitted that multimedia system was installed in the schools earlier but due to some technical issues, the system is no more working.

(i) Most of the government schools indicated absence/non-working condition of computer labs for students. It also raises a question on the technical support system which is required for the regular functioning of machine sets. The levels of knowledge and understanding of computer and multimedia technology differ in students of government and private schools because of lack of access to computers at home as well as at school. With reference to Table 7 (depicted in this paper), nearly 75 per cent of the students studying in government schools, do not have access to computer at school, whereas 98 per cent private school students use computer at school.

Conclusion

Teachers and parents both play equally important role in engaging children productively with the education system and make their journey of knowledge acquisition enjoyable and fruitful. The key to its success is to recondition the system and make the process of learning a "Heart's Work" instead of just hard work. It is very much necessary that we, as teachers and parents do not just equip our kids with hi-tech futuristic learning gadgets and turn them into machines handling other machines, having no social engagements at school and home. Rather, we should encourage them to do and learn from every activity in day-to-day life.

The learning technologies are helpful but would never replace the teacher "The Guru" in Indian education system. A multimedia lesson can be designed extremely well, can be paused and replayed again and again to understand a critical concept but it can never deal with each and every individual and her/his problem in a customised way like a human. Still as per the educational settings and ever-growing competition which students have to face, amalgamation of technology in teaching-learning is the need of the hour. The point of focus here is that whatever resources we have for this fusion of technology with learning in Indian education system, we need to make them available and equipped with technical support so that every user of the system is benefited equally.

Technology, if used properly as a support, can really make a difference in terms of involvement of the students with learning process. Not only increment in grades of students, it can also help in building their confidence, development of inter-personal skills, communication and social relationship with peers. All these qualities make a student a perfect learner. To accomplish this

task, it is necessary that not only problems are identified at ground level but the process to solve these problems should be initiated at the ground level itself. Every single student, teacher, technical staff and school authorities must feel themselves equally accountable to make this difference.

Future Work

A similar kind of study can be done along with the other two important ends of the flow called "Education". These are teachers and parents. Teachers are the source, that can help in assessing the ease of use and level of acceptance of fusion of multimedia in teaching practices, their exposure to technical training opportunities to perform well in the technology enhanced classrooms and barriers in their acceptance of the same. Similarly, parents will be able to provide us the revelation of a few very important strings which we might have left to hold while enquiring students about views and experiences about multimedia learning systems. Parents might be able to share the variations in behavioural patterns (if any), study habits, changes in knowledge levels and academic records of their kids after they started using multimedia for learning. Both the sources might share their own views and suggestions for the overall development.

References

A Digitalised Version of Traditional Classrooms, Career Connect, 31 December 2013. [Online] Available at: http://educomp.com/news/digitalized-version-traditional-classrooms

Atherton, J.S. 2013. Learning and Teaching; Experiential Learning. [Online] Available at: http://www.learningandteaching.info/learning/experience.htm

Educomp Annual Report. 2013–2014. Building on Strengths to Reach Higher Potential, pp. 2–7.

Felder, R.M. and L.K. Silverman. 1988. Learning and Teaching Styles in Engineering Education. *Engr. Education*. Vol. 78. No. 7. pp. 674–81. [Online] Available at: http://www4.ncsu.edu/unity/lockers/users/f/felder/public/Papers/LS-1988.pdf

Felder, R.M. and J. Spurlin. 2005. Applications, Reliability and Validity of the Index of Learning Styles. *International Journal of Engineering Education*. Vol. 21. No. 1. pp. 103–12. [Online] Available at: http://www4.ncsu.edu/unity/lockers/users/f/felder/public/ILSdir/ILS_Validation(IJEE).pdf

Fleming, N.D. 2001. Teaching and Learning Styles: VARK strategies. Christchurch, New Zealand: N.D. Fleming.

Government of India. 2007. *Sarva Shiksha Abhiyan Framework*. Accessed from: http://ssa.nic.in/ssa-framework

Kolb, David A. 1984. *Experiential Learning Experience as the Source of Learning and Development.* Prentice-Hall, Inc. Englewood Cliffs, N.J.

Minutes of the 199th PAB meeting held on 10 April 2013 for Approval of the Annual Work Plan and Budget of Sarva Shiksha Abhiyan (SSA) Delhi. [Online] Available at: http://ssa.nic.in/pabminutes-documents/Pab%20Minutes%202013-14/Delhi/Minutes%20of%20Delhi.pdf

NCERT. 2005. *National Curriculum Framework,* Chapter 2, pp. 25–27.

Next Education: Creating a Brighter Tomorrow for Today's Students. *Silicon India Magazines,* 5 December 2014, [Online] Available at: http://www.siliconindia.com/magazine-articles-in/Next_Education_Creating_a_Brighter_Tomorrow_for_Todays_Students-PGRJ58350689.html

Overview on Computer Aided Learning (CAL) under Sarva Shiksha Abhiyan. [Online] Available at: http://ssa.nic.in/quality-of-education/CAL-07.pdf/at_download/file

Smart! But can it make your child better? *Forbes India magazine*. December 2012. Available at: http://forbesindia.com/article/real-issue/smart-but-can-it-make-your-child-learn better/34317/1#ixzz3oWcaIvLa

Sudman, Seymon and Norman M. Bradburn. 1982. *Asking Questions: A Practical Guide to Questionnaire Design.* San Francisco: Jossey-Bass Publishers.

TeachNext Solution for Digital Learning in Schools for the K-12 Segment in English and Indian Languages: Next Education India Pvt. Ltd, WES, May 2014. [Online] Available at: http://wes.eletsonline.com/2012/2012/05/24/teachnext-solution-for-digital-learning-in-schools-for-the-k-12-segment-in-english-and-indian-languages-next-education-india-pvt-ltd/

Implementation of RTE and Status of KGBVs in Gujarat

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Abstract

The paper discusses the status of KGBVs in Gujarat vis-à-vis the norms and standards specified in RTE for minimum infrastructure, appointment of teachers, teacher qualification and training, pupil–teacher ratio, academic responsibility, community participation and quality interventions. The paper is an outcome of the research undertaken to study the Impact of KGBVs on Girls Education and Retention and exhausts all the 86 KGBVs spread across 19 districts (as in 2012) in Gujarat under the management of both SSA and Mahila Samakhya (MS). The tools for data collection included information schedule, check-list, observation schedule, questionnaire and unstructured interview with the school heads, teachers and members of the community, the CRCC, BRCC and Gender coordinator in district as well as state. The findings of the study reflect a mixed picture of the status of KGBVs vis-à-vis the fulfilment of norms and standards under RTE. Regarding the "retention", it was observed that success has been achieved in bringing the girls to KGBVs with the consent of their parents. However, the promise to quality education which was the underlying focus of the KGBV scheme is still a matter of serious concern. KGBVs have a greater purpose, much beyond good food, clothes, play and a safe stay; this needs to be clear both to the functionaries as also the beneficiaries.

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Introduction

Education is both a human right in itself and an indispensable means of realising other human rights. It is a cornerstone of social and economic development and has a vital role to play in empowering women, safeguarding children from exploitative and hazardous labour and sexual exploitation, promoting human rights and democracy, protecting the environment, and controlling population growth (Art. 13, Universal Declaration of Human Rights).

Till the 19th century, education in India was for the privileged few until the Article 45 which promised free and compulsory education to all in the 6–14 age groups. However, it was made a part of the Directive Principles of the State Policy and did not come with any accountability framework or guidelines or mechanism for providing free and compulsory education to all. Universalisation of Elementary Education, though promised could never get the required focus until the launch of Operation Blackboard (OBB) in 1984 followed by the Mid Day Meal Scheme, the DPEP and SSA. These schemes contributed to a great extent in expanding the elementary education across the country and reaching the unreached. Education of girls has been a national priority for the Government of India and number of schemes, programmes and scholarships being announced for the girl child. However, it is seen that girls' education has suffered for many reasons in our society. Reaching out to the girl child is central to the efforts to universalise elementary education. To target pockets where girls education is lagging behind, the Government of India under SSA has launched two focused interventions for girls, the National Programme for Education of Girls at Elementary Level (NPEGEL) and the Kasturba Gandhi Balika Vidyalaya (KGBV), to reach out to girls from marginalised social groups in over 3,282 educationally backward blocks in the country where the female rural literacy is below the national average and the gender gap in literacy is above the national average. The issue of retention and successful grade completion among girls still remained an issue in spite of the consistent efforts both at the national and state levels.

What is Right to Education?

The RTE is a fundamental right that enshrined in law for the first time the rights of all Indian children aged between 6–14 years to free and compulsory elementary education regardless of caste, class, gender, etc. (Article 21A). Fundamental rights are justiciable which means that one can go to court of justice in case of denial of the right. The RTE Act, though deserves due credit for laying down in fairly specific terms awareness on the part of schools and concerned authority to provide free and compulsory elementary education to all children; how far it takes cognizance of the present reality

of the schools across the country and the readiness of the states to bear the financial implications is still a question. What provisions the right provides to take action against the faltering individuals or concerned authorities that are not able to ensure fulfilment of the standards and norms prescribed in the RTE Act 2009.

Implementation of Right to Education

The Act clearly defines the schooling-related entitlements of a child which include the norms for physical infrastructure and teachers, and the responsibilities of the school, school heads, community and local authorities. All these norms, standards and provisions are applicable to each and every school providing education from Grades I to VIII whether run by government or private entities. The following are the norms specified for all elementary schools in the country.

Providing free and compulsory (admission, attendance and completion of EE) education in a neighbourhood school (Article 13(2)A of the Universal Declaration for Human Rights and Article 21, Right to Education)

Free: Removal by the state of any financial barrier that prevents a child from completing eight years of schooling.

