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A Study on Attitude of High School Students towards the Use of Information and Communication Technology (Ict) in Teaching Learning of West Singbhum District Jharkhand

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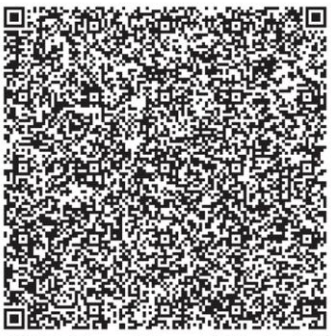
Abstract
Information and Communication Technology (ICT) is a set of integrated technological resources that provide, through hardware, software and telecommunications functions, the automation and communication of business processes, scientific research, and teaching and learning. Information and communication technology (ICT) in the form of Digital Education can improve rural and urban areas school students' interest. The present study deals with the use of ICT for academic and non-academic purposes with major constraints of ICT use in rural and urban schools. The study was conducted with secondary schools with ICT facilities in West Singbhum Districts of Jharkhand. The study found many opportunities for ICT access with existing resources if it is properly used and utilized.

Key words: *Attitude, ICT, Secondary, School Students, and Urban & rural.*



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Introduction

Attitude is a psychological construct that is a mental and emotional entity that inheres or characterizes a person, their attitude to approach to something, or their personal view on it. Attitude involves their mindset, outlook and feelings. Attitudes are complex and are an acquired state through life experience. Attitude has been defined in a variety of ways by various thinkers. According to Allport (1935), "Attitude is a mental and neutral state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related". Fishbein and Ajzen (1980) described attitude as a, "predisposition to act towards objects in a consistently favorable or unfavorable way". According to AlGahtani & King, (1999) "ICT has a great impact on how they behave, that is, attitude towards ICT is an antecedent to and a predictor of ICT usage".

ICT is the technology needed for information processing, in particular, the use of electronic computers, communications devices and software applications to convert, store, protect, process, transmit, and retrieve information from anywhere, anytime. There are large economic incentives to merge the computer network system with the telephone networks using a single unified system of signal distribution, cabling, and management. ICT is an umbrella term that contains any communication device, encompassing radio, television, cell phones, computer and satellite systems, network hardware and so on, as well as the various services and appliances with them such as distance learning and video conferencing. In the present study, the

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researcher wants to know the attitude of high school students towards the use of information and communication technology in teaching learning of West Singhbhum district in Jharkhand.

Review of Literature

Baskey, K. S. (2017). Work on Use of I.C.T. and Development of Teaching-Learning Activities: A Micro Study In The District of Purba Burdwan, West Bengal. 'The present paper attempts to analyze the impact of ICT on development of teaching-learning activities among the students and teachers of the surveyed schools in Purba Burdwan district of West Bengal. The study comprises of 120 students and 80 teachers of few selected schools. A nonparametric chi-square test has been used to examine the relationship between use of ICT in school and development of teaching-learning activities among the teachers of the surveyed areas. Also, students' 't'- test has been applied to know whether any significant differences in awareness among the teachers regarding the application of ICT in school and development of teaching-learning activities with respect to gender (Male Female teacher), residing place(Urban Rural) and status of appointment(PGT&TGT)".

Barodiya, P. et al. (2015). Studied on Use of ICT in Teacher Education. "Professional development to incorporate ICTs into teaching and learning is an ongoing process. Teacher education curriculum needs to update this knowledge and skills as the school curriculum change. The teachers need to learn to teach with digital technologies, even though many of them have not been taught to do so. The aim of teacher training in this regard can be either teacher education in ICTs or teacher education through ICTs. A teacher's professional development is central to the overall change process in education. In planning the integration of technology in Teacher education it is important for teacher education, Institution to understand the knowledge and skills necessary for teachers to effectively use ICT in their instructions. Teachers need technical assistance to use and maintain technology. In this paper discuses to study of Teacher education, to know the Significance of ICT in teacher education and to provide some Suggestions of teacher education".

