ICT@Schools Project and its Implications on Government Schools Students of Bihar

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ABSTRACT

Information and Communication technology has been the latest buzz in modern educational setup. The enormous benefit of using computers in teaching and learning is all known to us. It is the potential of it thus which has resulted in the framing of Policy on Information and Communication Technology in School Education by the Department of School Education and Literacy under MHRD. ICT@School scheme is one such policy of Government of India to provide ICT facilitated teaching learning support to government schools in India. Bihar has been also a part of this scheme and this scheme has been implemented in more than 1300 schools of Bihar in the span of 10 to 12 years. This paper reports on the findings of the status of implementation of this scheme basically on the students. The data has been collected from 1551 students from 87 schools of selected districts of Bihar where this scheme was implemented. The findings revealed very poor conditions of ICT Lab in terms of its availability for the students. The boys and girls of these schools have equal perception and pattern of using ICT with respect to different indicators on ICT usage. The students seldom gets chance to use ICT Lab due to the factors such as unavailability of computer teachers, dysfunctional computers and accessories, lack of internet connection and theft or lost equipments.

Keywords: ICT@School, Computer Education in Bihar, Secondary Education, ICT

The United Nations' Millennium Development Goals (MDGs) has stressed upon the technology based education for the learners of 21st century. The National Policy on Education 1986, as modified in 1992, stressed the need to employ educational technology to improve the quality of education. The policy statement led to two major centrally sponsored schemes, namely, Educational Technology (ET) and Computer Literacy and Studies in Schools (CLASS) paving the way for a more comprehensive centrally sponsored scheme – Information and Communication Technology @ Schools in 2004. Educational technology also found a significant place in another scheme on upgradation of science education. The significant role ICT can play in school education has also been highlighted in the National Curriculum Framework (NCF) 2005.

Use of ICT for quality improvement also figures in Government of India's flagship programme on education, Sarva Shiksha Abhiyan (SSA) and Rastriya Madhyamik Siksha Abhiyan (RMSA). Again, ICT has figured comprehensively in the norm of schooling recommended by the Central Advisory Board of Education (CABE), in its report on Universal Secondary Education, in 2005. With the convergence of technologies, it has become imperative to take a comprehensive look at all possible information and communication technologies for improving school education in the country. The comprehensive choice of ICT for holistic development of education can be built only on a sound policy. The initiative of ICT Policy in School Education is inspired by the tremendous potential of ICT for enhancing outreach and improving quality of education. This policy endeavours to provide guidelines to assist the States in optimizing the use of ICT in school education within a national policy framework.

The scheme of Educational Technology (ET) was

started in 1972 during the IV Plan. Under the scheme 100% assistance was given to 6 State Institutes of Educational Technology (SIET) and the States/UTs were assisted for procurement of radio cum cassette players and colour TVs. Further, in recognition of the importance of role of ICT in education, the Computer Literacy and Studies in Schools (CLASS) Project was introduced as a pilot project in 1984-85 with the use of BBC micros. The project was adopted as a Centrally Sponsored Scheme during the 8th Plan (1993-98) and its scope was widened to provide financial grants to educational institutions and also to cover new Government and Government aided secondary and higher secondary schools.

The revised Scheme of Information and Communication Technology (ICT) @ Schools was introduced by the Govt. of India in 2009. The scheme provided 10 computers, scanners, printers, educational software, etc. to introduce and promote computer literacy across schools in different states of the country. The reason for introducing the scheme was to address the huge disparity in India in Information Technology (IT). The ICT scheme therefore proposed to open new vistas of learning and bridge the socioeconomic and geographic divide across the country with respect to Information Technology and provide a level playing field to rural as well as metropolitan students.

Gurumurthy's (2009) study based on policy reviews, theoretical explorations and empirical evidence of delivery systems of CAL in Kerala and Karnataka points out that the digital medium has the capacity to allow local knowledge construction and also supports all the modes (text, audio, video). Hence its potential for revolutionizing teaching learning needs to be explored. However this exploration needs to be firmly grounded in both educational aims/philosophies as well as educational contexts and anchored by educationists to be successful.