Compulsion: on the state; parental duty to send children to school. Not enrolled/dropout children be admitted to age-appropriate class after a period of special training.

No detention: No child shall be failed or expelled from school up to Class 8 (corresponds to the age group 6–14 years).

Norms and standards specified are applicable to all schools.

Establishment of neighbourhood schools within three years with provision of minimum school infrastructure like:

1. All weather school buildings.
2. One-classroom-one-teacher.
3. Head Teacher cum Office room, library.
4. Toilets, drinking water and kitchen sheds.
5. Barrier free access.
6. Playground, fencing and boundary walls.

Qualification for appointment of teachers as laid down at the national level are:

1. Appointment of teachers through the Teacher Eligibility Test.
2. Academic responsibility of the teachers specified.
3. No private tuition by full-time school teachers.
4. Teacher–Pupil ratio of 1:30.
5. School days (200 to 220 days) and total instructional hours (800 to 1,000 hours).
6. Working days for teachers — weekly hours of work.
7. Provision of teachers as per prescribed PTR within three years.
8. Training of untrained teachers within a period of five years.

Community participation ensured through School Management Committee.

1. SMC includes parents, teachers and elected representatives.
2. 3/4 members from among parents of children in the school.
3. Proportionate representation to weaker and deprived sections.

Allocation of major responsibility to the Local Authority — Panchayati Raj system.

1. Proactively monitor the delivery of rights and entitlements of children.

Independent monitoring of the implementation of the Act is assigned to the National Council of Protection of Child Rights (NCPCR).

1. Examine and review safeguards for rights under this Act, recommend measures for effective implementation.
2. Inquire into complaints relating to child's right to free and compulsory education.
3. Conduct periodic social audit of the status of implementation (Govinda, 2011).

Considering that a large number of schools, majority of them being located in the state sector, do not currently fulfil these norms, this is indeed a huge thrust for accountability on the part of the State. The implementation of the Act involves serious financial and governance challenges. Considering that different Indian states are at different stages of development both in terms of economic and educational indicators, these challenges are also likely to manifest differently. On the other hand, even those states that do not face major financial challenges need to put systems and processes in place to improve their delivery and meet the RTE expectations in true spirit and achieve the dream of Universalisation of Elementary Education. (Jha *et al.*, 2013)

It is seen that girls' education in India has suffered for many reasons in our society. Reaching out to the girl child is central to the efforts to universalise elementary education as also to RTE. *Sarva Shiksha Abhiyan* or "Education for All" programme recognises that ensuring girl's education requires changes not only in the education system but also in societal norms and attitudes. The research paper has tried to study the status of the KGBVs in Gujarat and explores how far they have met the norms prescribed in the RTE.

Status of KGBVs in Gujarat and Compliance with RTE

The study conducted a detailed survey of all 86 KGBVs of Gujarat managed by both SSA and *Mahila Samakhya.* The survey studied the status of KGBVs with regard to the availability, adequacy, usability, relevance and appropriate utilisation of infrastructural resources, the profile of teachers and students and their appointment and number of working days, the enrolment patterns, retention rate and drop-out of girls in KGBV, the social relationship within

staff members, teachers and girls and amongst girls and the teaching learning process in KGBVs in terms of the achievement of students and the observation of classroom teaching. Thus it attempted to study the compliance of KGBVs in Gujarat with norms and standards set for minimum infrastructural resource, teacher appointment and academic work and the quality interventions.

The tools used for data collection included an information schedule, observation schedule for observing classroom teaching, focus group discussion, questionnaire for teachers, gender coordinator, CRCC/BRCC and achievement test for students in Grades 5, 6, 7 and 8. The tools were designed with the experts in education through a workshop and translated into Gujarati.

The achievement test used in the present study was drawn from the syllabus that had been taught in the first term and for which examinations had been conducted in all the KGBVs. The achievement test (Total marks: 50) included all the subjects Physical Education (Marks: 7), Gujarati (Marks: 7), Hindi (Marks: 7), English (Marks: 7), Social Studies (Marks: 7), Science (Marks: 7) and Mathematics (Marks: 8); for the Classes V, VI, VII and VIII. The duration of two hours was given to each student to complete the test, after making appropriate seating arrangements to avoid any sort of malpractices.

The data collection was done personally by a team of five field investigators interviewed and trained through mock sessions for a week in understanding the tools and using them during data collection. This was accompanied by random visits to any KGBV in the given zone to cross-check the data. Factual information was analysed quantitatively using frequency and percentage analysis while information obtained through observation, focused group discussion, interview schedule, field notes and field diary was content analysed.

Findings

The objective of KGBV is to ensure access and quality education to girls from disadvantaged groups by setting up residential schools at upper primary level. The child entitlements promised under RTE can be classified under three main categories: access related, school facilities and teachers related, and learning process related. The findings discuss the status of KGBV with regard to the child entitlements in these residential schools and how far these schools fulfil the objective of their establishment.

Access to KGBV

There are 86 KGBVs spread across 86 educationally backward blocks in 19 districts in Gujarat, established either under SSA or *Mahila Samakhya*. Of these, 43 are Model/Type I, 21 are Model/Type II and 22 are Model/Type III.

While these provide access to the

girls in these blocks, the interaction with children and the available data on registers in most of the KGBVs revealed that they were already going to school and were discontinued from regular schools and admitted to these residential schools.

- About 66.54 per cent of the girls had been to the school before coming to KGBV. However, the identification whether these girls were really dropouts was not possible.
- There were about 12.67 per cent of the girls who had never been to school. It has to be noted that the records for about 21.0 per cent of the girls' educational status before coming to KGBV was not known from the records available at KGBV.

The enrolment data also stated that out of 6,243 girls at KGBVs 1,957 were from OBC category, 2,095 were ST, 282 were SC, 62 from general category and 47 were from minority community. Thus a good representation of those from disadvantaged categories was seen.

School Facilities in KGBV

KGBVs being residential schools, apart from an all weather building and sufficient classrooms, the facilities for boarding and lodging, kitchen shed and healthy and safe food and grocery items, safe drinking water, sufficient washrooms for all girls, an open play ground, cleanliness and hygiene and safety and security of girls are very important.

- Of the 86 (100 per cent) KGBVs visited, 58.1 per cent had their own building while the remaining were running in rented accommodations. The difficulties faced at a rented accommodation by the resident teachers and girls were many, which varied from unhygienic and suffocating environment to lack of drinking and toilet facilities, open kitchen area and safety and security issues as well. Many of these have the permission to have their own building but it was either under construction or the construction was yet to begin due to several administrative problems.
- The availability of material resources was not a problem in most of the cases but adequacy, usability and appropriate utilisation was not observed in many cases, e.g., the sewing machines, RO system, etc., were available in most of the cases but not in working condition and were just utilising the storage space.
- More than 80.0 per cent have stated that there is problem in availing the daily requirements like milk, vegetables, etc., due to the location of KGBV. The absence of milk and/or milk products in the regular menu at the KGBVs becomes a serious issue. The availability of sufficient quantity of food was not a problem in almost every KGBV but its quality was a subjective matter. There was a lack of variety in vegetables

in many of the cases and fruits were absent from the menu in almost all the KGBVs.

- Although in 55.0 per cent of the cases the market was within 0–5 km, in about 65.12 per cent cases the nearest hospital was within 0–5 km from KGBV while in most of the cases, i.e., 91.86 per cent the nearest village was within 0–5 per cent km. The point is that the nearest village or market or hospital is also not equipped with sufficient amount of necessities, hence, it was found that children hardly got milk and green vegetables in their daily diet.
- The availability of appropriate mode of transport or sometimes any means of transport is also a question after a certain hour of the day in many of the KGBVs due to their remote location.
- The grants are also not received timely. But about 73 per cent of the teachers stated that the books, uniforms, sweaters and other necessities are availed timely at KGBVs.
- The absence of compound wall and gate at the KGBV was seen in 20 per cent of the cases, which is a serious issue regarding the safety and security of the residents of KGBV.
- In 9.3 per cent of the cases, open hanging wires have been observed in the KGBV building. This is very dangerous for the inmates who are not fully aware of the dangers associated with it.
- Cleanliness and hygiene are issues which need immediate attention in many KGBVs.
- In 4.23 per cent of KGBVs managed by SSA, the outlet for water from toilet and bathroom was into open ground behind the building which was very unhygienic.
- In 13.33 per cent of cases (KGBV managed by MS) and 16.9 per cent of the cases (KGBV managed by SSA), there was no arrangement for sewage at KGBV. This also should draw attention of the authorities as to there is no fund allotted for such facilities.
- About 75.16 per cent of the teachers stated that there is a concern regarding the security of the girls at KGBV.

Teachers and Teaching in KGBVs

- About 43.9 per cent of the teachers have done PTC and except for the 7 per cent of the teachers who did not respond, all of them were either graduates or post graduates with a professional degree. The staff in all KGBVs were well qualified.
- The presence of good number of physical education teachers was reflected in the students' achievements in various competitions at the state and national levels.
- Of the total recruitment there was only 1.1 per cent with graduation in science and a few in the post graduate category also, but could not fulfil the need of the Science/ Math teachers at KGBV reflected

in the performance of students in the two subjects.

