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The Effect Of ICT On Academic Achievement Of History Student In High Secondary School

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Abstract

Information and Communication Technologies (ICTs) have profoundly reshaped every aspect of human life over the past few decades .ICT has revolutionized education by providing fresh opportunities for both teaching and learning. ICT refers to the technologies that facilitate access to information through telecommunications. The present study had investigated The Effect of ICT on Academic Achievement of History Student in high Secondary School.The major objectives of this study was to know the differences in achievement of History due to use of ICT and other traditional method from the gender perspectives (Boys & Girls) and Location Perspectives (Urban & Rural).Only sixty (60) students were selected randomly from the higher secondary standard school participated in the study. In this study the Present research investigator had followed the "pre-experimental design (Two groups, static design)". The study found that there is significant effect of ICT on the academic achievement of the students all W.B.C.H.S.E under High Secondary School students for class-XI of Nadia district. For data analysis descriptive statistics (Mean, Median, & S.D) and under inferential statistics t-test will be used. In the 21st century, Information and Communication Technology (ICT) has become an integral part of daily life, influencing various aspects, including education. Achievement in the School subjects is a way for adult to maintain their personal worth; there must be a strong drive for achievement, Academic achievement can also performs the willingness to achieve skill and ability of the students with the help of ICT.

Key words: Academic achievement, ICT, Higher Secondary School, School students

Introduction

Education is slightly regarded as the key to national prosperity and welfare and it is one of the most important forms of National investment .The term Information and Communication Technology (ICT) is a broad and comprehensive expression. It is not restricted to the computers or the internet alone. It ranges from the use of FM radio to satellite for communication. ICTs are the fundamental building blocks of the present day society. The contemporary society is highly influenced by ICTs in every aspect of life, including education. The effects are experienced more in the field of education since it has the potential for teachers to transform the teaching methodology to meet individual needs. Today, schools are under pressure to adapt to this technological innovation. Schools that train their students in yesterday's skills and outdated technologies are not meeting the needs of tomorrow's world. Such children will not fit into tomorrow's professional requirements.ICT for education identifies the development of information and communications technology especially for teaching-learning purposes while the ICTs in education includes the adoption of basic elements of information and communication technologies in the teaching-learning process. The application of ICT is creating significant changes in the teaching and learning process. The traditional approach in teaching has stressed on content. For decades course materials were designed around textbooks.

Every child when it is admitted to the School is expected to achieve to the normal standards of the grade. The children through various experiences learn to just to its peer group teacher and to the School situation. Academic achievement is helps the all round development of skills through co-curricular activities. Teachers taught the content through lecture method and the activities were designed to enforce the content knowledge. ICT facilitates the dissemination of knowledge based on the contemporary curricula. As a result, incorporating ICT in teaching helps both teachers and students since it has the potential to impart quality education if it is used effectively.ICT provides a great flexibility in education to ensure that learners are able to access knowledge regardless of space and time. Observed that using ICT helps students to communicate, share ideas, and work as a team any where any time. ICT also helps to involve the students in a global collaborative learning .The Mach in to Project, a K–12 literature-based I EARN program of Backley and Takagi is a good example in this regard.

Statement of the problem

The problem of the present study is stated as; **“The Effect of ICT on Academic Achievement of History Student in high Secondary School”.**

Objectives of the study

- To examine the differences in achievement of History due to use of ICT and other traditional method.
- To determine the differences in achievement of History due to use of ICT and other traditional method from the gender perspectives (Boys & Girls).
- To determine the difference in achievement of History due to use ICT and other traditional method from the Location Perspectives (Urban & Rural).

Review of related literatures

Behera, R (2025) conducted a study on Effect of ICT on Academic Achievement of Secondary School Pupil in Cuttack District. The objectives of the research were to examine the use of ICT as a Tool in classroom teaching. To study the effect of ICT on teaching learning process. The present study had followed all the secondary school students of Cuttack district were the population for the study whereas 40 number of ninth grade students from two different schools was the sample taken by the researcher for the study. The findings of the study show that the students of the secondary school students were aware by using ICT, equipment comes under the ICT in their home as well as in their day-to-day life, Like-mobile phone, student agreed with in my line that computers are highly useful for their teaching learning process. ICT based method of teaching may be helpful to the students those who are not regular in class.

