Analytical Study of Impact of ICT in Secondary School Students of Muzaffarpur District (Bihar)

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ABSTRACT

In this twenty first century, we all are living in the digital era, that has force to changed many aspects of the life we live. Now, in our educational sector we are currently using many digital tools and apps to support all students to grasp knowledge and help the teaching staff and administration to do assignments and many other task efficiently. ICT has many potential benefits in education like as, ICT is a very effective tool in presenting or representing course content in the different paths for teachers, specialists and others. It can change our teaching. Both groups (policymakers and teachers) need to understand how technology and the education system interact with each other. It does not just impart knowledge and skills, but it is also responsible for building human capital which breeds, drives and sets technological innovation and economic growth. In educational settings, this purpose will be linked to improve teaching and learning for students. In this research paper objectives is to analyze of impact of the ICT among secondary students, Compare the extent of impact of ICT among secondary students based on area, gender and type of school. Survey method was used to collect the data and the sample of the present study comprised of 100 higher secondary students falling in district of Muzaffarpur of Bihar state from which total 128 higher secondary students in urban and rural areas and total 6 government and private school were selected as a sample for the present study. Percentage analysis, Mean, Median, Standard Deviation, Skewness to study the nature of distribution of scores and t-test were used for statistical analysis and result of the study is the awareness of ICT in girls greater than the boys in secondary school and the readiness of Using ICT tools in the student in 69% that show the positive impact of ICT in student. The Educational authorities should take effort towards all these type of problem so that the students get trained to improve their ICT Awareness.

Keyword: ICT, secondary school students

INTRODUCTION

In this twenty first century, we all are living in the digital era, that has force to changed many aspects of the life we live. To develop information communication technological tools, digital gadgets and apps changed our learning, marketing, business, medical and many other sectors. All tools are used in worldwide to help people. Now, in our educational sector we are currently using many digital tools and apps to support all students to grasp knowledge and help the teaching staff and administration to do assignments and many other task efficiently(O'Sullivan,2014). Technology is new eyes of our education sector and is giving new opportunities to dropouts students. ICTis gradually changing the teaching pedagogy. Meanwhile, face to face classroom interaction is getting replaced by online interaction, traditional white and blackboard is getting replaced by AI Whiteboard, printed material and books are getting replace by online resources. Everyone believes that technological access, skills and administration are important factors for prosperity and development of developed country. This makes every developing country see and learn what the developed nation do with their technology. ICT has many potential benefits in education like as, ICT is a very effective tool in presenting or representing course content in the different paths for teachers, specialists and others. It can change our teaching. Now we can present our topics through different techniques such as HD images GiF, multimedia audios, videos, texts, games, and graph, cards which can make our classroom more reflective, interesting and lively. Therefore digital tools also play crucial roles to instruct the learners such as make the learner feel more free to grasp the information and also make the learner more creative and active because learner learn how to use technology in their tasks instead of directly instructed by the technology (grabe & grabe, 2005).

Many researchers address the issue of ICTs integration in higher education and suggest that policymakers and teachers can play an important part in this dimension (Vajargah and Jahani, 2010 and Erkunt, 2010). Both groups (policymakers and

teachers) need to understand how technology and the education system interact with each other. The integration of ICTs in higher education brings many opportunities and also found more challenges; that is why it is very important before implementing the use of ICTs to make sure that suitable levels of investment is in place, adequate training, good policy, careful planning, restructuring the teaching process, and a systematic approach are also require when integrating ICTs in education in order to achieve maximum educational benefits. It is also vital to think carefully about purpose of education or the context in which the ICTs can be used before implementation. In our previous work we defined education as an engine for the development and improvement of any society. It does not just impart knowledge and skills, but it is also responsible for building human capital which breeds, drives and sets technological innovation and economic growth (Mbodila and Kikunga, 2012). From the above explanation we can say that ICTs are simply tools that help us achieve a purpose of education. In educational settings, this purpose will be linked to improve teaching and learning for students. ICTs do not improve student's learning opportunities themselves; but educators who use ICTs thoughtfully do. Kirkup and Kirkwood (2005) and Wagner (2001), argue that it is the contextualized teaching and learning needs that ought to drive the ICTs intervention, rather than the technology itself.