- About 22.1 per cent of them have been working as head teachers and 57.2 per cent of them are full-time teachers while 15.6 per cent are part-time teachers. Due to poor transportation or place of residence being far away, the part-time teachers also stayed in the campus as full-timers in most cases.
- About 13.9 per cent of the teachers had 4–5 years of teaching experience while about 71.7 per cent of the teachers had 1–3 years of experience.
- About 18.7 per cent of them had received training in teaching skills. About 36 per cent of them had obtained training in teaching Mathematics and Science and 4 per cent had received training for administrative skills.
- Teachers felt that they needed training in making and using TLM effectively for teaching the girls at KGBV, teaching of Mathematics in Class VIII, activity-oriented approach in teaching Science, vocational skills that are in demand amongst the children and their parents.
- On an average, on the day of visit 86.69 per cent of teachers and 79.66 per cent of students were found to be present. The PTR on the day of visit was 16.25 and as per records it was 17.69. Except for few cases, the situation seemed to be practically ideal for teaching learning process.
- With regard to PTR for each district, Valsad stood at the top with regard to both teacher and student attendance. Amreli had the lowest percentage of teacher's attendance and Mehsana showed lowest in student attendance.
- In Kheda, PTR was found to be high while it was found to be lowest in Panchmahal. However, the achievement shows lowest scores in the district.
- There was a lack of job satisfaction amongst the teachers owing to low salary, contractual appointments and a 24 hours responsibility. (About 65.0 per cent were not satisfied with the salary they receive). Nevertheless, it was surprising, the teachers (about 73.0 per cent) were wishing to continue to work at KGBV and about 96.4 per cent said that they enjoy being at KGBV and attributed this to the positive social relationship with colleagues and the students.
- The teachers also expressed that they have learnt to live in cooperation and harmony with all in KGBV. They identify the strengths and potentials of the colleagues and learn from each other the skills to live together.

School Management Committees and Parent–Teacher Associations in KGBVs

- While the KGBVs did not have a record of the SMCs, interaction

with the teachers revealed that the *sarpanch* and key members in the community were active members and all decisions were taken with joint decision of the head teacher, the *sarpanch* and the CRCC.

- In case of PTAs, 83.0 per cent teachers said they faced problems in arranging PTA meetings. However, matters with regard to the progress of the child were discussed while parents came to leave or pick their wards.
- About 27.82 per cent (74) teachers said that the parents are interested to continue education for the girls. About 19.92 per cent (53) teachers said that the progress in girls is observed and appreciated by the parents and their community. So, they wish for a better future for their girls.
- About 14.29 per cent (38) teachers said that the topic of educating the girls for making them self-sufficient is the main focus in the parent–teacher meet at KGBVs. Financial conditions of parents and other problems are also discussed at length.
- About 13.16 per cent (35) teachers said that parents are ready for secondary education if it were in KGBV or similar residential schools but not in regular co-education schools.
- About 4.89 per cent (13) teachers reported that parents are not interested in educating girls after they attain maturity. The girls are married off early in their community.

Teaching-learning in KGBVs

- Approximately 83 per cent of the teachers stated that they get academic support from CRCC and/or OIC gender.
- The academic classes were reported to be monitored properly by CRCC in approximately 94 per cent of the cases and it was stated that in most of the cases (i.e., 92 per cent) get feedback regarding the teaching-learning process and the content taught. If this was the case then the teaching-learning processes at KGBV should have been better than what was observed in the present study.
- Grade-wise time-table was available in 40 per cent of KGBVs; however, children in most of the cases were not aware of what they were going to learn.
- Almost equal number of classes for all grades were observed, however, when it came to subject-wise distribution, more language classes were observed for the teachers chose to teach language preferably *Gujarati,* followed by Science. Only in 16.6 per cent of the cases the teacher conducted activity during the classroom teaching. The teacher gave homework in about 35.09 per cent cases.
- In about 65 per cent of the cases, the students spend more than 60 per cent of the time in the class listening to teachers' lectures only. In 16.7 per cent of the classes observed, there was no initiation from the students' side during the

whole class. While in about 10 per cent of the cases student initiation was observed either for reading or demonstrating or asking doubt.

- We observed that in about 35 per cent of classes, the students remained silent and confused.
- Students were not at all enthusiastic in learning in 2.6 per cent of the classes observed. While in about 5.5 per cent of the cases, enthusiasm was observed more than 90 per cent of the time in the class.
- Students did not participate in any activity in 9.6 per cent of the classes observed. While in about 6 per cent of the cases, participation in activities was observed for more than 90 per cent of the time.
- In spite of all the facilities being provided and so much of funds utilised for the academic upliftment of the girls, their achievement did not reflect a good status. The percentage average achievement of the KGBVs spread across the state in all the subjects together is 45.76 per cent. The same for each subject: 65.71 per cent in Physical Education, 34.86 per cent in Gujarati, 43.57 per cent in English, 36.57 per cent in Hindi, 48.86 per cent in Science, 58.43 per cent in Social Studies and 33.88 per cent in Mathematics. The achievement of girls was in a very sorry state except for Physical Education. In districts like Panchmahal and Bhavnagar, achievement in even Physical Education was found to be very poor.
- The districts Junagadh, Mehsana and Narmada showed better performance compared to other districts of the state, while the districts Panchmahal, Vadodara and Surrendranagar showed very low performance when all subjects were considered together.
- There were two KGBVs, KGBV, Manki (Deesa) of Banaskantha [KGBV-10(Ba/I/S)] and KGBV, Kajardi (Una) of Junagadh [KGBV-33(Ju/I/S)] excelling in academics when compared to the other KGBVs. There were other two KGBVs, KGBV, Godhra [KGBV-55(Pc/II/M)] and KGBV, Doli (Santrampur) [KGBV-56(Pc/II/M)] from Panchmahal district showing the least scores of achievement amongst the girls in all the subjects. It was ironical that these two KGBVs showed the lowest PTR as in the records.
- KGBV has played a very important role in making the people realise the importance of education in a girl's life. KGBV made it practical for parents of girls at KGBV to see their girl child in school and learning, because for them meeting the daily needs was difficult, so education could never appear in the list of tasks for their children. There was an increasing readiness amongst parents to give secondary education to their child further in some residential schools like KGBV where child is secure

and well taken care of. Many girls continued studying in *ashram shalas* and regular schools in the vicinity of their residence. Thus KGBVs to that extent fulfilled the objective of enrolling and retaining children providing them free and compulsory elementary education up to the age of 14 years. However, quality of the education was still a question mark.

Discussion

The teachers are the kingpin of the entire education system and it is this factor on which lies the onerous responsibility of ensuring the effective implementation of RTE Act (Kaushal, 2012). While the teachers in KGBVs were professionally qualified, most of them had their basic degrees in Arts, hardly 1.1 per cent had degrees in Science. Classroom observations and poor achievement of students in languages gave evidence of the quality of teaching-learning, the content knowledge and professional training of the teachers. Interactions with the teachers revealed that they hardly had any knowledge on pedagogy or anything beyond the textbooks, about the culture and lifestyle of the girls and such other essentials which would make teaching-learning interesting and increase the retention. This in turn reflected on the current day teacher education programmes ill suited to meet the needs of students. Given the immense importance of this link, it is ironical that there has been a continuous reluctance on the part of the state to respond to this issue with the seriousness it deserves and given the target of RTE, which has to be achieved in five years, it is likely that the quality of teachers' education will be compromised.

In all the 86 KGBVs it was found that except for Physical Education and Social Science, students were poor in other subjects, even in Gujarati which is supposed to be the mother-tongue and the spoken language of the state. The non-detention policy of the RTE Act supposedly may promote a child from one class to another but mere declaration of non-detention policy is not enough to eliminate the root cause of stagnation. Instead, concepts like self-assessment and self-development need to be inculcated.

Under the pressure to meet the national and international commitment, the progress towards Universalisation of Elementary Education is being viewed unduly in terms of meeting quantitative targets. There seems to be an inadequate focus on schooling processes and outcomes. Central as well as state governments are heavily preoccupied with reporting the progress in terms of expansion of the schooling facilities and coverage of children in the relevant age group and hence, neglecting the qualitative aspects (Kaushal, 2012). The study reports that the number of KGBVs expanded from 31 in 2005 to 86 in 2011 of which 40 per cent are running in rented buildings with lot of physical and infrastructural constraints, compromising the safety

and security of girls. The quality of life and teaching-learning both in this case is at stake. Even the children enrolled in the KGBVs are not from far-off villages or of migratory parents, rather of the farmers who stay in the neighbourhood, and the records as well as the interaction with the children revealed that very few of them were out-of-school or never enrolled. In fact they were convinced to join the KGBV and had come from the neighbouring school, so the basic purpose of providing access and residential facilities to the out-of-school, never enrolled or drop-out girls, who due to societal norms have not been able to make it to schools, remains forfeited. However, the positive aspect was that most of the girls enrolled belonged to disadvantageous groups.

The formal school system, denies space to children and teachers to engage with subjective experiences and life as it plays out for the student. The regime of standardisation dominates the schooling system and leads to the fragmentation of learners' lives (Kaushal, 2012). KGBVs being residential schools were observed to have provided sufficient space for unfoldment of one's experiences, the teacher–student relationship rather than being confined in hierarchical terms was more of a friend, an elder sister. However, the sad part was that this closeness in social relationship was not being capitalised to use the life experiences of child for learning subject-based knowledge. Learning of basic mannerisms, values like cleanliness, sisterhood, harmony, tolerance, sportsmanship, etc., was being developed.

It is, therefore, advocated to create learning environments that invite children to share and to create curricula and content that the participating children find enough to connect with and express themselves.

The Way Forward

Article 13 of the International Covenant on Economic, Social and Cultural Rights covers the right to education most comprehensively and explains that education in all its forms and at all levels shall exhibit the following interrelated and essential features, *viz.*, Availability, Accessibility, Acceptability and Adaptability which is to say availability of sufficient schools within the jurisdiction of state, physical, social and economic accessibility to schools, teaching methods and content that find meaning with the cultural context, is relevant and of good quality and is flexible to accept the needs of changing society. Perhaps for education in India and specifically for the KGBVs, it can be said that only the first A, i.e., availability of educational institutions has been ensured, the issue of accessibility haunts many of our schools where inclusive classrooms and inclusive schools is still a distant reality. Availability of schools or schooling facilities was not an issue in Gujarat. The PTR of 1:16 was also ideal and teachers were

professionally qualified which is to say that some amount of success has been achieved in terms of providing access, required facilities and qualified teachers. However, rationalisation of teachers' appointment and improving the quality of teaching-learning is required for impacting the achievement of children in all subjects. This meant fulfilling the Acceptability and Adaptability norms in the absence of which education may find little meaning to the child's world of learning.

