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Attitude of Teachers and Students about Application of ICT in Education: An Empirical Study

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Introduction

ICT is an acronym that stands for "Information Communication Technologies". Information and communication technologies are an umbrella term that includes all technologies for the manipulation and communication of information. ICT considers all the uses of digital technology that already exists to help individuals, business and organization. It is difficult to define ICT because it is difficult to keep up the changes they happen so fast. ICT is concern with the storage, retrieval, manipulation, transmission or receipt of digital data. More specifically, it can be stated that ICTs are the computing and communication facilities and features that variously support teaching, learning and a range of activities in education.

ICTs within education has strongly questioned on

a. What is learned?

b. How it is learned?

c. When & where learning takes place

d. Who is learning and who is teaching.

Nowadays the role of Information and Communication Technology (ICT),especially internet in the education sector plays an important role, especially in the process of empowering the technology into the educational activities. Education sector can be the most effective sector to anticipate and eliminate the negative impact of ICT. Technology (internet) in another side can be the most effective way to increase the student'sknowledge. Being aware of the significant role of ICT (internet) in our life, especially in the educational activities, education authorities should be wise enough in implementing the strategies to empower ICT in supporting the teaching and learning process in the classroom.

General purposes of ICT

1. Improvement in learning achievement;
2. Reduction of adult illiteracy rate, with sufficient emphasis on female literacy;
3. Expansion of provisions of basic education and training in other essential skills required by youth and adults;
4. Increased acquisition by individuals and families of the knowledge, skills and values required for better living and sound and sustainable development.

Role of ICT in Higher Education

1. To increase variety of educational services & medium
2. To promote equal opportunities to obtain education & information.
3. To develop a system of collecting & disseminating educational information.

ISSN:0971-1260
Vol-22-Issue-14-December-2019

4. To promote technology literacy.
5. To support distance learning
6. Access to information types & different forms.
7. Student-cantered learning though information access.
8. Learning environment concentrated on information access & inquiry.
9. Real life examples.
10. Teachers as mentors rather that content experts.

The role of ICT in the education is significant at higher level recurring and unavoidable. It is challenge to integrate ICTs with universities, into their strategies and educational process. It should be implemented at national & international level. It will be helpful to improve qualify and flexibility, the widening access to the field of tuition. Many universities are providing distance education by creating N/w through mutual partnership.Change In The Way of Learning: We discussed ICTs are cause to make a move from a teacher cantered learning to competency based learning. Universities are all.

Objectives

The following objectives are drawn for smooth functioning of the present study. These are as follows

1. To find out the attitude from the teacher about the application of ICT in school education according to status.
2. To find out the attitude from the teacher about the application of ICT in school education according to gender.
3. To find out the attitude from the teacher about the application of ICT in school education according to level of appointment.
4. To find out the attitude from the teacher about the application of ICT in school education according to locality.
5. To find out the attitude from the students about the application of ICT in school education according to economic status.
6. To find out the attitude from the studentsabout the application of ICT in school education according to gender.
7. To find out the attitude from the students about the application of ICT in school education according to locality.
8. To find out the attitude from the students about the application of ICT in school education according to standard of class.
9.

Hypotheses

On the basis of above objectives, some hypotheses were formulated. These are as follows

$H_0$1 - There is no significant difference in attitude about the application of ICT in School education according to status among the teachers.

$H_0$2- There is no significant difference in attitude about the application of ICT in School education according to gender among the teachers.

ISSN:0971-1260
Vol-22-Issue-14-December-2019

$H_0$3- There is no significant difference in attitude about the application of ICT in School education according to level of appointment among the teachers.

$H_0$4 - There is no significant difference in attitude about the application of ICT in School education according to locality among the teachers.

$H_0$5 - There is no significant difference in attitude about the application of ICT in School education according to economic status among the students

$H_0$6 - There is no significant difference in attitude about the application of ICT in School education according to gender among the students

$H_0$7 - There is no significant difference in attitude about the application of ICT in School education according to locality among the students

$H_0$8 - There is no significant difference in attitude about the application of ICT in School education according to standard of class among the students.

Data Source

The study is empirical in nature. A well structured questionnaire is used for collecting data from two schools consisting of 110 students and 100 teachers covering rural and urban area.

Table – 1: Sample Profile of the Study

Sl. No	District	Schools	GP	Teachers	Students	Total no. of Respondents
1	PaschimMedinipur	Khosla Indumati High School	Salbani	50	55	105
2	PaschimMedinipur	Saradamaye High School	Satbankura	50	55	105
Total	-	-		100	110	210

Reliability

The reliability of the Questionnaire was established with the help of 'Test-retest' and 'Split-half' method on the same randomly selected 210 respondents, were used.

Table- 2: Showing the Value of Reliability Co-efficient of Split-half Method

Method of Reliability Test	Value	Level of Significance
Split-half	0.78	High
Test-retest	0.85	High

The correlation co-efficient was calculated by the product moment method. The value of 'r' by 'Split-half' and 'Test-retest' method were 0.78 and 0.85 respectively with a significance level of 0.01 that ensured the reliability of the Questionnaire.

ISSN:0971-1260
Vol-22-Issue-14-December-2019

Validity

Each items of Questionnaire were adjudicated accordingly by the experts and then tried upon a small sample of respondents. Then the final shape of Questionnaire was given.