REVIEW OF RELATED LITERATURE

There have been several research done in the areas of ICT in Education. All the research focused towards effective learning. It had been shown that all ICT tools and gadgets in teaching learning process always helps in improving and managing effectively the learning activities of the students and teachers **(Malero & all,2015).** ICT is also focusing in the area of, school administration management and increased performance of students, teachers and other staff. If the entire school environment and infrastructure are implementation of ICT integration and all the teaching staff are well trained, to help students in their curricular and co-curricular activities using ICT, it is tire that learning experience of all students become enriched. The term "integration" is the meaning of "use". However, ICT integration in educational system is effectively performed in pedagogical Approach in order to make ICT more central to teaching-learning **(Lloyd, 2005).** This implies that only installing ICT tools in classrooms does not ensure ICT integration but the effective use of ICT which brings positive changes in traditional teaching-learning approaches will ensure effective ICT integration. In addition, successful integration of ICT facilitates innovative culture, student-centered pedagogical goals and collective learning **(Lloyd, 2005).**

In the New Education policy also focused that ICT enhance effective deliver of Education. It is useful for all the Educational field. Policy maker focused upon ICT integration, Online and offline classes, digital environment, and smart classes in the new Education policy. However, lack of digital programes for training teachers on different ICT tools and technologies was one of the crucial reason to the implementation of ICT in Secondary Schools. The New Education policy aims to improve the quality of delivering learning Materials andteacher training in all areas including distance learning. In the present scenario,both students and teachers need to adapt the Technology **(Jones and Preece,2006).**ICT has been played major role in the learning. Through learning ICT skills, students are ready to face future challenges based on proper understanding **(Grimus, 2000). Grabe and Grabe (2007)** suggested, school infrastructure and society has positive impact on the learner. **Bransford, Brown, and Cocking (2000)** believe that Using ICT help students competencies in the current scenario.This is because ICT can help students to develop their skills, boost up their motivation and widen their knowledge and information **(Grabe & Grabe, 2007; Azhar et al., 2011).**

Need and Significance of the Study
Nowadays, we live in digital era. We have smartphones, smart devices, laptop, online software, and teaching gadgets to support learning. All of that ICT tool improveteaching and learning process. Teacher is a vital player to improve knowledge awareness. Moreover, now the one of the crucial need to Learners and teachers are awareness and readiness of using ICT tools and gadgets. The study had major purposed: to determine how students integrate ICT in learning effectively and how much awareness they have about ICTand on the other hand to find out the impact of ICT in Secondary schoolstudents. These Technologies become more integrated in daily lives during work and study so understanding students and awareness of ICT should provide improved performance of currently developing Technologies.

Research Objective

1) To analyze ofimpact of the ICT among secondary students.
2) Compare the extent of impact of ICT among secondary students based on

   a. Area (Urban/Rural)
   b. Gender (Boys/Girls)
   c. Type of School (Government/Private)

Research Hypothesis
1. There is no significant difference in the ICT integration among higher secondary students based on

    a.   Area (Urban/Rural)
    b.   Gender (Boys/Girls)
    c.   type of School (Government/Private)

Methodology
Survey method was used to collect the data. According to our research objective, a total number of 128 higher secondary students (selected only 100 respondent) from various types of government and private higher secondary school of Muzaffarpur district in Bihar was selected using stratified random sampling technique. There are 30 multiple choice test item in the tool which are using in the collection of the data. The test measure the ICT Integration of higher Secondary students,developed by the investigators.

Population of the Study
All Higher secondary students of Urban and rural areas studying in Government and private School of Varanasi District comprised the population of the study.

Sample of the Study
The sample of the present study comprised of 100 higher secondary students falling in district of Muzaffarpur of Bihar state from which total 128 higher secondary students in urban and rural areas and total 6 government and private school were selected as a sample for the present study.

Tools of Data Collection
In the present study the following tool was used self-made'ICT Impact of ICTin secondary students.

Reliability and Validity ofTool
In the present study split half reliability techniques is used in the tool. The reliability of the tool was 0.80. The reliability of the tool was 0.80 using face and expert validity in this tool.

Statistical Techniques
The following statistical techniques were used in the study:

❖   Percentage analysis, Mean, Median, Standard Deviation, Skewness to study the nature of distribution of scores.
❖   t- Value to investigate the significance of difference between various groups.

Finding and Analysis
➤   **Demographic Analysis of the Study**

| S.No.	Gender		Area		School	
Distribution	Girls	Boys	Rural	Urban	Private	Government
Number of students	51	49	40	60	50	50
Percentage	51	49	40	60	50	50
Total number of students	100		100		100	

In this study the total number of respondent were 100. Whereas 51 girls and 49 boys were allottedin 6 Government and Private School.