This would require seeing RTE not just as a right but as a duty and adding the fifth 'A' that is Accountability. While having RTE as fundamental right itself ensures its justiciability, the outlined model rules do not specify any action in case of denial of any of the norms/ features or standards of RTE. The entire system will, therefore, have to be self accountable if RTE has to be a reality in the true sense, ensuring all five 'A's. The beneficiaries and the functionaries together need to understand the real purpose of education which is much beyond availability of free food, clothes, books and scholarships or a safe stay. A dream has to be nurtured in the children for a better and secure future by making them self-reliant and helping them to grow knowing and respecting the realities of both the worlds, one from which they come and the one which we are training them for that in the truest sense would mean achieving the Right to Education for all.

References

Government of India. 2009. Right of Children to Free and Compulsory Education Act. Gazette of India, August 27.

———. 2009. Model Rules under the Right of Children to Free and Compulsory Education Act, New Delhi.

———. 2013. *National Report on 2nd Evaluation of KGBV*, GOI, New Delhi.

Govinda, R. 2002. *Education for All in India: How Far and Which Way?* New Delhi: Oxford University Press.

———. 2005. Elementary Education: Progress and Challenges. *Yojana.*

———. 2011. *Implementing Right to Education in India: Major Issues and Challenges*, Presentation at Round Table on Right to Education-Ensuring Access with Equity and Quality, Hotel Shonar Gaon, Dhaka, Bangladesh.

Juneja, N. 2005. Exclusive Schools in Delhi and Their Law. *Economic and Political Weekly*, Vol. XL, No. 33.

———. 2012. India's Historic Right to Free and Compulsory Education for Children Act 2009. The Articulation of a New Vision. In Kazuyo Minamide and Fumiko Oshikawa (Eds.), *CIAS Discussion Paper No. 24 Right to Education in South Asia: Its Implementation and New Approaches*, The Centre for Integrated Area Studies, Kyoto University.

Jha, J., N. Ghatak, M. Shreekanth, and S. Bakshi. 2013. Implementing the RTE Act, 2009: The Real Challenges, Discussion Paper. Centre for Budget and Policy Studies: Global Development Network and Care India.

Kaushal, M. 2012. Implementation of RTE in India: Issues and Concerns. *Journal of Management and Public Policy.* Vol. 4. No. 1. pp. 42–48.

Ojha, S. 2013. Implementing Right to Education: Issues and Challenges. *Research Journal of Educational Sciences.* Vol. 1. No. 2. pp. 1–7.

Right to Education: Scope and Implementation. 2003. *Economic and Social Council,* UNESCO Publication. pp. 6–15.

Sarkar, C.C. 2012. *Right of Children to Free and Compulsory Education Act, 2009 and its Implementation,* India Infrastructure Report 2012. pp. 33–43.

Teltumbde, A. 2012. RTE: A Symbolic Gesture, *Economic and Political Weekly*. Vol. 47. No. 19. pp. 10–11.

Mid Day Meal Scheme
An Exploratory Study

Sandhya Sangai*

Abstract

This article is based on research conducted in thirty schools of Gurgaon district, Haryana in 2014. The objectives of the study was to understand the opinions of parents, children as well as teachers including head teachers of primary schools who have been a part of the scheme implementation over a long period of time. There have been a good number of research studies on different dimensions of the Mid Day Meal (MDM) scheme such as infrastructure, health and hygiene, teacher time on task, central kitchens, etc. However, it is also important to implement scheme at the grassroots level and provide a chance to the people who are directly affected by it to raise their voice and affect the implementation at the school level. It realised during the study that parents are aware of what is served in the MDM scheme and they also estimate the nutritive value of the MDM food. By talking to their own children and other children in the neighbourhood they understand what items are liked and what are not liked by children served under MDM. This paper would shed light on their perceptions on significant issues related to MDM implementation. It has been found through a number of research studies that school meal programme has a positive influence on enrolment and attendance. But the common perceptions regarding quality of food and effect of MDM on teaching-learning time needs to be explored at the micro level. Such micro level qualitative analysis can hint at crucial factors which, if considered, can add to the quality of implementation and better achievement of objectives of the scheme.

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Introduction

The National Programme of Nutritional Support to Primary Education (NPNSPE) popularly known as the Mid Day Meal scheme was launched by the Government of India as a centrally sponsored scheme on 15 August 1995. Under the scheme, free cooked meal is provided during all school days to all the children studying in government, local body and government-aided primary and upper primary schools. The programme was initially launched at the primary stage in 2,408 blocks in the country. By 1997–98, it was introduced in all blocks of the country and in 2002, it was further extended to cover children studying centres set up under Education Guarantee Scheme and Alternative and Innovative Education (EGS and AIE) Centres.

Until September 2004, central assistance under the scheme consisted of free supply of foodgrains. In September 2004, the scheme was revised to provide cooked mid day meal with 300 calories and 8–12 grams of protein to all children studying in Classes I–V in government and aided schools and EGS/ AIE centres. In July 2006, the scheme was further revised to raise assistance for cooking cost. In October 2007, the scheme was extended to cover children in upper primary classes (Classes VI to VIII) initially in 3,479 Educationally Backwards Blocks (EBBs). Around 1.7 crore upper primary children were included by this expansion of the scheme. From 2008–09, the programme covers all children studying in government, local body and government-aided primary and upper primary schools and the EGS/ AIE centres including *Madarsa* and *Maqtabs* supported under SSA. It is the largest school feeding programme in the country.

NP-NSPE, 2006 (*Revised Mid Day Meal Scheme*) seeks to address two of the most pressing problems for the majority of children in India, namely, hunger and education by:

(i) Improving the nutritional status of children in Classes I–VIII in government, local body and government aided schools and EGS and AIE centres.

(ii) Encouraging poor children, belonging to disadvantaged sections, to attend school more regularly and help them concentrate on classroom activities.

(iii) Providing nutritional support to children of primary and elementary stage in drought-affected areas during summer vacation.

The Study

The research study was undertaken in 30 schools of district Gurgaon of the Haryana state. The ISKON Food Relief Foundation, Gurgaon is providing cooked food to all the schools under the scheme. The implementation of MDM and the time of teacher on MDM activities may have significant

bearing on the teaching-learning processes and the time involved. Considering the fact that MDM has been universalised in all the States and Union Territories (UTs) from the year 2001, it was thought crucial to get a first hand feedback from primary stakeholders, *viz.*, teachers, children and their parents on the programme to understand the implementation of the scheme at the grassroots level. Keeping this in view, the study was planned and initiated in 30 primary schools of the Gurgaon district of Haryana from both rural and urban areas in both boys' and girls' primary schools. This study was conducted with the following objectives.

- To find out the impressions of the Mid Day Meal scheme on the minds of the young children who are the direct beneficiaries of the scheme.
- To find out the perceptions of the parents about the scheme and its management.
- To find out teachers' opinion about the strengths and weaknesses of the scheme.
- To suggest how the benefits of the scheme can be increased through better management.

Methodology

This study was a perception based qualitative study. It is descriptive and seeks answers to questions which are related to the functionaries and beneficiaries directly. The data was collected from three categories of the respondents — students, teachers and parents. Accordingly three tools were developed. In addition, one more questionnaire was developed for the District Elementary Education Officer who is the controlling officer at the district level for the implementation of the MDM scheme. A brief description of each tool is given below:

An *Interview Schedule* for children of Class V was developed. It contained questions related to taste and quality of the meals; regularity in the supply of meals, hygiene and cleanliness of the place where meal is served, nutritive value and wholesomeness of the food, involvement of parents and community members in the management of meals, vitamin supplements and health check-up, what changes children would like in the serving and other aspects of the food, etc. About five students were interviewed on individual basis from each school. The total sample comprised 143 students out of which 54 were boys and 89 were girls. There were total 13 items in this tool out of which 11 were with restricted answer supply and two were open-ended to allow children speak freely.

Guidelines for *Focus Group Discussion* (FGD) *with Parents* were also developed. There were about four to five members including female and male respondents in each FGD. The efforts were also made to include member of School Management Committee. The discussion points were developed taking into consideration various provisions of the scheme concerning

parents and community, e.g., parents are supposed to supervise mid day meal (MDM) serving, help teachers in organising MDM related activities, point out if food quality is not good or if food is not regularly served. The Focus Group Guide contained 12 points of discussion. The discussions were organised in a friendly and non-threatening way with prior consent of the participants. About 26 FGDs were conducted for the present study.

Questionnaire for the Teachers was designed to collect opinions of teachers as their role is crucial in the management of the MDM scheme. They have to balance their teaching time and at the same time they supervise MDM implementation. A questionnaire having both quantitative and qualitative questions was developed to collect perceptions of the teachers from the sampled schools. The teacher who is in-charge of MDM in the school was preferably the respondent for the tool. The number of respondents for this category was 58 teachers. There were 15 items in this tool out of which three questions were open-ended. The opinion of respondents on a four point scale was obtained on 13 statements having a mix of good and bad side of the scheme.

Questionnaire for the District Elementary Education Officer was developed to collect the factual information about the implementation of the scheme in the district. There were 13 questions in this tool exploring the information on the number of schools and beneficiaries, supplier of the cooked food, monitoring regarding quality and timely adequate supply of food, etc.

Besides data collected on these tools, personal observations of the researcher and data gathered through informal interactions with the community members have been utilised to substantiate opinions of respondents and findings of the study.