Methodology of the Study

The appropriate statistical methods which were applied in the present study are-

i. Descriptive statistics: mean, S.D, and SED
ii. Student's t-test: it was used to measure the significant differences in opinion if any, among the teachers and students about the application of ICT in education.

Analysis and Interpretations

Testing of Hypotheses ($H_0$1, $H_0$2, $H_0$3, $H_0$4) - There is no significant difference in attitude of teachers about the application of ICT in School education according to status, gender, level of appointment and locality.

Table – 3: Showing the particulars about mean, SD and t-value according tostatus, gender, level of appointmentand locality by teachers

	Status		Gender		Level		Locality	
Measures	**Trained**	**Untrained**	**Male**	**Female**	**Higher Secondary**	**Secondary**	**Urban**	**Rural**
N	60	40	55	45	40	60	35	65
M	53.45	39.14	55.75	48.13	55.27	39.28	69.36	61.27
S.D.	6.56	5.12	7.13	5.24	7.09	5.10	8.29	5.18
SE_D	1.17		1.23		1.30		1.54	
t - value	12.23		6.20		12.30		5.25	

Source: Author's calculation based on field survey 2018-2019
***Significant at .01 level**

From the above table-3 it is clear that the mean scores and S.D of different categories of teachers are different. The t values of the above cases are different according to status of teachers (i.e., 12.23), gender (i.e., 6.20), level of appointment (i.e., 12.30) and locality (i.e., 5.25). So the null hypotheses are rejected at 0.01 level. That means that there exists significant difference in attitude of teachers about the application of ICT in School education according to status, gender, level of appointment and locality i.e., residing place.

Testing of Hypotheses ($H_0$5, $H_0$6, $H_0$7, $H_0$8) - There is no significant difference in attitude of students about the application of ICT in School education according to economic status, gender, locality and standard of class in schools

ISSN:0971-1260
Vol-22-Issue-14-December-2019

Table – 4: Showing the particulars about mean, SD and t-value according to economic status, gender, locality and standard of class of students

Measures	Economic Status		Gender		Locality		Standard of class	
	APL	BPL	Male	Female	Urban	Rural	Secondary	Senior Secondary
N	55	55	60	50	65	45	70	40
M	51.42	37.26	56.18	42.19	58.19	43.17	69.43	76.12
S.D.	6.51	4.20	7.42	5.39	6.28	5.40	7.12	8.19
SE_D	1.04		1.22		1.12		1.54	
t	13.61		11.45		13.41		4.34	

Source: Author's calculation based on field survey 2018-2019
***Significant at .01 level**

It is evident from table 4 thatthe values of mean, S.D, and SE_D are different corresponding to economic status, gender, locality and standard of class of the students. Again the calculated t-values are different according to economic status of students (13.61), gender (11.45), locality (13.41) and standard of class (4.34). So the null hypotheses are rejected at 0.01 level. That means that there exists significant difference in attitude of students about the application of ICT in School education according to economic status, gender, locality and standard of class of students.

Table- 5: Showing Multiple 'R' along with Some Relevant Measures

Multiple R	0.681
R^2	0.464
Adjusted R^2	0.469
SE	0.694
F-Statistic	192.435

Table – 6: Showing Binary Logit Regression Analysis for ICT

$AICTE = C_0 + C_1*X_1 + C_2*X_2 + C_3*X_3 + C_4*X_4 + C_5*X_5$				
Variable	**Coefficient**	**Standard Error**	**Z-Statistic**	**P-value**
C	12.531240	2.214321	4.524156	0.0000
X_1	0.001324	0.000132	3.534216	0.0000*
X_2	0.426423	0.321465	5.631245	0.5627**
X_3	0.264231	0.324512	0.641263	0.0000*
X_4	0.273142	0.231452	0.631451	0.0000*
X_5	0.243153	0.352618	3.821342	0.0000*

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N.B. – i) Dependent Variable = Application of Information and Communication Technology in Education(AICTE)
ii) Total number of observations = 210
iii) X_1 = Suitable Teachers; X_2 = School's Infrastructure; X_3 = Environment; X_4 = Outlook of Teachers; X_5 = Attitude of Students
iv) * significant; ** insignificant
v) Source: Author's calculation based on field survey, 2018-19

It is clear from tables 5 and 6 that suitable teachers, school's infrastructure, environment, outlook of teachers and attitude of Students are positively associated with application of ICT in the field of education and they are highly significant with the exception of one variable i.e., school's infrastructure. This implies that the higher the level of suitable teachers, school's infrastructure, environment, outlook of teachers and attitude of Students the higher will be the scope of application of ICT in education.

Limitations of the Study

The present study has the following Limitations:-

- We have considered only one district for the present study
- Only hundred (100) teachers and one hundred ten students (110) were considered.
- Only Bengali language speaking teacher and students were assigned for the study.
- We have taken only one year time period.

Recommendations

The following recommendations can be made to take further research-

- Only few areas of Paschim Medinipur district were selected in West Bengal
- Broad areas of this district and others districts can be considered for descriptive work
- The time periods can be enlarged.
- Samples size can be increased.
- The other area of West Bengal can be taken into consideration.

Conclusion

From the above analysis and discussion, it is concluded that application of ICT in teaching and learning process plays a pivotal role. It helps to teacher to teach the subject matter easily. It also helps the students to get knowledge clearly from the sender. However, the scope of application depends on several factors such as suitable teachers, school's infrastructure; environment, outlook of teachers, attitude of students etc.

ISSN:0971-1260
Vol-22-Issue-14-December-2019

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