Wong and Alan (2007) conducted a study among Malaysian student teachers to assess the "Gender differences in attitude towards information technology". Results were found that gender does not have an impact on the attitudes of female nor male student teachers towards information technology when the same amount of exposure is given to both groups. There was also a significant difference is the aversion and usefulness dimensions for both genders at the end of course, an indication that the course played a role towards improving the attitudinal measurement in these two dimensions.

Bihar is yet to embark upon major ICT initiatives in School Education. There have been some ICT initiatives that are implemented across the department to address some of the pressing problems. Government of Bihar has taken an initiative in the implementation of Computer Aided Learning (CAL) in school and has been recognised for these efforts through the Manthan South Asia award for e-governance for the year 2010 under the e-education category for its project "Implementation of computer aided learning in 244 schools in Bihar under the BEP-India". ICT@School scheme is one major initiative of integrating ICT facilitated teaching learning scenario in the government schools of Bihar.

Twelve years, six private agencies, more than 1300 schools, over ₹ 1,000-crore project has been passed towards 'ICT@schools' scheme, meant for government-aided secondary and senior secondary schools with the aim of bridging the digital divide in Bihar the only thing missing is the result. One of the major objectives of this scheme concerning students benefit has been for enabling students to acquire skills needed for digital world, for higher studies and gainful employment.

The years have passed since this project has been launched but no one or very few bothered to monitor and investigate the progress and the fulfilment of the objectives of ICT@schools as was framed under National Policy on Information and Communication Technology (ICT) In School Education, 2004, especially in Bihar. This study has tried to bring out one aspect of its implication on the students of Bihar Government schools. This study will provide inputs to the education component of ICT policy and school education policy of Government of Bihar on possible ways to create and improve the learning environment in schools in Bihar. The topic of the study is thus framed as-

ICT@SCHOOLS PROJECT AND ITS IMPLICATIONS ON GOVERNMENT SCHOOLS STUDENTS OF BIHAR

Objectives of the Study

The objectives of this study were as follows:

❐ To study the status of pattern of use of ICT

among secondary government schools students with respect to different indicators of ICT usage.

❒ To study the significant difference between boy and girl students with respect to different indicators of ICT usage across different schools from selected districts of Bihar where ICT@Schools scheme has been in practice.

Methodology of the Study

This research was basically a descriptive survey. Researcher used questionnaire for collecting information from the students of schools where ICT@Schools scheme has been in practice.

Sample of the Study

The samples of the study were 1551 students of 87 schools selected purposively from eight selected districts of Bihar where ICT@Schools scheme has been in practice. The detailed distribution of data were as follows.

Table 1: Distribution of Sample

Sl. No.	District	Number of Schools	Students = 1551	
			Boys	Girls
01	Rohtas	18	201	136
02	Patna	24	195	220
03	Saran	4	38	40
04	Bhojpur	19	190	130
05	Kaimur	11	98	105
06	Vaishali	4	40	36
07	Supaul	4	35	34
08	Samastipur	3	25	28
	Total	87	822	729

Tools

In the present study, the survey questionnaire was prepared based on literature review, field experience and experts advice. It consisted of 8 questions and its subsections. They were basically of 'YES', 'NO' type and some were of open response type.

Procedure of Data Collection

After the development of the tools and its validation by the experts they were printed for administration in the school. The researcher himself tried to visit the schools spread in different districts. However, where researcher's personal visit was not possible he contacted teachers of the schools and sent them the set of questionnaire with details of procedure

of administration and requested them to do the needful. The stakeholders/students on which it has been administered were provided with instructions on how to fill their responses. Sufficient time was provided so that they can comfortably fill the details sought of in the questionnaire. It was collected back once students' responses were entered in the questionnaire. The questions sent by the post also were obtained back using the postal services. Due to time constraint, reluctance of the stakeholders and other factors in total only 1551 filled up questionnaires can be retained back from the students.

These collected questionnaires were coded and sorted so as to be used for analyzing the outcomes, answer the research questions and testing hypothesis of this study based on the objectives of the study.

RESULTS AND DISCUSSION

The findings of the overall status on different indicators of use of ICT among students are as follows shown in Table 2. The indicators are serial numbered as mentioned in the original questionnaire.