Findings

Perceptions of Students

There were 143 students from 30 schools. All of them were Class V students and out of 143 students, 54 were boys and 89 were girls. The value of chi-square was calculated to know if there is a difference in the opinion of boys and girls in taking MDM. Four groups were formulated for calculating the value of chi-square — "boys who take meals always", "boys who take meals sometimes", "girls who take meals always", "girls who take meals sometimes". There was no significant difference found between the perceptions of boys and girls. Both boys and girls take MDM either "always" or "sometimes".

The perceptions of children about the MDM scheme seem quite favourable. Majority of children (78.3) told that all students eat MDM. Most of them have indicated that they like to eat meals provided under the scheme and do not waste food. Regarding taste of the food, a high majority of

students, 99.3 per cent, expressed that the taste of food is good. When children were asked whether they came to school only because they get food, about 50 per cent of them disagreed with it while about 39 per cent children said "Yes". Children were asked to respond whether they get sufficient quality of meals under MDM scheme, 93.7 per cent of students gave a positive reply. The boys and girls also differed in their opinion regarding adequate quantity of MDM. There was a significant difference at 0.1 level.

Children do not feel that their time is wasted due to participation, serving and eating mid day meals. Therefore, it may be concluded that children consider it essential as part of the school learning experience. However, their readiness to offer suggestions also indicates that they wish their voice to be heard while deciding menu items and there should be some flexibility in the menu to accommodate their choice.

With the help of an open-ended question, children were asked to specify the role played by teachers while MDM is served, maximum number of students (55) indicated that teachers observe hygiene and discipline during MDM time, while about 40 responses indicated that their role is to distribute the food among children. Another important activity performed by teachers is observing hand-washing by children. Some other tasks of involvement of teachers, as perceived by students, are checking the utensils and tasting the food supplied by the centralised kitchen.

Perceptions of Teachers about MDM Scheme

The data to understand the perceptions of teachers regarding advantages and disadvantages of the MDM Scheme was collected with the help of Teachers' Questionnaire. In all, 57 teachers from 30 schools provided information on the items of the tool. Among 57 teachers, 22 teachers were male and 35 were female.

Teachers' responsibilities as perceived by teachers with regard to the implementation of the scheme are that each class teacher should ensure proper distribution and consumption of food by children of her class; hygiene and cleanliness should be observed throughout; children should be educated on the importance of hygiene and cleanliness; food under MDM should be tasted before serving the same to children ensuring that food is tasty, sufficient and nutritious for children. If these perceptions are analysed with respect to duties expected from the teachers under the MDM Scheme, there is no difference in the expectations under the scheme and perception of teachers regarding their duties for implementing the scheme. As informed by the teachers, the three major activities in which they are engaged are — supervision and observing discipline during distribution of MDM followed by supervising cleaning of kitchen,

dining area and utensils and hygiene of cooks and helpers and observing hand wash by children before and after food.

The study reveals that most of the teachers have appreciated MDM scheme. Regarding parents' satisfaction with the implementation of MDM, about 93 per cent teachers agreed that the parents were satisfied with the scheme; 98.3 per cent teachers agreed that the food served under MDM scheme is suitable to the health of children. About 86 per cent teachers expressed that the health status of children has improved because of MDM while about 14 per cent teachers disagree with this statement. Most of the teachers (93 per cent) responded that MDM promotes social equality by providing opportunities to children to informally interact and take care of each other while eating MDM. About 86 per cent teachers agreed that MDM scheme has helped in developing habits of cleanliness and hygiene among children. About 70 per cent teachers have expressed that attendance of children in schools has improved because of Mid Day Meal scheme, while about 30 per cent teachers have denied that MDM is a reason for children's better attendance in the school. They expressed that in fact, it depends on the location of schools and economic background of children. The teachers' opinion was divided on the issue that responsibility of MDM has further increased their workload. Those who feel that workload on teachers have increased due to MDM responsibilities outweigh those who do not agree with it.

The statements of teachers were evaluated on a four-point scale and aggregate values of their statements were calculated for male and female teachers. Both have shown a positive perception on the implementation of MDM scheme. The data was tabulated on the basis of the gender of the respondent teachers.

Focus Group Discussions

The research technique of focus group discussion (FGD) was used to obtain the opinion of parents including mothers and fathers and also local community persons who were helping in some way or the other in the implementation of the MDM scheme. In all, 24 FGDs were conducted and there were total 12 questions for discussion in the focus group guide. In all, there were 67 participants including 36 male and 31 female participants who gave their opinions on the implementation of the MDM scheme in district Gurgaon. The conclusions emerging from these FGDs were that the MDM does not cause any loss of teaching-learning time. The parents in one FGD suggested that children do not like sweet servings, instead they prefer salty preparations. So they should be provided food to their taste. In 9 out of 24 FGDs, parents and members of community agreed that there are some children who attend school for mid day meals. In one FGD, parents

told that school does not listen to the complaints regarding MDM while in one FGD parents revealed that school listens to the complaints but does not take any action on the complaints.

How Implementation of MDM can be Improved

In most of the FGDs, parents have suggested that the menu items should be changed from time to time because it would attract children. Children feel happier when they get a variety of food and new types of food items. Some other good suggestions were that the active participation by parents could help in better management of the scheme; some told that less time should be spent on distribution of MDM; instead of *roti, poori* should be served, more vegetables should be served; for proper dining, dining tables should be provided. Out of 24 FGDs, parents in 22 FGDs agreed that the scheme has brought awareness in children regarding cleanliness and hygiene.

Teachers also shared their opinion for better implementation of the scheme. The major suggestions which emerged from the analysis are that the food should be more nutritious and tasty, menu items should keep changing as per the suggestions by children, parents and teachers; the meals should reach school timely and distributed within the stipulated time and food should be as per the taste of children so that they feel happy while eating.

Advantages of the MDM Scheme

Most of the parents expressed that due to MDM scheme children get nutritious food items. Children do not suffer from hunger as food is received and served timely. All these advantages have contributed to advantages such as regularity in the attendance of children in schools, children are relatively healthier. Some of the parents expressed that MDM has also benefited the marginalised sections of society as they are employed as cooks and helpers in the schools.

Disadvantages of the MDM Scheme

Out of 24 FGDs, six groups expressed that there are as such no harms/ disadvantages due to MDM scheme. In other places, parents and other members felt that MDM causes distraction and there is a loss of teaching-learning time due to MDM. Some of them expressed that children fall sick if food served is not of good quality, children throw food if it is not tasty; lot of time is wasted if cooked food does not reach school in time. MDM also takes away teachers' time which ultimately affects the time they might have devoted to teaching children. Children also expressed that their suggestions should also be considered while preparing the menu. Teachers somehow feel that there should be some alternative arrangements that can be explored for managing the MDM as it takes time from teaching-learning. Many

parents also feel that studies are neglected due to MDM. Any scheme is successful if it is understood by its beneficiaries and they feel satisfied.

Conclusion

The major findings of the study are as follows:

- The Mid Day Meal scheme is appreciated largely by the beneficiaries and functionaries of the scheme. Most of the parents have expressed that children get nutritious food timely.
- Children and their parents have appreciated the scheme by informing that food served by ISKON Food Relief Foundation is fresh and tasty.
- Teachers, parents and children have also indicated that food supplied by the NGO helps to save the time of teachers and MDM food distribution and consumption does not take lot of time. The result is that there is no loss of teaching-learning time during school hours.
- There has not been any complaint of food poisoning, etc., in any of the schools in the district as informed by the office of District Elementary Education Officer, Gurgaon. This in a way reflects that quality of food is observed and maintained by the supplying agency.
- Teachers are performing the duties they are expected to do under the scheme. These activities are generally related to observing cleanliness, hygiene and hand washing by students before and after the meals. They also taste the food before it is served to children. Their presence actually ensures proper distribution of food and avoiding any wastage by throwing the food.
- Both teachers and parents have agreed that the MDM scheme has led to an improvement in the attendance of the children though both children and parents have informed that children do not attend school just to eat the meals served under the scheme.
- MDM scheme has also spread awareness about good health, hygiene and cleanliness. This is a life skill which will help children throughout their lives.

It can be fairly concluded, based on the discussions above, that the MDM programme has been conceived to minimise the problem of poverty and scarcity in matters of providing universal literacy and compulsory education up to the age group of 14 years. Further to it, it indirectly encourages mothers to relieve the girl child from the household chores to attend neighbourhood schools. However, MDM should not be taken as a filler of the empty stomachs but a means to provide wholesome food that would promote health, nutrition, sharing social equity and attention of the parents.

It is also necessary to include schemes like MDM in the training programmes for teachers, both in-service and pre-service training

programme, and help them learn how taking food together promotes spirit of children to learn and grow. It is interesting to recall Mahatma Gandhi who conceived the scheme of Basic Education and included food as an aspect around which curriculum could be correlated.

India is a country where examples of extreme poverty and extreme richness are seen. It is necessary to encourage voluntary organisations to share child welfare programmes like MDM and involving the young parents to share the labour involved in it.

References

Government of India. 2010. Programme Evaluation Organisation, Planning Commission. 2010. *Performance Evaluation of Cooked Mid Day Meal (CMDM)* New Delhi.

Krishan, Lal. 2013. Execution of National 'Mid Day Meal' Programme with Special Reference to Haryana — An Analysis. *American International Journal of Research in Humanities, Arts and Social Sciences*. Available at: http://www.iasir.net

Ministry of Human Resource Development, Department of School Education and Literacy. 2006. *National Programme of Nutritional Support to Primary Education, 2006 [Mid Day Meal Scheme]* – Guidelines.