➢ **Deviceusing by the Students**
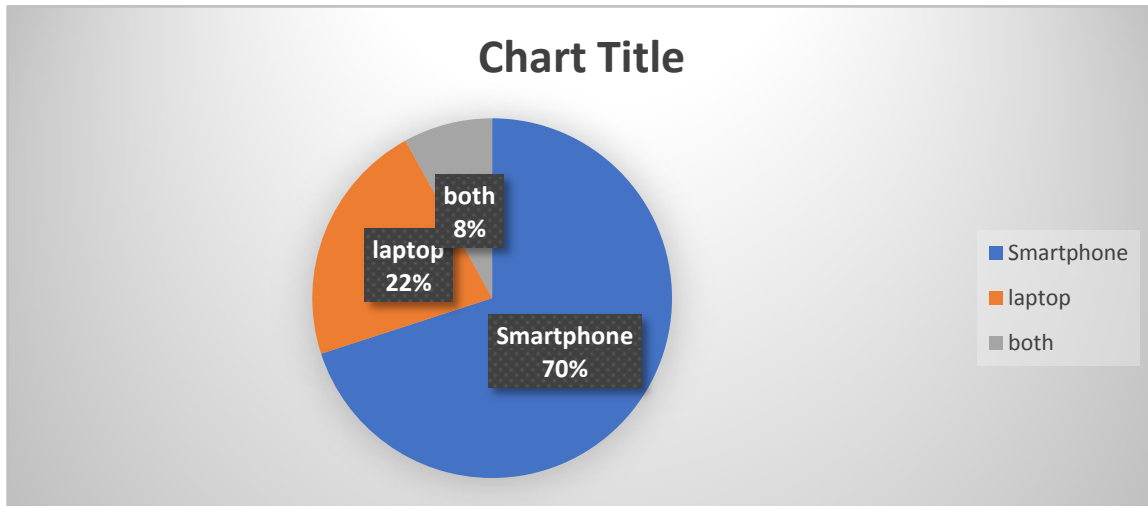
In this Study the data of using devices by the higher secondary student can be inferred to 70% of student have smartphone, 22% of students have laptop, and only 8% of the students use both devices in the study. This data presented the Facilitating Condition of the ICT Devices but all that facilitating Conditions not much positive impact of ICT awareness of the higher secondary student.

➢ **Readiness of Using ICT Tool**
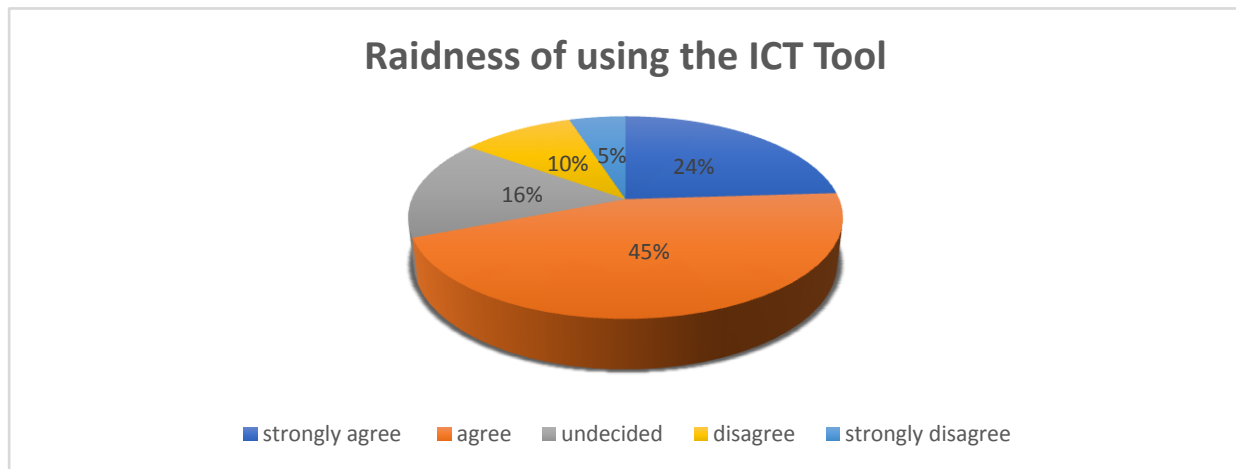
In this Study the data of Readiness of using the ICT tool by the higher secondary student can be inferred to 24%of student strongly agree, 45% of the students agree, 16% of the students undecided, andonly 10% decided,5% student disagree and strongly disagree. This data shown that, more than 69% of higher secondary studentready to using ICT tool in their learning.

➢ **Impact of ICT in Secondary School Students'.**
As a step of analysis mean, median, standard deviation and skewness were calculated for the total sample and sub samples. The results are presented in Table 2.

Table 2:

S.No.	Group	Mean	Median	Standard Deviation	Skewness	Total Number
I.	Boys	14.416	14	7.160	0.161	49
II.	Girls	16.941	17	6.287	0.213	51
III.	Urban	16.642	17	6.570	0.026	50
IV.	Rural	14.901	15	7.197	0.205	50

V.	Government School	15.243	16	7.576	0.077	50
VI.	Private School	16.262	16.50	6.454	0.125	50

In this Study the maximum possible score on the research test is 30 and minimum is 0. It can be inferred from the Table -2 that higher secondary students are having moderate Impact of ICT. Their score of mean on the test is 15.68 which is slightly above 50% of the maximum possible score. The mean scores of impact of ICT of the subsample, the maximum possible score on the test is 30 and minimum is 0 on the above Table2 that higher secondary students are having moderate ICT awareness. Their mean score on the test is 15.27 which is slightly above 50% of the maximum possible score. The mean scores of impact of ICT of the sub samples based on Gender and subject are slightly high values indicating the sub Samples are also having moderate ICT awareness. Median scores also indicate that higher secondary students are having moderate ICT awareness. The distribution is positively skewed indicating that most of the students have scored less than the mean score.