Observation of the above table reveals that there are still more than 50% (54.60%) of students those are not using ICT Lab irrespective of its existence in the schools. 23.80% of the students are using it for the last three years as well as 21.58% students are using it for more than three years. It was also observed that 72.04% of students not visiting ICT Lab even once in a week. It is positive that 64.90% students owned email account although as they were not regular user of it the ID's of many were not functional. Very few (23.96%) of the student agreed that learning computers and related skills has helped them in higher academic performance. As majority of the school did not have regular computer teacher, the students never get chance of motivation to learn computers. These findings can be seen in Fig. 1, 2 and 3.

The observations of the responses from the students going to ICT lab it can be seen that there were very few students using ICT Lab for learning Hindi. Overall 31.47% students were there who did not specify the pattern of their use of ICT Lab in learning school subjects. 36.88% of students had their favourite activity as using MS Application while using computers. As majority of schools did

Table 2: Performance on Indicators of ICT usage of Students

| Sl. No.	Descriptions/Indicators	Observations						
Information from All Students = 1551								
01	For how many years you are using ICT Lab?	1-3 yrs.		3-6 yrs.		Not Using		
		369(23.80%)		335(21.58%)		847(54.60%)		
02	How many times you use ICT Lab in a week?	>2 times		1 time		Never(Not once)		
		310(19.96%)		124(7.98%)		1117(72.04%)		
		YES		**NO**		**Remarks**		
06	Do you have Email ID?	1007(64.90%)		544(35.09%)		Many ID's are non functional		
07	Do learning Computer has increased your marks in subjects?	372(23.96%)		1179(76.03%)				
08	Do computer teacher encourage you to learn computer?	101[@] (6.52%)		1450/NA[@](93.47%)		[@] Majority of schools don't have computer teachers		
#Responses from Students using ICT Lab = 704								
03#	You use ICT Lab for learning which subject?	Eng.	Hin.	Math	Sci.	IT	SSt.	Others	Remarks
		80 **(11.33%)**	13 **(1.86%)**	77 (10.99%)	117 **(16.58%)**	93 (13.19%)	102 (14.55%)	222[*] (31.47%)	[*]Not Specific
04#	What is your favorite activity while using computers?	MS Application		Games		Email		Others
		260 (36.88%)		117 (16.58%)		76 (10.82%)		251 (35.70%)
05#	How many times in school do you use internet for surfing on Web?	Often (More than 2 times a week)		Sometimes (One session a week)		Never		
		77(10.99%)		112(15.90%)		515(73.09%) (Internet Not Working)		
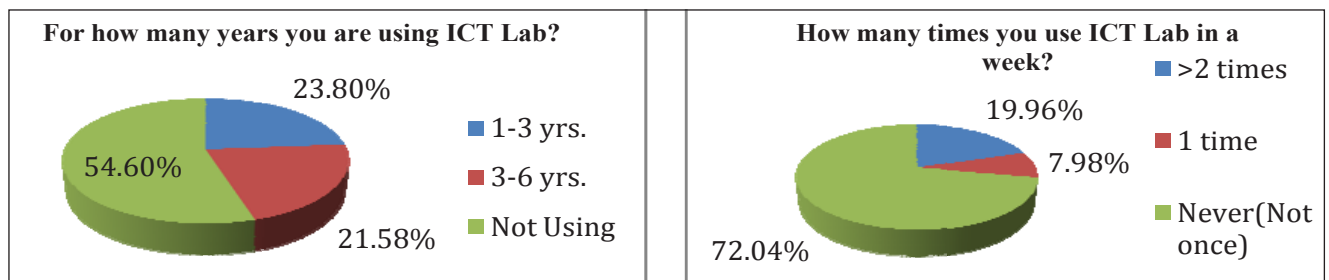
Fig. 1: Use of ICT Lab vs. No. of Years