NCERT. 2014. *Programme Evaluation of Mid Day Meal Scheme in the States of Uttarakhand*, Punjab and West Bengal — A Report (Mimeographed)

Pratichi Report. 2013. *Mid Day Meal Programme 2013*. Accessed from: http://pratichi.org/content/pratichi-report-mid-day-meal-programme-2013

A Case Study of Development of Socialisation through Social Constructivist Approach of Learning

A Vital Concern to Teacher Education

Biswajit Behera*

Abstract

A qualitative case study was carried out to investigate the social constructivist components of socialisation through small group learning of teacher trainees. What are the ways and how sharing with the social community takes place were understood during the learning situation through focused exploration using Focus Group and Field Note. A total of 15 components were analysed to infer how the teacher trainees learnt to socialise.

Introduction

Constructivism is considered to be an approach to facilitate learning. Under this approach, a congenial learning environment is created to make learning enjoyable to the learner. The learner is the main actor and she/he creates a meaning-making situation and constructs knowledge. It generates authentic process of learning in a composite way. Jonassen *et al.* (1999) asserted that learning is the process of interpretation of the reality. The learner constructs knowledge when she/he interacts with the environment with her/his

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own activities. Therefore, learning is the learner's construction of his own reality in his mind related to an event. The learner's interaction with the social environment is the main concern towards meaning-making.

Constructivism and Knowledge Construction

Social constructivism suggests that knowledge is constructed by learners as a result of their own activities and interaction with the environment. Learning is the learner's construction of knowledge through the process of interpretation of the reality. The notion of learning as passively responding to the environment and directly internalising knowledge given by others is rejected by constructivists. Therefore, our education system must avoid treating the learner as a passive recipient of important information; instead the learner must become a potential participant in his own learning. Thus constructivism emphasises how the learner constructs knowledge. It suggests that —

1. Knowledge exists beforehand in the mind of an individual.
2. Knowledge is constructed from inter-relationship with the world.
3. Knowledge construction is sharing.
4. Knowledge is constructed through action.
5. Meaning-making depends on knowledge.

Teacher Education and Constructivism

Teacher education has direct bearings to implement the constructivism approach in school scenario. Keeping in view of the purpose and practice of teacher education, NCF 2005 has suggested certain reformations:

a. Teachers need to be prepared to care for learners, develop sensitivity to the problems of the learners.
b. Teachers need to view learners as active participants in their own learning in order to construct knowledge.
c. Teachers need to organise learner-centred, activity-based and collaborative learning experiences through projects, discussion, dialogue and observations.
d. Teachers should have "reflective practice" of their teaching.
e. Teachers need to appreciate the potential of hands-on experience as pedagogy strategy both inside and outside the classroom.

Social constructivist pedagogy recommends small group learning. What are the ways and how sharing with the social community takes place are interesting to understand through small group learning. For this purpose, a case study was carried out to investigate the group phenomenon. Through the case study, researcher expected to gain in-depth understanding of learning situation and meaning for the teacher trainees who were involved.

Research Questions

The study was based on the following questions.

1. How do teacher trainees use the social constructivist components of socialisation during group learning?
2. How does socialisation occur to create learning environment?

Methodology

An attempt has been made to search answers to research questions through qualitative case study. Small group learning was designed to elicit social behaviours of teacher trainees. The case study was done in the following three phases.

Phase I: Maintaining researcher's diary through participant observation.

Phase II: Focused exploration using:

- Focus group
- Field note

Phase III: Communicating the result.

Sample

Ten teacher trainees of Science and Mathematics method group of Dr H.R. Gajwani College of Education Kutch, Gujarat of the sample study.

Analysis and Interpretation

In order to ascertain the socialised behaviours, a group of teacher trainees were engaged in the solution of a real-life problem. The problem-scenario was based on "Green House Effect". The learning of group of teacher trainees was activated through social interactions. Teacher trainees' behaviour with one another in finding possible solutions led them to be sociable. The analysis and interpretation of process of socialisation was carried out through following components.

How did teacher trainees learn to socialise?

A total of 15 components are discussed below to elicit answers pertaining to this question.

Component 1: Teacher trainees became aware of 'Self'.

One sample of evidence collected through field note is cited below.

Evidence

The teacher trainees looked at one another as they saw the hard copy of problem scenario. It was something to explain Green House Effect to disagree to population growth and might be to find problems due to pollution!

Jalpa raised the question asking the meaning of "thermostat" and then started conflicting herself by saying that "due to rise in temperature, it causes a change in carbon number, it is always flexible. Carbon dioxide is produced...".

Mridula was slow and comfortable to speak her guessing about the carbon number.

At that time, *Deepti* was silently looking at *Mridula,* putting the palm under her cheek.

Neelam was disagreeing to the points of *Jalpa.* She thought in a different way and requested to repeat in order to understand better.

Saket answered to *Neelam* explaining "how it occurs". He showed the information to the group.

Mamata asked pin-pointedly to search for the meaning of carbon number.

Through such conversation, *Mridula* took up the responsibility to make loud reading of the statement of problem scenario.

Observation 1

The fact that there was a time when a teacher trainee could not understand that others had feelings like his/her own. All were asking questions to one another. All were looking for answering. As a matter of fact, the teacher trainees could not understand even for a minute that they themselves were separate individual people, capable of independent feeling and action. The awareness about self, of being somebody came gradually.

At the first instance, one teacher trainee was not known by other trainees in relation to their backgrounds. They were all aware of their resemblance about their background in relation to their B.Ed course which was quite natural. It was however, in due course of group learning process, the future relation with one another was developed. It was the base how the group learning facilitated towards one to one relation among teacher trainees.

Component 2: The trainees were different from one another.

Observation 2

Analysis of group interaction revealed that initially all teacher trainees were comfortable in mixing with each other, presentable and well-mannered. They were quite graceful in exhibiting their behaviour in front of their colleagues. However, there were two teacher trainees whose behaviour indicated some deviance in their group behaviour. Thus, differences between one and another were marked in the group learning.

The reactions to one another with regard to number of things were well-behaved and humble. All members except one were not participating. She was isolated. However, irritation towards other teacher trainee was not seen. Successful interpersonal adjustment was lacking within her.

Component 3: How did one do and what did she/he do?

Observation 3

As one teacher trainee approached another she/he might be casual, relaxed and at ease. She might be friendly or hostile, confident or afraid. She/he may have the right words or still be relying on body movements. The quality of one's approach to another was seen by the quality of his/her voice, the rhythm, fluency and tempo of his/her speech, facial expression and gestures and postures. These were all in one integrated response. Therefore, it was more important to see when teacher trainees did something and working out their social relations during exploring the learning materials.

Component 3.1: Body position and movement

Observation 3.1

Body expression is a part of personality expression. A person's body is herself/himself. She/he uses it, as she/he feels. The tilt of the head, the use of the hands, body stances, amount of body activity, even body contacts all were means of communicating. Trust and fear, confidence and inadequacy all found expression in body posture. So, the body movement gave an indication about some sort of social behaviour. It was found the situation was stimulating for good articulation.

Component 3.2: Facial expression.

This was related to communication. This accompanied 'quality' in speech.

Observation 3.2

One was intelligently communicating her ideas to others within the group. Another was taking approval of others and hence, it was communicating the issues clearly. Some of the members agreed upon those written points as it was understood from their non-verbal gesture and posture during listening to other's points. Therefore, face -to-face eye contact, feelings while explaining, thrilling expression in the voice and modulations with ease were the ways of communication.

Component 3.3: What did the teacher trainee say? And how did the others respond?

Speech did not reveal everything. But, it talked a good deal. The actual dialogue and conversation between the teacher trainees could describe the response and their behaviour patterns in group setting.

Observation 3.3

Dialogue was quoted during group conversation. This approached a part of relationship. It was an act of social behaviour of teacher trainees. What did the other trainee do and say? Such record illustrated how behaviour was affected by other trainees' responses.

Component 3.4: What happened next in the relationship?

Approaching each other was a meaningful relationship. After it was made, then what did the teacher trainees do? Did the trainee carry on the conversation? Whether the content/approach blossomed into a new and additional consideration? To what extent it worked out the problems both of intellectual comprehension and of emotional complexity? The characteristic way in which one member was likely to respond with other members emerged the pattern of behaviour.

Observation 3.4

It was found as a way of exploration of friendship. One to one approach developed interpersonal relationship between one and another. While providing important material one was approaching another. This was a part of relationship. This developed scientific outlook among members. After that, the other trainee's response determined further action. It revealed orderliness among the teacher trainees.

Component 3.5: Emotional association.

A teacher trainee in the group played the role in relation to his/her feeling and attitude towards others.

Observation 3.5

One tried to clear the doubts through explanation and then further by using internet materials. It was motivation to approach each other while they were clarifying the doubts. Thus, the way of behaving was consistent in the group learning. It was seen that attitude changed their role in different contexts. The evidence demonstrated certain behaviours like carefulness, curiosity, conflicting own self through brainstorming among the teacher trainees.

Component 3.6: Pattern of behaviour. The characteristic way in which the trainees responded in their relations with other trainee emerged a pattern of behaviour. The changing pattern of behaviour towards socialisation indicated the success of group learning. The pattern of social behaviours was organised by clustering the items around such categories as following:

Component 3.6.1: Evidence of interest among teacher trainees.

Direct evidence was the number of trainees approached with each other or positive approaches in between the trainees. Looking to one, listening to others, imitating and recording the points were the indirect evidences of interest shown within teacher trainees.

Component 3.6.2: How were contacts made?

Observation 3.6.2

The way the teacher trainees moved towards others (initially or always) and how one's moves were studied. The movement was both appealing to some trainees and sometimes uncertain and unassuming. The trainees responded to the behaviour of others through appreciating their ideas and giving suggestions with consent of others. The trainees were questioning and excited to discuss different components of problem scenario. They were interested to collect data to find out possible solutions. There was interaction through talk, conversation, dialogue and demonstration of ideas. The correspondence was also made when one was calling to seek information through internet search. In this way, the contacts among one and all were made.