➢ **Comparison of the ICT Awareness among Secondary School Students based on Gender**

This section of analysis is based on the objective to compare the extent of ICT awarenessamong secondary students based on gender. To study whether no significant difference exist in mean scores of impact of ICT between two categories, the data was analyzed by test of significance for difference.

Table 3

Sample	Number	Mean	S.D.	Difference	SE $_D$	t value	Significance level
Girls	51	16.941	6.287				
				2.525	1.34	1.88	0.01
Boys	49	14.416	7.160				
Result	Null hypothesis Accepted on the significance level of 0.01. Research Hypothesis not Accepted on the significance level of 0.01						

**P<0.01

This means that even though both boys and girls have moderate ICT Awareness, secondary school boys possess relatively equal ICT awarenessthan secondary school girls. The hypothesis, there is no significant difference in the impact of ICT among secondary students based on gender is therefore Accepted.

Area

This section of analysis is based on the objective to compare the extent of ICT impact among secondary students based on Area. To study whether no significant difference between mean scores of impact between two categories, the data was analyzed by t-test on 0.01 significance level.

Table 4

Sample	Number	Mean	S.D.	Difference	SE $_D$	t value	Significance level
Urban	50	16.642	6.570				
				1.741	1.37	1.27	0.01
Rural	50	14.901	7.197				
Result	Null hypothesis Accepted on the significance level of 0.01. Research Hypothesis not Accepted on the significance level of 0.01						

The critical ratio for the sub samples urban and rural is 1.27 which is less than the table value 2.58 at 0.01 level. This reveals that there is a no significant difference in the impact of ICT Mean scores of secondary school boys and girls.

Type of School

This section of analysis is based on the objective to compare the extent of ICT impact among secondary students based on Type of School. To study whether no significant difference between mean scores of impact of ICT between two categories, the data was analyzed by t-test on 0.01 significance level.

Table 5

Sample	Number	Mean	S.D.	Difference	SE $_D$	t value	Significance level
Government School	50	15.243	7.576	1.019	1.980	0.72	0.01
Private School	50	16.262	6.454				
Result	Null hypothesis Accepted on the significance level of 0.01. Research Hypothesis not Accepted on the significance level of 0.01						

The critical ratio for the sub samples government School group students and private School group students is 0.72 which is not significant at 0.01 level since it is less than the table value 2.58 at 0.01 level. This means that both government group students and private group students are having the same level of impact of ICT. Therefore the hypothesis there is no significant difference in the impact of ICT among secondary students Based on their type of School of study is accepted.

Conclusion of the Study
Based on the findings above, we can conclude thatImpact of ICT in secondary school students in Muzaffarpur district are following:

- ❖ The awareness of ICT in girls greater than the boys in secondary school.
- ❖ The moderate level of impact of ICT in students who live in rural and urban area.
- ❖ The readiness of Using ICT tools in the student in 69% that show the positive impact of ICT in student.

Educational Implications of the Study
The present study reveals that secondary students are having moderate level of ICT awareness. That means all facilitating condition given by family and school administration geared towards integration of ICT into the School and Social system, have not much impact, but impact positively. In this Study there are several problems such as diversity of student population, poor maintenance, culture, teachers and guardian awareness, time constraintsetc. that militate against these efforts. The Educational authorities should take effort towards all these type of problem so that the students get trained to improve their ICT Awareness. Teacher also trained and well knowing about ICT tools. And should give more importance to the practical knowledge in it. Students and teacher also should have more competence of ICT and implemented across the curriculum in order to ensure the full integration and use of ICT in teacher training and teaching curriculum. Government play major role in ICT Integration in Secondary and higher secondary level. They provide teacher's training to improve skill in ICT to each Government and Private School. Using ICT in their teaching are positive impact of the learner and improve Awareness, Readiness. Awareness programs should be conducted for the parents about the importance and knowledge of ICT skill so that they also motivate and help their children to get ICT awareness.

Suggestions for further Study
- This research was designed on secondary school students. A study on Different age group can be suggested to prepare, in order to see whether impact of ICT has same effect on them or not.
- As the sample size, this study was limited to only 100secondary learner, so it is recommended that the sample size in the future studies should be increased in order to have more statistical power.
- This research was designed on secondary school students. A study on Different subject group can be suggested to prepare, in order to see whether impact of ICT has same effect on them or not.

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