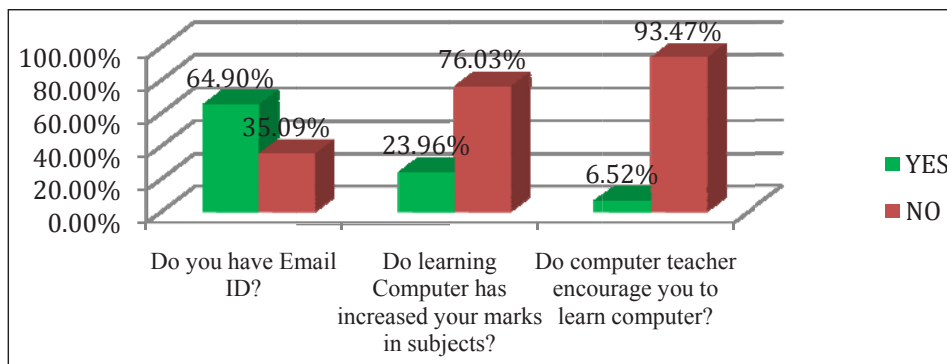**Fig. 2:** Use of ICT Lab in a Week

Fig. 3: Different Indicators on use of ICT among students

Table 3: χ^2-Association Analysis Test on Gender and usage on ICT

Sl. No.	Indicators	Gender	1-3 yrs.	3-6 yrs.	Not Using	Total	χ^2	df	P
01	Years of Using ICT	Boys	197	180	445	822	0.167	2	0.9201
			(195.56)	(177.54)	(448.89)				
		Girls	172	155	402	729			
			(173.44)	(157.46)	(398.11)				
			369	335	847	1551			
	Indicators	Gender	>2 times	1 time	Never (Not once)	TOTAL	χ^2	df	P
02	Use of ICT Lab in a Week	Boys	161	60	601	822	1.491	2	0.4746
			(164.29)	(65.72)	(591.99)				
		Girls	149	64	516	729			
			(145.71)	(58.28)	(525.01)				
			310	124	1117	1551			
	Indicators	Gender	2 TIMES	1 TIME	Never	TOTAL	χ^2	df	P
03	Using Internet for Surfing Web	Boys	39	60	281	380	0.422	2	0.8098
			(41.56)	(60.45)	(277.98)				
		Girls	38	52	234	324			
			(35.44)	(51.55)	(237.02)				
			77	112	515	704			
	Indicators	Gender	YES	NO	TOTAL	χ^2	df	P	
04	Having an Email Account	Boys	542	280	822	0.785	1	0.3757	
			(533.69)	(288.31)					
		Girls	465	264	729				
			(473.31)	(255.69)					
			1007	544	1551				
	Indicators	Gender	YES	NO	TOTAL	χ^2	df	P	
05	Learning Computers for Better Academic Performance	Boys	192	630	822	0.377	1	0.5392	
			(197.15)	(624.85)					
		Girls	180	549	729				
			(174.85)	(554.15)					
			372	1179	1551				
	Indicators	Gender	YES	NO	TOTAL	χ^2	df	P	
06	Computer Teacher Motivating for Learning Computers	Boys	56	766	822	0.260	1	0.6103	
			(53.53)	(768.47)					
		Girls	45	684	729				
			(47.47)	(681.53)					
			101	1450	1551				

not have effective internet browsing facility around 73% students never used internet for surfing on Web in a given week. The above findings have been also shown in Fig. 4, 5 and 6.

For the observation on the second objective the related null hypothesis would be:

❑ **H₀:** There is no significant difference between boy and girl students with respect to different

indicators of ICT usage across different schools from selected districts of Bihar where ICT@ Schools scheme has been in practice.