Component 3.6.3: How did one behave with other teacher trainees?

Observation 3.6.3

In order to understand one, the recording of one's behaviour was analysed to know to what extent one was aware of other's right. To what extent one was able to help others? Did one contribute ideas and suggestions? And to what extent? How was one able to share materials? What was the general tone at group work? It was found that one's suggestion was consistent with other trainee's ideas. Hence, it was accepted by all. Thus, one's wishes, desires and annoyances, etc., were understood during group learning.

Component 3.6.4: What seemed to be one's feelings about other trainees?

Observation 3.6.4

The feelings of likes and dislikes were the nature of inter-relationship. Even the paired work was demonstrated, which was a kind of special friendship. One was inclined to others to discuss unanswered questions and made clarification in an amicable way. The approach towards each other developed their inter-relationship.

Component 3.6.5: What position did one take in relation to others?

Observation 3.6.5

The seating arrangement of teacher trainees was circular. But none of the trainee's position was fixed. However, the pair of trainees in relation to certain personality or interpersonal relationship was understood from their positions. Most of the times, in the group trainees' positions were maintained in pair.

Component 3.6.6: Evidence of growth.

Observation 3.6.6

Comparing the first day and later days' behaviour of teacher trainees, their performance became matured. Summing up the generalisations in the light of the pattern of emerged behaviours, the study brought into focus an image of how group learning was effective in the solution of real-life problems to develop social behaviours. Thus, it was understood that socialisation took place in the group learning. Some of the patterns of behaviours exhibited by the participants during socialisation are given next.

Discussion and Conclusion

The study resulted that the teacher trainees demonstrated social behaviours over the period of group learning. The teacher trainees worked in a small group situation. They learnt how to socialise. The group members provided assistance to each other such as explanations and other types of helping responses. At times, in a group, teacher trainees provided more help to each other such as providing directions and directions with prompts like 'that is right', 'okay', 'see the level of picture', etc. These were approaching behaviour with others. These were proved soliciting behaviour as a part of their socially oriented behaviours. Verbal as well as non-verbal behaviours were seen among teacher trainees. The teacher trainees were more verbally communicative in small groups. It was such involvement with each other about the task that encouraged teacher trainees to ask questions, provide explanations, clarify the points and participate in discussions. Through this engagement the teacher trainees learnt to plan how to proceed with their work and communicate their new ideas to their mates. In effect, as Vygotsky (1978) observed that they used language as medium to relate each other, to facilitate others to learn, to scaffold each other's language. So, it became their own and it developed "ownership of their learning".

Teacher trainees' skill in communication, particularly non-verbal communication, during

interaction, discussion and dialogue was nurtured. The gesture, posture and body movements symbolised their communication during discourse. These were part of their socialisation. Along with verbal, face-to-face communication, non-verbal behaviours were focused to ascertain social behaviours, because the verbal and non-verbal communications were concurrently focused in their discourse. These were individual's social skill in receiving and interpreting non-verbal communication of others which engaged them in a social discourse (Behera, 2014).

The socially desirable behaviours like greater involvement with others, showing interest in others, approaching others, sharing his/her work and taking care of others promoted a healthy community. It enabled the proper functioning of learning environment. Hence, group learning was effective to evolve a congenial learning environment and overall to create a community environment to enable improved learning. Then interpersonal skills were generated within the community. So, interpersonal relations were characterised by showing interest in others, tolerating, taking care of others and accepting others (Behera, 2014). The teacher trainees solved problems through sharing of knowledge, collaboration and socialisation. Thus, group learning explored the social constructivist components. Hence, it should be recognised that Vygotsky's social constructivist approach of learning premises to develop social behaviours leads to socialisation.

Implications

The following implications may be useful for classroom learning —

1. Small group learning should be the focus of the learning situation.
2. Hands-on and heads-on learning activities should be incorporated in the learning process.
3. Active interaction through social relationship should be facilitated to create constructivist learning environment.
4. Programmes of teacher education should include learner-centred, activity-based experiences through dialogue, discussion and collaboration.

References

Behera, B. 2014. A Study of Construction of Social Skills among Pre Service Teacher Trainees through Vygotsky's Approach of Learning. Unpublished thesis submitted to MSU, Vadodara.

Denzin, N.K. and Y.S. Licoln. (Eds.) 1994. *Handbook of Qualitative Research.* New Delhi: Sage Publications.

Jonassen, D., K.L. Peek, and B.G. Wilson. 1999. *Learning with Technology: A Constructivist Perspective.* New Jersey: Prentice Hall.

NCERT, 2005. *National Curriculum Framework*, New Delhi.

Vygotsky, L.S. 1978 as quoted by A. Kozulin. (Eds.) 2004. *Vygotsky's Educational Theory in Cultural Context.* Cambridge University Press.

Book Reviews

Effective Instructional Strategies
From Theory to Practice

Author: Kenneth D. Moore
Publisher: SAGE Publications, USA
Year: 2012
Pages: 444, **Price**: US $ 95.99

The third edition of the book titled *Effective Instructional Strategies — From Theory to Practice* by K.D. Moore is a beautifully compiled record of all that a "naïve teacher-to-be" needs to know before becoming a seasoned one through practice and experience. It can be considered as "The Journal of Orientation" towards the nuances of teaching for a trainee so that he or she can have a glance of what actually teaching is in its true sense, all bound in one book.

It prepares an individual for the complex world of the school classroom, which is ever-changing based on its occupants, i.e., the students.

As the name suggests, *Theory to Practice Approach to Instruction*, the book offers a platform for the teacher trainees to analyse their learning and put it into effective practice whenever possible and hence improve their styles and techniques of classroom teaching.

The book is divided into *four parts,* each emphasising on different aspects of teaching, beginning from setting the stage for successful learning and concluding at ideas for maximising students' learning.

Part I titled "Setting the Stage for Successful Learning" has two chapters. The first one "Getting ready for the classroom" is theoretical in nature and talks of the historical and contemporary aspects of teaching-learning process with greater emphasis on constructivism as a skill for reflective teaching. In addition, it signifies the importance of teacher

accountability and certification to ensure quality assurance in the field of teaching-learning.

The second chapter talks of diversity amongst students based on the mixed cultural composition of the classrooms of this century. It is the description of the modern classrooms in which apart from the academic transaction, the teacher needs to understand the emotional and cultural differences of the students and the expectations they have from their teachers. The diversity addressed here is comprehensive in all respects be it linguistic, physical, societal, intellectual, cognitive or cultural. It suggests various forms of assistive technologies and communication pattern to address the sensitivity of the multicultural society that we live in today.

Part II titled "Organising the Dynamic Classroom" is subdivided into three chapters.

The first one is "Engaging and Motivating Learning", which focuses on the importance of right communication with all the four components of listening, speaking, reading and writing being a significant part of it. It explains the role verbal and non-verbal communication play in a student's life and how a word of motivation shapes the future of his/her students.

It gives a new dimension to how a gesture or word from the teacher can impact the student. The various aspects of communication like verbal, non-verbal, vocal, facial, body language, metaverbal component with respect of space, environment, time and teacher movement have been explicitly described to make the trainee aware of each of it while teaching. A special description of the art and styles of listening has been included hence, leaving no stone unturned to ensure that the teacher becomes a good listener. The classroom motivation techniques are centred on reinforcement, developing healthy and democratic environment, self-modeling of values and behaviour desired from students and contingency contracts with students, so that they themselves reach an agreement with the teacher on how to earn the desired awards and privileges.

The second chapter is on using classroom technology and explains how to integrate computers and technology into instructions. The chapter lists the various school technology functions and the latest hardware and software available for classroom teaching. Issues like social networking, podcasting, blogging, tagging, RSS, cyber-bullying, sexting, social bookmarking are explained overtly.

The last chapter of this part is named "Managing the Classroom Environment". It deals with the management problems a teacher can face with respect to the classroom environment. Conducting the classroom environment effectively in order to achieve her goals and objectives of teaching is mandatory

and hence, this chapter equips the teacher to handle the same efficiently. The content of the chapter helps the teacher question her strengths and weaknesses as a leader and manager of learning. It emphasises on the role and need of classroom management, leadership and explains in details the various approaches to attain it like the self-discipline approach, reality therapy, the desist approach, etc.

Part III titled "Sequencing and Organising Instruction" forms the major part of the book and deals with establishing instructional intent and planning instruction. The chapters under this part are four in total in which the first one is on planning and organising instruction. This chapter investigates how effectively educators decide what to teach within the parameters of the established school curriculum. The primary purpose of schooling is to equip students with the knowledge and skills so that they become productive and cordial citizens of a nation, hence, the curriculum framed and the instructions provided should be well planned and judiciously organised.

The concepts of curriculum mapping, diagnosing the needs of the students and planning the course; instructions and evaluation pattern are the central ideas of this chapter. The framing of correct objectives and communication of the intent through them is also given significance in the chapter. Hence, this chapter is an intellectually written piece of information which provides a comprehensive coverage of school curriculum, setting goals, writing objectives and the backward design approach to identifying instructional intent.

The next chapter which is the second part of this and the seventh for the book is aimed at developing units and daily lesson plans for effective planning of lessons for day-to-day teaching. This chapter focuses on the question "Why do teachers plan?", and probes deeper into the techniques used for effective planning. The chapter highlights the structure of lesson plans with emphasis on all the micro skills of teaching.

The eighth chapter in the book which forms the next one for this part of the book talks about evaluating and measuring learning. It distinguishes between the concepts of assessment, evaluation and measurement by highlighting the purpose of each in teaching-learning. The differences established between the various parameters of measurement accuracy like reliability, validity and usability of a measurement device are simple, easy to comprehend and remove the fears in the mind of an evaluator.