T.D, Kumar, P and Sain, B (2024) conducted a study on Exploring ICT Awareness and Academic Achievement Among Senior Secondary School Students. Objectives of the Study include assessing the level of ICT awareness and academic achievement, exploring the relationship between ICT awareness and academic performance, and examining potential gender-based variations in ICT awareness and academic achievement among Senior Secondary School Students based on gender.

The findings of the study show senior Secondary School Students demonstrate a high level of awareness about ICT and the academic achievement level of senior secondary school students is considered average. This studies observed in the mean scores of academic achievements among Senior Secondary School Students based on gender.

Koralli,c. B and Hoovinabhavi, prf. B(2021) assessed the Impact Of ICT On Academic Achievement Of Secondary School Students. The main aim of this study was impact of ICT on academic achievement of secondary school students. This study examines selected stratified random sample of 200 students studying in School students, giving representation to sex, type of management, type of family and size of family, out of 200 students 100 boys and 100 girls. The present study finds out the relationship between academic achievement and impact of ICT on secondary School students. Results showed a significant difference between the academic achievements of male and female students used more and less ICT. The more ICT used female students secure more percentage than that of less media used male students. ICT impact on academic achievement of male and female School students, significant

difference between the academic achievements of urban and rural School students used more and less ICT. ICT impact on academic achievement of urban and rural School students.

Hypotheses of the study

Ho1: There is no significant difference in achievement of History due to use of ICT and other traditional method of instruction.

Ho2: There is no significant difference in achievement of History due to use of ICT and other traditional method of instruction in respect to gender (Boys & Girls).

Ho3: There is no significant difference in achievement of History due to use of ICT and other traditional method of instruction in respect to Location (Urban & Rural).

Operational Definition of the term

- **Academic achievement**: Performance is the extent to which a students, teacher or institution has achieved their short or long term educational goals. Cumulative GPA (grade point average) and completion of educational degrees such as high school and bachelor's degrees represent academic achievement.
- **ICT:** The term ICT is also used to refer to the convergence of audio – visual and telephone networks with computer network through a single cabling or link system. There are large economic incentives (huge cost savings due to elimination of the telephone network) to merge the telephone network with the computer network system using a single unified system of cabling, signal distribution and management.
- **Higher Secondary School:** Higher Secondary School is the next step up from Secondary School. In India, high school is a grade Education from standards XI and XII. XI and XII are also called Higher secondary school.

Delimitation

School: Only two schools were selected for the present research from Chakdaha Block.

Sample: Only sixty (60) students were selected randomly from the higher secondary standard school.

Medium: Only Bengali medium schools were selected for the study.

Significance of the study

The significance of the study was evident when the following were considered

- The need of adequate information on effectiveness of ICT in learning history
- It help to understand how the programmed helps to develop concepts of the pupils.

Methodology of the research

Design:

There are various types of experimental design. In this study the researcher has used the "pre-experimental design (Two groups, static design)". Pre- experimental design provide little control or situational variables. Now a day there are used in the study in education problems. There are two types of pre-experimental designs. Here the researcher used control group and experimental group of students in which control group were taught by traditional method and experimental were taught ICT and got the score or result where analyzed statistically. The two groups will be matched and selected from the students of class XI.

Variables:

There are two types of groups and variables in this research. The groups are control and experimental. The control group has two variables, one is 'Independent' and the other is 'Dependent', Independent variables is "Teaching through traditional method" and dependent variables is "Achievement" Similarly the experimental group has two variables. The two variables are 'Independent' and 'Dependent', Independent variables is "Teaching through ICT and Dependent variables is "Achievement"

Two Groups and Two variables:

Group	**Independent Variable**	**Dependent Variable**
Control	Teaching through traditional method	Achievement
Experimental	Teaching through ICT	Achievement

Population:

All W.B.C.H.S.E under High Secondary School students for class-XI of Nadia district have been taken as population of the study. Here total number of W.B.C.H.S.E under High Secondary School in Chakdaha block is 24(approx) and total number of students in those school is approximately 1,680.