Results on test of the null hypothesis to find the significant difference between boy and girl students with respect to different indicators of ICT usage across different schools from selected districts of Bihar where ICT@Schools scheme has been in practice is given under Table 3.
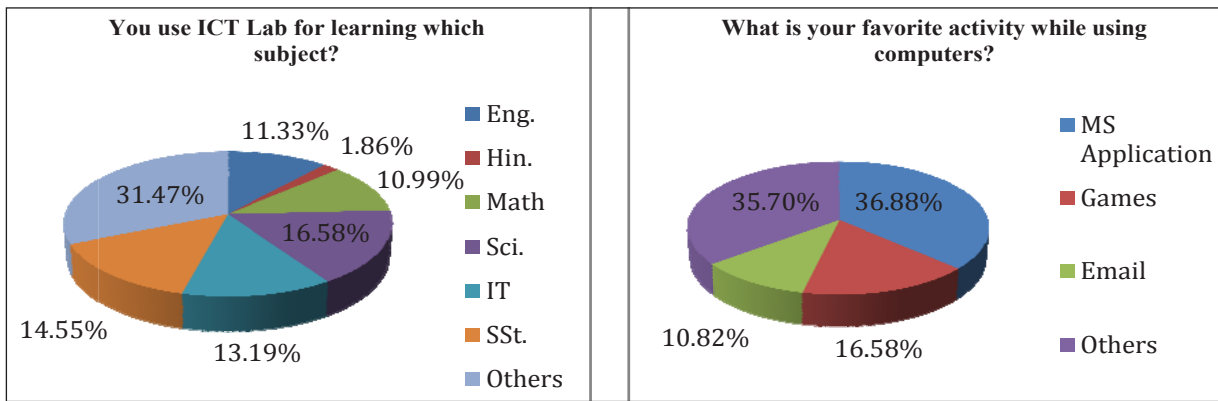
Fig. 4: Use of ICT Lab for Learning a Subject
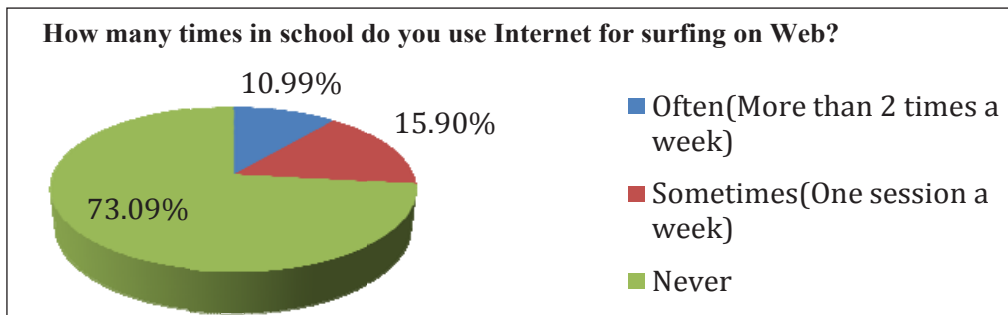

Fig. 5: Favorite activity while using computers

Fig. 6: Use of internet for browsing Web in a week

As observed from the $\chi 2$ test of difference between boy and girl students with respect to different indicators of ICT usage across different schools from selected districts of Bihar where ICT@Schools scheme has been in practice it is seen that in all the six indicators there exist no significant difference in the pattern of ICT usage between the boy and girl students. The calculated $\chi 2$ values are not high enough and observed P values are not low enough to reject the null hypothesis and thus there is no significant difference between the girls and boys and their pattern of use of ICT in the schools where ICT@ School scheme has been in practice.

CONCLUSION

Bihar has been a state where use of ICT in education started off late in comparison to several other states of the nation. ICT@Schools scheme for government schools of Bihar has been implemented for more than 12 twelve years as of now. The outcomes of this scheme are quite far behind the expectations. The students seldom get chance to use the ICT Labs as either the rooms are kept locked in the absence of computer teachers or the ICT Labs are not functional. Many of the system and apparatus

supplied in this project are found missing or are being theft from the school. It is quite good that there is no such gender based preferences while using the ICT Labs in terms of different factors like number of visits to the ICT Lab, owning an email account, surfing the Web etc. Throughout the world there are many evidences available where use of Computers has benefitted in increasing students performance but as we see here the students are quite unaware of its benefits.

The absence of computer teachers as well as lack of clear understanding among the students on using computers and internet resources for learning are the reasons behind this kind of perceptions. The teachers also are not available for motivating the students for using computers in their learning purpose. The lack of policy planning and fallacy in the administrative decision making mechanism also seemed the reason behind keeping the ICT Lab out of reach of students. Many Principals, teachers and other administration staff fears the increase in work load if there will be ICT related classes and activity in the schools. In the age of ICT it is always necessary that our future generation of students become skilled enough to use ICT in their

learning as well as to make them digital literate to survive in the ever changing competitive digital era. Government needs to come up with better mechanism such that the important policies like this are carefully implemented so as to achieve its desired objectives. Proper monitoring and feedback mechanism must also be kept in place to maintain the quality of these programs. This research work was also aimed to bring the real picture in front of stakeholders and policy makers so as the important educational schemes like this did not become waste of resources but are implemented in a way so as to promote the sustainable development of the future generations of learners in Bihar in particular and the country in general.

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