The ninth chapter of the book deals with constructing and grading tests which is the most important aspect of evaluating students' progress. This chapter focuses on different types of tests like standardised tests, teacher-made tests, alternative choice items, multiple choice items, matching,

completion, essay, authentic assessment, quizzes and homework. It also highlights how standardised tests are produced, how to write test items and design tests. In the end, it elicits the procedure for teacher record-keeping and highlights how to reduce the burden of record-keeping by using computer technology for teaching.

Part IV, the final section of the book is on "Designing Instruction to Maximise Student Learning". It consists of four chapters which collectively focus on using direct, authentic and integrated teaching methods for instructional delivery. It includes a significant chapter on skills, importance of critical thinking and development of creative thinking as part of the school curriculum.

Chapter ten "Using Direct Teaching Methods", deals with direct teaching methods and approaches of teaching, so that students can gain fruitful instructions. It is very important for the teachers to choose effective and meaningful techniques and strategies which include students' need, age of students, students' intellectual abilities, their physical and mental characteristics, and students' span of attention, the lesson purpose and the content to be taught for making teaching effective and must keep students involved in the lesson. It also elaborates different modes of instruction like direct teaching, exposition teaching and exposition with interaction teaching. Under exposition teaching, lecture method has been emphasised with tips on how teachers can plan an effective lecture and identify appropriate time to use lecture method. Further, the chapter highlights the art of questioning, level of questions, types of questions and questioning techniques. The strength and limitations of various teaching strategies and methods and also the ways to improve lectures and presentations are the focus of this chapter.

Chapter eleven titled "Using Authentic Teaching Methods" focuses on various instructional methods to promote students learning through critical thinking, problem-solving, learning by doing, whole class discussion, small group discussions, brainstorming and inquiry learning. All these methods help the child to learn better by involving or engaging in meaningful and constructive activities.

The teacher acts as a facilitator and researcher and should assume the role of leader or advisor. This aspect is focused in the next chapter of the book titled as "Using Integrated Teaching Methods". The whole essence of the chapter lays in the fact that "in doing we learn"; hence, it talks of demonstration method, concept attainment, cooperative learning and integrating technology, games and simulations in the classroom situations.

The last chapter of the book deals with teaching effective thinking strategies. As thinking is the fundamental constituent of a

person's personality and output, it becomes necessary for the teacher to help her students to think critically and creatively. So this concluding chapter of the book centers on the aspect of imbibing reflective thinking skills amongst students through activities. Thinking skills include brainstorming, which is an excellent way of promoting fluent thinking, flexible thinking, inductive thinking, logical thinking, inference making, problem-solving, decision-making, and observation. So the role of the teacher here is to create a classroom environment in such a manner that students should indulge in out-of-box thinking model.

Hence, this book is an excellent reference not only for trainee teachers but for teacher educators as well. Each chapter of the book is meticulously organised into objectives and overview of the topic and concludes with a summary, discussion questions, activities, technological connection, connection with the field, list of online resources and student study sites for the specific chapter.

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Early Childhood Education
Teachers' Perspectives, Effective Programs and Impacts on Cognitive Development

Edited by: Kristina Vann
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Early childhood education is the basic foundation and strong means to success in school as well as in higher studies. It is an indispensable part of the overall development of the children. It provides a challenging environment to learn among school children. Positive interactions begin with the fellows under the guidance of teachers. In fact, the modern education systems around the world have effective systems, however,

updates for more new patterns, effective teaching practices of teachers and widespread programmes are necessary in order to enable and increase the skills of early childhood.

The book titled *Early Childhood Education: Teachers' Perspectives, Effective Programs and Impacts on Cognitive Development* is a notable scholarship on self-regulated learning related to cognitive education, the metacognition and student-centred teaching patterns in order to conceptualise existing educational system in early childhood. The book also elaborates about early childhood. The events and activities during early childhood period make influences in the life of the children. It introduces and provides new ideas and perspectives of education which will remain a crucial part of their school life even upto the higher education.

The editor, Kristina Vann of the book has collected well-defined research work on early childhood education in this volume. She sheds light on teachers' perspectives, effective programmes and impacts on cognitive development from the experiences of existing educational system. The book is comprehensive and is based on empirical research work.

Six chapters, plus preface, have been organised in this edited book. In the first chapter, the authors begin by describing the importance of social emotional learning (SEL) and cognitive abilities as foundation of academic success in early childhood stage. This chapter as an introduction articulates and assesses the positive inter-relationship among SEL and cognitive abilities and academic achievements in early childhood. Two preschool SEL programmes are described in the chapter. Some teaching strategies which support SEL in preschool are also presented.

In the second chapter, the authors explored how cognitive skills and metacognitive self-regulated learning strategies are important in order to identify students' level of cognitive abilities to intervene through teaching process, to solve the existing problems. The case studies of total 68 pupils at the age of five have been analysed by the authors in this chapter. The objective of the study was to assess the use of metacognitive, cognitive and motor strategies on a given task. The study has been carried out with an ad-hoc instrument-based think-aloud technique, and having adequate reliability and validity values for assessment (p.18).

The chapter titled as "Teaching and Learning in Natural Environments" points out findings of 18 months' research study conducted on young children and early childhood teachers involved in out-of-centre nature adventure programmes. It further explains how the social learning and natural environments come up to build the knowledge of children. Finally, it concludes by suggesting the strategies for centre and teachers

interested in developing out-of-centre nature experiences for children. The author suggests that nature adventure programmes should be an integral part of the curriculum of all early childhood education settings.

Subsequently, the chapter four titled as "The Shift from Factual Teaching to Conceptual Understanding in Early Childhood Education: Challenges in Lesson Planning" elaborates the importance of conceptual understanding in early childhood education. The author pointed out that conceptual framework helps students to focus and make connections with important ideas of content. The author elaborates that shifting from factual teaching to conceptual teaching is a time-consuming and challenging task.

Importance of metacognition in early childhood has been discussed in chapter five. It further elaborates that the basic metacognitive skills may be effectively developed among preschoolers through participation in physical activities and sports. Recommending students-centred teaching styles at this stage, the author is of the view that these styles help young children to reflect on their own learning.

In the last chapter titled "Reciprocal Teaching Style and Metacognition in Early Childhood", the authors observed the effectiveness of reciprocal teaching style for the promotion of metacognition during early childhood stage. The authors have taken a case study and analysed 38 students at the age of seven years. It revealed that the reciprocal teaching style is an effective method to enhance metacognition among children in early childhood years.

The book presents a well-defined research-based synoptic view of early childhood education with special reference to the role of teachers in designing early childhood education programmes. This would be of immense help to the teachers, teacher educators and students to plan and organise early childhood education with a child-friendly perspective.

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Eligibility Criteria

Full-time Programmes

(a) A candidate seeking admission to the M.Phil. and Ph.D. programmes shall have a minimum of 55% marks (50% marks for SC/ST candidates and Persons with Disabilities) or its equivalent grade in Master's Degree in social sciences and allied disciplines from a recognized university. Candidates possessing Master's degree in other areas may also be considered if he/she has teaching experience or experience of working in the area of educational policy, planning and administration. (b) A candidate seeking admission to Ph.D. programme shall have an M.Phil. degree in an area closely related to educational planning and administration and/ or exceptionally brilliant academic record coupled with publications of high quality. (c) M.Phil. graduates of NUEPA will be eligible for admission to the Ph.D. Programme after due scrutiny by a Selection/Admission Committee, if they obtain a FGPA of 6 or above on the ten point scale.

Part-time Programme

A candidate seeking admission to Part-time Ph.D. programme is required to meet the following criteria: (i) Should possess the educational qualifications as mentioned in Para (a) above; (ii) Currently, should be in full-time employment; (iii) Should be a senior level educational functionary with a minimum of five years work experience in teaching/research in educational policy, planning and administration.

It will be compulsory to attend one-year full-time course work by all part-time and full time candidates.

Mode of Selection

NUEPA will follow all mandatory provisions in the reservation policy of the Government of India. Admissions to M.Phil., Ph.D. and Part-time Ph.D. programmes will be made purely on the basis of merit following the prescribed criteria of the University.

The University reserves the right to decide the number of seats to be filled in the year 2017–18; the criteria for screening of applications; and the selection procedure of candidates for admission to its M.Phil. and Ph.D. programmes. The mode of selection of candidates will be as under:

Initial short-listing of applications will be carried out on the basis of relevance and quality of the brief write-up (in the prescribed format) in the proposed area of research to be submitted along with the application form. Short-listed candidates will be required to appear for a written test and those qualifying in written test will be subjected to personal interviews to assess their motivation and potential leading to final short-listing and preparation of panel of selected candidates, in order of merit.

Candidates must be possessing the eligibility qualification and submit marks statement at the time of written test on 01st July 2017.

How to Apply

Candidates may apply in the prescribed form for admission to M.Phil. and Ph.D. programmes of the University along with three copies of the brief write-up (in the prescribed format) on the proposed research topic of a contemporary issue within the broad framework of educational policy, planning and administration. For further details, please refer to the M.Phil. Ph.D. Prospectus, 2017–18 of the University.

The application form and the Prospectus can be obtained from NUEPA by remitting a sum of Rs.200/- (Rs.100/- for SC/ST candidates) by demand draft in favour of Registrar, NUEPA, payable at New Delhi if required by Post or purchased in person. The prospectus can also be downloaded from our website: www.nuepa.org by making online payment of Rs.200/- (Rs.100/- for SC/ST candidates) and attach the receipt/confirmation slip with the application at the time of submission to NUEPA.

Last Date of Applications

Application should reach the Registrar, NUEPA, 17-B, Sri Aurobindo Marg, New Delhi-110016 on or before **26th May 2017**. For further details, please visit our website **www.nuepa.org**

— Registrar

About the Journal

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