Sample:

By the purposive sampling, it is enough to select schools or class room where the researcher more systematically and easily. The test was administered on 300 student of class xi chosen from the medium standard of student on the basis of their results in previous examination and the selected students will be unable to take private tuition for want of money as their financial condition or status does not permit it. For calculate the co-relation the Test-Retest was administration on 60 of class xi (30 Boys and 30 Girls) students of two (2) high secondary schools in Nadia district (one (1) urban area & one (1) rural area) have been selected as the sample .Students (20% of total sample) which were randomly selected.

Tools used

To measure the achievement test of Bengali a self-made standardized questionnaire were followed by researcher containing knowledge, understanding, application and skill.

Blue Print of the Achievement Test in History:

SL No.	Dimensions	Question No.
1.	Knowledge	1-12
2.	Understanding	13-21
3.	Application	22-27
4.	Skill	28-30

Techniques of Data Analysis:

For the data analysis descriptive statistic (Mean, Median, & S.D), inferential statistic and graphical representation will be used.

RESULT:

Description & Interpretation:

Table-1

Distribution table for the score due to use ICT

CLASS	FREQUENCY(f)
17-18	1
19-20	3
21-22	10
23-24	11
25-26	4
27-28	1

Mean=22.634, Median=22.68, Standard Deviation=2.1

Table-2

Distribution table for the score due to use Traditional method

CLASS	FREQUENCY(f)
03-04	1
05-06	1
07-08	4
09-10	8
11-12	10
13-14	5
15-16	1

Mean=10.44 , Median=10.7,Standard Deviation=2.56

Research Hypotheses-1

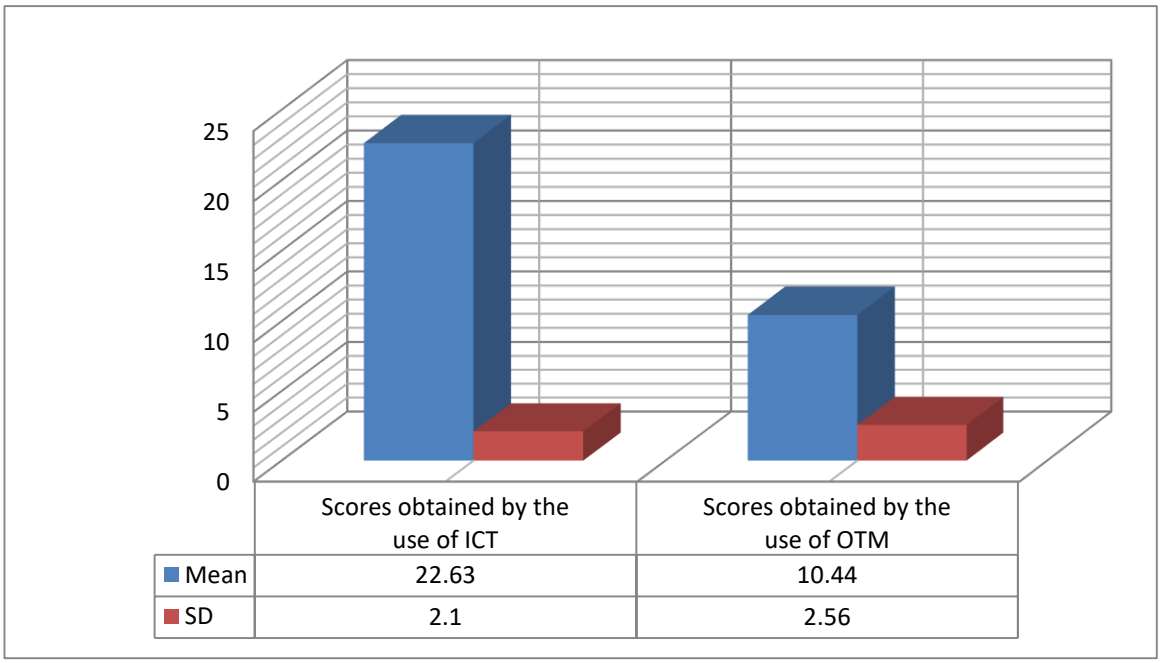
There is no significant difference in achievement of History due to use of ICT and other traditional method of instruction.