Cener E. et al. (2015) conducted a study "The Impact of ICT on Pupils' Achievement and Attitudes in Social Studies". 'The aim of this study is to investigate the impact of teaching social studies with the help of CT on pupils' achievement in social studies. A history, geography and culture-oriented theme was selected from the social studies curriculum for the research, Turks on the Silk Road. A multimedia CD, documentaries, PowerPoint and so on were used to teach social studies to 6th graders. The research design of the study is quasi experimental. Three different research tools were used to collect data: an academic achievement test, an attitude measurement scale on social studies education and an attitude measurement scale on ICT. When achievement post test scores were treated as dependent variable in block wise regression analysis the followings are found: Pupils' attitudes towards the subject and ICT do not have an effect on their post-test achievement scores. However, their prior knowledge on the subject and the treatment i.e. teaching social studies with ICT have a positive effect on their achievement. Teaching social studies with ICT do not have any statistically significant effect on pupils' attitudes toward social studies lesson. Thus, it is recommended that teachers and policy makers should find ways to formulate effective ICT integration applications for social studies.

Devi, S. et al. (2012). Observed that ICT for Quality of Education in India. 'Information and Communication Technology (ICT) can be utilized for the education sector. Education includes online, distance and part time education. There are unlimited applications of ICT in the real world. In his paper emphasis is on the education field. Traditional Non-formal education system process includes activities like admission, Personal Contact Programmes, Exam for any course in a University or Institution. In this process ICT can play a great role in all the activities by providing a lot of benefits to students, teachers, parents and Universities itself. ICT can be used for providing education to the people who are not able to come to school due to various constraints. ICT can play great role in formal and non-formal forms of education. The paper examines certain important issues related with the effective implementation of ICTs in all levels of education and provides suggestions to address certain challenges that would help in the implementation of ICTs in education and simultaneously increasing Quality of education'.

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Castro, Sanchez, J. J. and Alemán, E. C. (2011) Work on "ICT is used as a tool for students to discover learning topics, solve problems, and provide solutions to the problems in the learning process. ICT makes knowledge acquisition more accessible, and concepts in learning areas are understood while engaging students in the application of ICT. Support student-cantered and self-directed learning Students are now more frequently engaged in the meaningful use of computers".

Chai, Koh and Tsai (2010) study on "the build new knowledge through accessing, selecting, organizing, and interpreting information and data. Based on learning through ICT, students are more capable of using information and data from various sources, and critically assessing the quality of the learning materials. Produce a creative learning environment ICT develops students' new understanding in their areas of learning".

Eng, S. T. (2005). Made a study on the impact of ICT on learning: A review of research."Since its introduction to the education arena in the 1960s, computers have both intrigued and frustrated teachers and researchers alike. The many promising prospects of computers and its applications did not materialize, and research into their effectiveness in learning has left many unanswered questions. The methods used in educational research of this nature in the past and present have evolved over the years. Quantitative studies such as meta-analyses are still widely used in the United States while recent large-scale research in United Kingdom used a combination of quantitative and qualitative methods. Findings from these research studies have indicated small positive effects and consequently a need for more in-depth and longitudinal studies into the impact of ICT on learning in the future".

Koc (2005) observed that "using ICT enables students to communicate, share, and work collaboratively anywhere and anytime".

Zhao, Y. and Frank, K. (2003). Studied on Factors affecting technology uses in schools: an ecological perspective. "Why is technology not used more in schools? Many researchers have tried to solve this persistent puzzle. The authors of this article report on their study of technology uses in 19 schools. They suggest an ecological metaphor, using the example of the introduction of the zebra mussel into the Great Lakes, to integrate and organize sets of factors that affect implementation of computer uses. Their findings suggest that an ecological perspective can provide a powerful analytical framework for understanding technology uses in schools. That perspective points out new directions for research and has significant policy and practical implications for implementing innovations in schools".

Identification of Research Gaps in present study

From the above studies, researcher has identification of research gap in existing knowledge. The current research work is different from the rest of the studies such as there is little research conducted in West Singbhum district in Jharkhand relating to attitude in ICT education among the rural and urban areas of secondary as well as higher secondary school students. Few previous researchers were emphasized age, gender, location, teaching-learning environment and strategies of Attitude of Secondary School Students towards the use of Information and Communication Technology (ICT) of rural and urban areas of West Singbhum district in Jharkhand.

Objectives of the Study

a)To study the difference in the attitude of secondary school students towards the use of Information and Communication Technology (ICT) on gender basis (male and female).

b)To study the difference in the attitude of secondary school students towards the use of Information and Communication Technology (ICT) with respect to habitat (rural and urban areas).