(Significant difference of mean score in History due to use ICT and other traditional method**)**

variable	number	mean	s.d	M1~M2	Df	t	Level of significant	rank
Use of ICT	**30**	**22.63**	**2.1**	**12.19**	**57**	**20.41**	**0.01**	**S**
Use of other traditional method	30	10.44	2.56					

Interpretation

From the above table the value of t is 20.41 for df= 57, the table value are 2.00 at 0.05 levels and 2.66 at 0.01 levels .so our calculate value is greater than the table value. Therefore the test is highly significant at 0.01 level. So the Ho1is rejected.



Graph- 1: Bar-diagram showing the mean and SD by the use of ICI and Other traditional meth

Table-3

Distribution table for the boys students score by the use of ICT

CLASS	FREQUENCY(f)
18-19	1
20-21	5
22-23	3
24-25	5
26-27	1

Mean=22.5, Median=22.9, Standard Deviation=2.18

Table-4

Distribution table for the boys students score by the use of Traditional method

CLASS	FREQUENCY(f)
06-07	2
08-09	1
10-11	4
12-13	6
14-15	2

Mean=11.18, Median=11.66, Standard Deviation=2.86

Table-5

Distribution table for the girls students score by the use of ICT

CLASS	FREQUENCY(f)
16-17	1
18-19	0
20-21	5
22-23	4
24-25	4
26-27	1

Mean=22.1, Median=22.25, Standard Deviation=2.48

Table-6

Distribution table for the girls students score by the use of Traditional method

CLASS	FREQUENCY(f)
04-05	1
06-07	1
08-09	4
10-11	6
12-13	3

Mean=9.7, Median=10, Standard Deviation=2.16

Research Hypotheses-2

There is no significant difference in achievement of History due to use of ICT and other traditional method of instruction in respect to gender. (Boys & Girls)

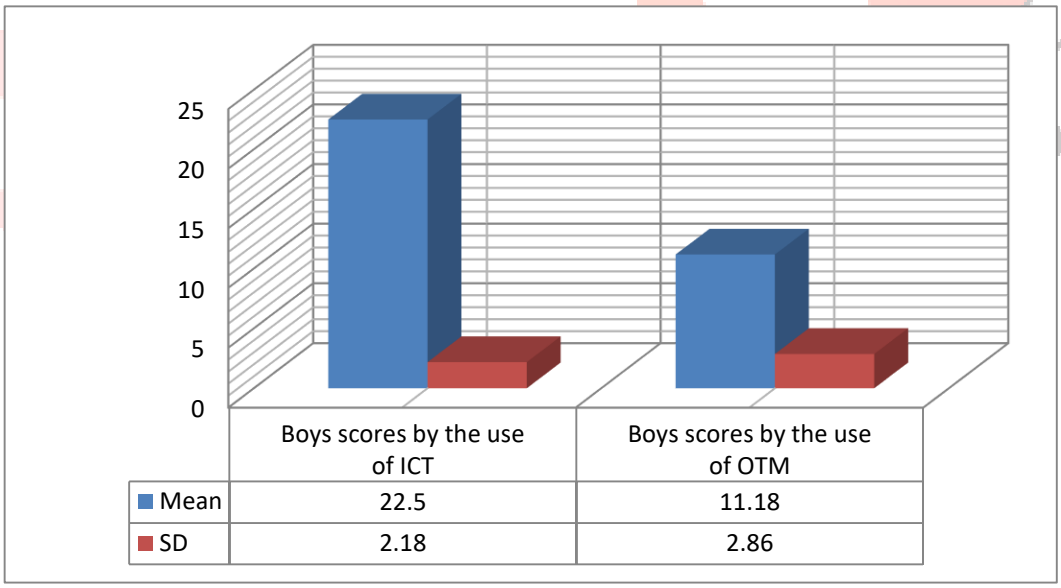
Research Hypotheses-2
Table-2.1

(Significant difference of mean score in History due to use ICT and other traditional method in relation to boy's students)

variable	number	mean	s.d	M1~M2	df	t	Level Of significant	remarks
Boys score in Use of ICT	**15**	**22.5**	**2.18**	**11.32**	**28**	**12.30**	**0.01**	**S**
Boys score in Use of other traditional method	**15**	**11.18**	**2.86**					

Interpretation:

From the above table the value of t is 12.30 for df= 28, the table value are 2.00 at 0.05 levels and 2.66 at 0.01 levels .so our calculate value is greater than the table value. Therefore the test is highly significant at 0.01 level. So the Ho2 is rejected.



Graph-2: Bar-diagram showing the mean and SD of boy's students by the use of ICI and Other traditional method

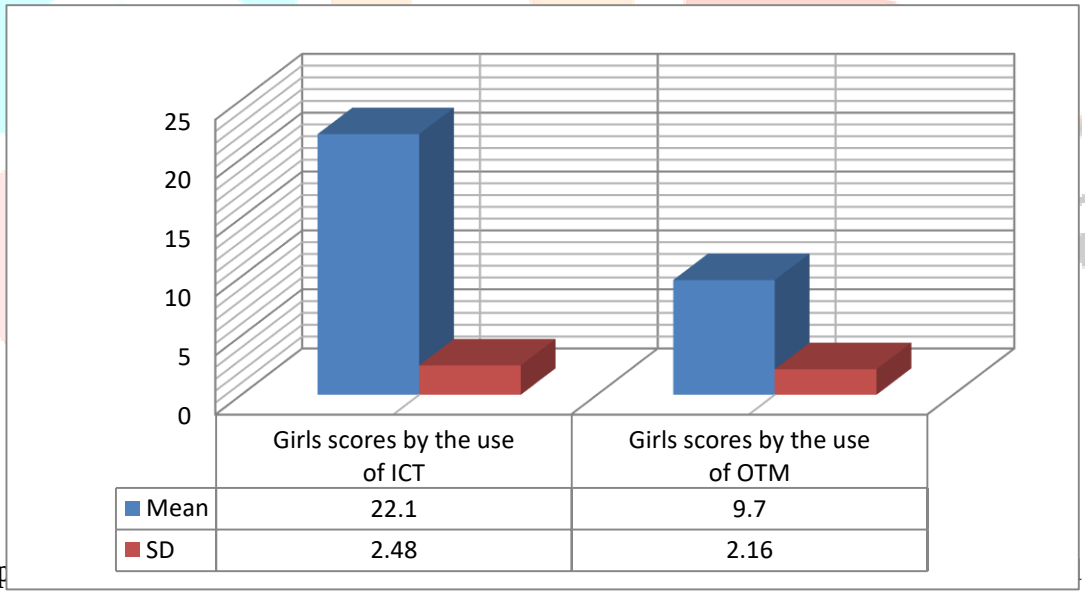
Research Hypotheses-2
Table-2.2

(Significant difference of mean score in History due to use ICT and other traditional method in relation to girl's students)

variable	number	mean	s.d	M1~M2	df	t	Level of significant	remarks
girls score in Use of ICT	15	22.10	2.48	12.4	28	14.76	0.01	S
girls score in Use of other traditional method	15	9.7	2.16					

Interpretation:

From the above table the value of t is 14.76 for df= 28, the table value are 2.00 at 0.05 levels and 2.66 at 0.01 levels .so our calculate value is greater than the table value. Therefore the test is highly significant at 0.01 level. So the Ho2 is rejected.



Grap Other traditional method.

Table-7

Distribution table urban for the score by the use of ICT

CLASS	FREQUENCY(f)
16-17	1
18-19	1
20-21	6
22-23	2
24-25	4
26-27	1

Mean=21.82, Median=21.32, Standard Deviation=2.6

Table-8

Distribution table for the urban students score by the use of Traditional method

CLASS	FREQUENCY(f)
04-05	1
06-07	1
08-09	2
10-11	5
12-13	5
14-15	1

Mean=10.5, Median=10.9, Standard Deviation=2.52

Table-9

Distribution table for the rural students score by the use of ICT

CLASS	FREQUENCY(f)
20-21	4
22-23	5
24-25	5
26-27	1

Mean=23.04, Median=22.9, Standard Deviation=2.12

Table-10

Distribution table for the rural students score by the use of Traditional method

CLASS	FREQUENCY(f)
06-07	2
08-09	3
10-11	5
12-13	4
14-15	1

Mean=10.38, Median=10.5,Standard Deviation=2.24

Research Hypotheses-3

There is no significant difference in achievement of History due to use of ICT and other traditional method of instruction in respect to Location. .(Urban & Rural).