Hypotheses of the Study

In this study, objective wise hypotheses are

Ho1: There is no significant difference in the attitude of secondary school students towards the use of Information and Communication Technology (ICT) on gender basis (male and female).

Ho2: There is no significant difference in the attitude of secondary school students towards the use of Information and Communication Technology (ICT) with respect to habitat (rural and urban areas)

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Significance of the study

This study will be helpful to the secondary educational institutions and teachers and non-teaching staffs in developing positive attitudes of secondary school students taught by ICT.

The result of this study will also be useful as because consideration of gender-wise (male and female) and habitat-wise (rural and urban areas) difference was thoroughly analyzed.

Research Methodology of the Study

Information and Communication Technology (ICT):

It consists of three words such as information, communication and technology. Information means the nature of information covers topics such as the meaning and value of information, how information is controlled. Communication means- the electronic data, usually over a distance. Technology means- making, modification, usage and knowledge of tools, machines, techniques, crafts, systems and methods of organizations, in order to solve a problem, improve a pre-existing solution to a problem, achieve a goal, handle an applied input/output relation or perform a specific function.

Habitat

In this study rural area from West Singbhum district in Jharkhand and rural & urban area from West Singbhum district has been selected of the Jharkhand state.

Secondary School Students

Secondary school students mean classes of IX and X of both sexes of rural& urban area from West Singbhum district and rural& urban area from West Singbhum district under the Jharkhand Board of Secondary Education.

Research Design

Descriptive survey research design has been implemented in the research work.

Variables

Independent Variable :- A) Gender (Males and Females) B) Habitat (Rural and Urban areas)

Dependent Variable :- A) Attitude of ICT

Sample Size

200 Secondary school students of both sexes of rural and urban areas have been selected in the research work of the researcher as sample. All samples have been selected from West Singbhum district as rural and Urban area of Jharkhand state. The constitutions of the sample are as follows: -

Habitat Wise				Total
Rural Areas		Urban Areas		
Male	Female	Male	Female	200
50	50	50	50	

Sampling Techniques

For the Secondary school student's selection, stratified random sampling technique has been implemented in the research work.

Research Tools

A Standardized Computer Attitude Scale (CAS) (Khatoon and Sharma, 2011) has been used to collect the required information from six higher secondary Schools. Five-point Likert scale, consisting of 'strongly agree', 'agree', 'undecided', 'disagree', and 'strongly disagree' has been used. In West Singbhum district rural and urban area's students have been used for the purpose of the study.

Procedure of the data collection

The procedure of the study which has been followed by the researcher is as follows:

Step 1. At first the preparation of a questionnaire in respect of ICT in education.

Step 2. Selection of secondary educational institutions as well as selection of gender basis (male and female students) and respect to habitat (rural and urban areas) from different secondary educational institutions.

Step 3. Selection and local adaptation of tools for the study.

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Step 4. a) Primary data collected from the selected sample groups by the questionnaire.
b) Tabulation of test data to meet the requirement of hypothesis testing

Population of the study

Students' selection from six secondary school under the Jharkhand Board of Secondary Education of both sexes of rural and urban area from West Singbhum district of the Jharkhand have been implemented in the research work of the researcher.

Collection of Data

Data have been collected through data collection questionnaire from rural and urban areas in West Singbhum. as rural area and urban area have been taken into consideration.

Method of Analysis of Data

The data have been collected to suitable statistical analysis. Descriptive statistics like mean, standard deviation and inferential statistics like't' test have been implemented in the research work of the researcher.

Results

Results based on the objectives, the results of the data are demonstrated in different tables and its interpretation are given below: -

Objective 1 To study the difference in the attitude of secondary school students towards the use of Information and Communication Technology (ICT) on gender basis (male and female).

Table 1: Attitude of secondary school students towards the use of Information and Communication Technology (ICT) on gender basis (male and female).