Research Hypotheses-3

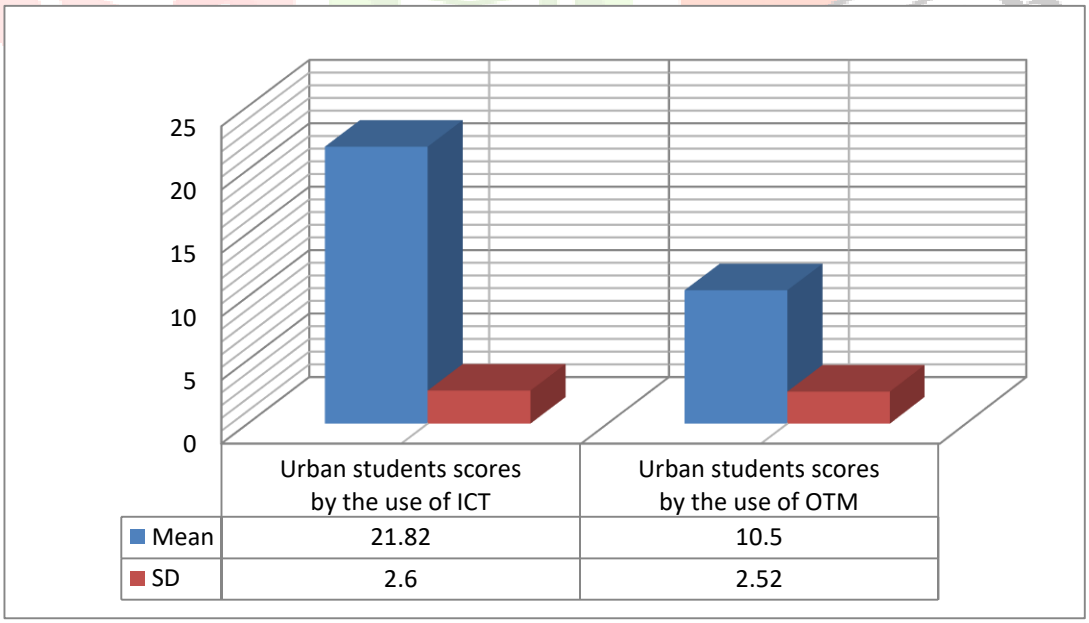
Table-3.1

(Significant difference of mean score in History due to use ICT and other traditional method in relation to urban students)

variable	number	mean	s.d	M1~M2	df	t	Level of significant	remarks
Urban student score in Use of ICT	**15**	**21.82**	**2.6**	**11.32**	**28**	**26.32**	**0.01**	**S**
Urban student score in Use of other traditional method	**15**	**10.5**	**2.52**					

Interpretation:

From the above table the value of t is 26.32for df= 28, the table value are 2.00 at 0.05 levels and 2.66 at 0.01 levels .so our calculate value is greater than the table value. Therefore the test is highly significant at 0.01 level. So the Ho3 is rejected.



Graph-4: Bar-diagram showing the mean and SD of urban students by the use of ICI and Other traditional method.

Research Hypotheses-3

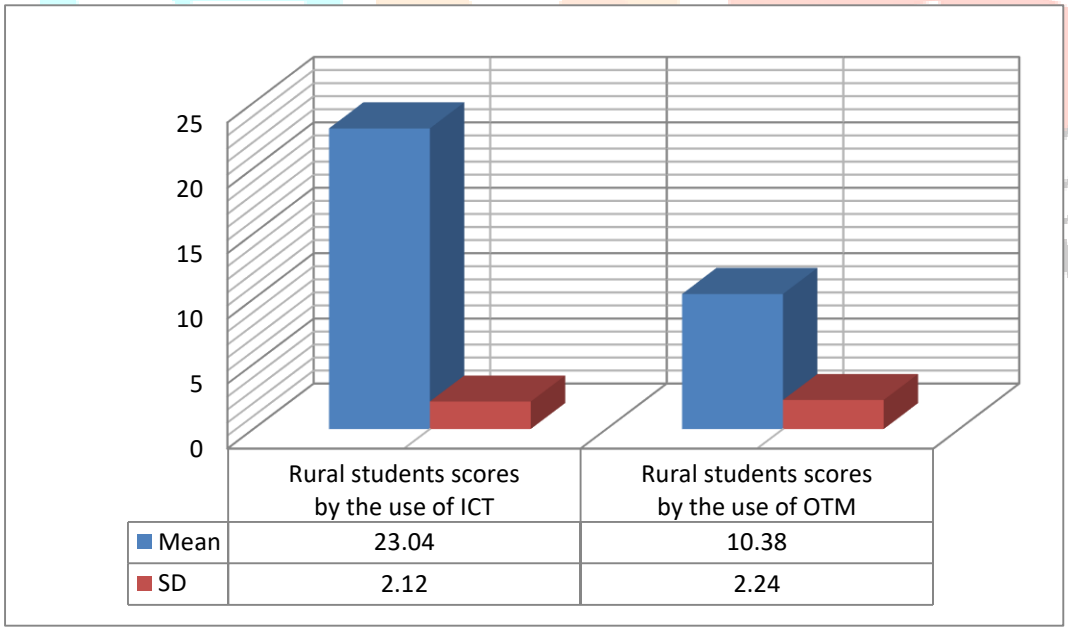
Table-3.2

Significant difference of mean score in History due to use ICT and other traditional method in relation to rural students

variable	number	mean	s.d	M1~M2	df	t	Level of significant	remarks
Rural student score in Use of ICT	15	23.04	2.12	12.66	28	16.02	0.01	S
Rural student score in Use of other traditional method	15	10.38	2.24					

Interpretation:

From the above table the value of t is 16.02for df= 28, the table value are 2.00 at 0.05 levels and 2.66 at 0.01 levels .so our calculate value is greater than the table value. Therefore the test is highly significant at 0.01 level. So the Ho3 is rejected.



Graph-5: Bar-diagram showing the mean and SD of rural students by the use of ICI and Other traditional method.

Findings:

i) On the basis of the calculation for the proof of Ho1, It is found that the t-value is 20.41 for df= 57, the table value is 2.00 at 0.05 levels and 2.66 at 0.01 levels. So our calculate value is greater than the table value. Therefore the test is highly significant at 0.01 levels. So the Ho1 is rejected. So, the Ho1 proves that there is significant difference in achievement of history due to use of ICT and other traditional methodology.

ii) On the basis of the calculation for the proof of Ho2, It is found that the table-2.1 t-value is

20.30 and table-2.2 t-value is 14.76 for df= 28, the table value are 2.00 at 0.05 levels and 2.66 at 0.01 levels. So our calculate value is greater than the table value. Therefore the test is highly significant at 0.01 levels. So the Ho2 is rejected. So, the Ho2 proves that There is no significant difference in achievement of History due to use of ICT and other traditional method of instruction in respect to gender (Boys & Girls).

iii) On the basis of the calculation for the proof of Ho3, It is found that the table-3.1 t-value is 26.32 and table-3.2 t-value is 16.02 for df= 28, the table value are 2.00 at 0.05 levels and 2.66 at 0.01 levels. So our calculate value is greater than the table value. Therefore the test is highly significant at 0.01 levels. So the Ho3 is rejected. So, the Ho3 proves that there is significant difference in achievement of history due to use of ICT and other traditional method of instruction in respect to Location (Urban & Rural).

Limitations

- Student from low and high level of ICT shows a mean difference in their academic achievements.
- In the class room, student's attendance, mainly meritorious students absent that day, so investigator cannot get data from there.
- The academic achievement of students studying in government, private aided and private unaided Schools there was a difference. so if investigator ask any question ,get feedback different way.

Conclusion

The field of Information and Communication Technology (ICT) is a dynamic and rapidly evolving domain that plays a crucial role in shaping the contemporary world. Today use of ICT in the classroom is very essential for effective teaching learning process. Teachers and students both are getting easy for their work in limited time. Based on the findings, it can be concluded that information and communication technology significantly influences students and their ability to access information. The integration of Information and Communication Technology has the potential to positively influence the academic achievement of high secondary students. ICTs provide unprecedented access to resources, foster collaboration, and enable personalized learning experiences that significantly enhance academic performance. It discovered that the ICT program is more compelling and effective than the conventional teaching approach in terms of students' achievement scores in history students.

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