Variable	Male (N=100)	Female(N=100)	't'- value	Sig/not sig.
Attitude of ICT	Mean=40.50 S.D.=6.15	Mean=43.88 S.D.=7.25	1.90	Not significant at 0.05 level

Table 1 illustrates that the mean, S.D. and 't' scores of the secondary school students of both males (N= 100) and females (N= 100). Though the mean score of females indicates high score (M= 43.88) than the males (M= 40.50), the 't' score (t= 1.90) with degrees of freedom is 198 clearly indicate that there is no significant difference (table value of 't' at 0.05 level is 1.96) between females and males in higher secondary Schools.. So the null hypothesis is H01 is accepted. Thus, there is no significant difference in the secondary educational institutions on gender basis. Therefore, male and females school students are equal in terms of attitude of ICT of secondary educational institutions.

Objective 2 To study the difference in the attitude of secondary school students towards the use of Information and Communication Technology (ICT) with respect to habitat (rural and urban areas).

Table 2: Attitude of secondary school students towards the use of Information and Communication Technology (ICT) with respect to habitat (rural and urban areas).

Variable	Rural (N=100)	Urban (N=100)	't'- value	Sig/not sig.
Attitude of ICT	Mean=41.35 S.D.=5.60	Mean=44.40 S.D.=6.30	1.99	Significant at 0.05 level

Table 2 illustrates that the habitat wise (rural and urban areas) differences in mean, S.D. and t-value of secondary school students of educational institutions. Though the mean score is high of urban areas than rural areas but the t-value (t=1.99) with degrees of freedom is 198 showed significant difference in secondary educational institutions the two groups (rural and urban areas). So the null hypothesis H02 is rejected. Thus, there is significant difference in the secondary school students of educational institutions in respect to habitat. Therefore, rural and urban secondary school students are not equal in terms of attitude of ICT secondary educational institutions. Urban students are more competent in terms of positive attitude while taught through the ICT method.

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Delimitation of the Study

The present study has been delimited to the following: -

The study has been delimited to two independent variables - Gender (Males and Females), Habitatတ (Rural and Urban areas) and one dependent variable - Attitude of ICT.

The study has been delimited to the higher secondary school students of different educational institutions of West Singbhum district as rural and urban area only. Sample has been also delimited to a fixed sample size of 200 (three hundred) only.

Discussion of the Study

In this study, the investigator found that there is no significant difference in the attitude of ICT in secondary educational institutions of male and female students but at last not least, The investigator found that there exists a significant difference in the attitude of ICT method In secondary educational institutions between rural and urban areas students.

Recommendations of the Study

Many positive outcomes of ICT in secondary school education and it will be compulsory in near future. Irrespective of several lacunas, there are many advantages of ICT use in secondary school education which depicts the success stories of ICT in education. Based on the findings of the study following recommendations can be suggested to improve ICT based digital learning in secondary school education

1. **Providing proper training to the teachers*:*** Subject expert teachers are getting only few days training to handle ICT in secondary schools, which is very much insufficient as reported by the teachers. Training should be provided with longer term basis with proper hands on practice.
2. **Proper use of Internet:** 'Internet in most of the secondary schools is used only for administrative purposes and not for students. Basically students who are fully dependent on schools for computer basic learning are unable to use it for their study purposes, which pushed off them behind other students who are internet savvy. Therefore, use of internet is very much necessary for the students to improve their educational as well as ICT skills'
3. **Increase the number of computers, with proper software and replace damage/ outdated models:** "Number of computers along with appropriate software in schools should be increased keeping in mind the students' strength. Also, quick repair of damaged equipment's and replacement of outdated models are extremely necessary"

Conclusion of the Study

Higher Secondary educational institutions are important actors in the society. Information and Communication Technology (ICT) into teaching and learning is a growing area and has attracted the attention of many students in current years. ICT integration in secondary education brings a change in student and teacher learning behavior and progress higher setup skills such as association beyond time and place and clarifies complicate genuine world problems. The introduction of internet and the World Wide Web has pressured new productivity as well as expectations on such endeavors. For the quality and quantity development of the higher secondary education instructors should revise their lesson plans or prepare technology suitable lesson plans and try to integrate technology into curriculum. To increase the student populations in the secondary education, role of ICT is very much important. After the analysis of the study it has found that the needs of the secondary students belonging to no different streams are not heterogeneous and their conveniences requires no changes to be made in secondary education. Communication through e-mail, messaging, text, blogs, podcasts, discussion groups and the like can lead to wider dialogues.

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