

# Knowledge of Information and Communication Technology and Academic Performance of Secondary Students: A Comparative Study

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## ABSTRACT

In this study it is aimed to compare the level of Knowledge of ICT and Academic Performance of students of G.S.E.B and C.B.S.E boards. The study was investigated on secondary school students of G.S.E.B and C.B.S.E boards. Descriptive method has been used for the study and students of IX and X standard were selected randomly for the collection of the data. Five point rating scale tool was constructed by researcher having 120 statements. Data was analyzed by using t- test. The investigator finds the fact there is significance difference in the level of Knowledge and Academic Performance of G.S.E.B and C.B.S.E school students; it is higher in C.B.S.E school students than G.S.E.B school students.

**Keywords:** *Knowledge, ICT and Academic Performance*

Information and communication technology is an increasingly influential factor in education. Computers and mobile phones are used in developed countries both to complement established education practices and develop new ways of learning such as online education (a type of distance education). This gives students the opportunity to choose what they are interested in learning. The proliferation of computers also means the increase of programming and blogging. Technology offers powerful learning tools that demand new skills and understandings of students, including Multimedia, and provides new ways to engage students, such as Virtual learning environments. Technology is being used more not only in administrative duties in education but also in the instruction of students. The use of technologies such as PowerPoint and interactive whiteboard is capturing the attention of students in the classroom. Technology is also being used in the assessment of students. One example is the Audience Response System (ARS), which allows immediate feedback tests and classroom discussions.

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“Information and communication Technologies (ICTs) are a “diverse set of tools and resources used to communicate, create, disseminate, store, and manage information.” These technologies include computers, the Internet, broadcasting technologies (radio and television), and telephony.” There is increasing interest in how computers and the Internet can improve education at all levels, in both formal and non-formal settings. Older ICT technologies, such as radio and television, have for over forty years been used for open and distance learning, although print remains the cheapest, most accessible and therefore most dominant delivery mechanism in both developed and developing countries. The purpose of ICT in education is generally to familiarize students with the use and workings of computers, and related social and ethical issues. ICT has also enabled learning through multiple intelligence as ICT has introduced learning through simulation games; this enables active learning through all senses.

### **REVIEW OF RELATED LITERATURE**

Rajender Kumar (2007) tried to find out the best instructional method out of three i.e. Conventional Instructional Systems (CIS), Audio-video Instructional System (AVIS) Multimedia Instructional System (MIS) for teaching Information Technology at the secondary level. Four tools were used in this study out of which except for Intelligence test all other tools were developed by researcher. It was found that MIS is the best method, AVIS is the second best and CIS is the third best method for taking Information Technology at secondary level. Siddiqui M.A., Abraham Jessy and Khan Mohsin Ali (2009) intended to study the availability and use of Information and Communication Technology (ICT) in schools in Delhi. The major findings were availability of software and hardware facilities was not very good, there should be more software for teaching purposes and there should be more periods allocated for computers at all levels. Vellaisamy, M. (2007) studied the effectiveness of multimedia on the achievement of pupils in science at VIII standard. For this purpose, sample of 520 pupils was drawn from VIII standard of 13 schools of Nagapattinam block. The pre-test and post-test were used to arrive following conclusion. The pupils of the experimental group achieved more than the pupils of control group in science at upper primary level. This is due to the favourable impact of the multimedia approach. Ton, Mooij, Ed Smeets. (2000) studied the use of Information and Communication Technology (ICT) in education. Finally, educational and policy support actions to the ICT transformation process in school are presented in a structured way. The results are worthwhile for school practice and national policies, but they also need further underpinning and validation through research in other schools. Allan H.K, Yuen, Nancy law, Wong K.C. (2003) studied about ICT implementation and school leadership: case studies of ICT integration in teaching and learning. The study shows that the strategy adopted by a school in instituting such change and the resulting variation of pedagogical practices using ICT is strongly dependent on the school leaders' vision and understanding of the role and impact of ICT in the curriculum, their goals and objectives for ICT integration, as well as the history, culture and background of the school and its general vision and mission. Pearson, Matthew, Somekh, B. (2004). Tried to use Concept-

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Current approaches to ICT use in primary schools, involving explicit, systematic teaching of ICT skills, may therefore not be making the most cost-effective use of scarce resources. Exploratory use of ICT within open-ended project work, reflecting the kind of use that computer-literate adults make of ICT, might be more likely to provide the context for children's rapid development of a complex range of ICT skills. Torgerson, C. and Zhu, D. (2003). A systematic review and meta-analysis of the effectiveness of ICT on literacy learning in English, 5-16. More specifically, the review indicated that whilst there is not enough evidence about the benefits of ICT on literacy outcomes, there is also not enough evidence about its potential harmful effects on literacy development. The authors conclude that large robust trials need to be conducted to confirm the benefits of ICT on literacy. Otherwise, the continued high investment in ICT may be a waste of money.

### ***Need And Significance Of The Study***

Information and communication technology (ICT) has become, within a very short time, one of the basic building blocks of modern society. So it is very necessary to conduct such type of research which will give clear idea of Knowledge of ICT of secondary students and its impact on their Academic performance. According to the Researcher the study would be significant as follows: It would provide an idea to secondary teachers what is the level of Knowledge of Information and Communication Technology and Academic Performance of Secondary students and what they can do for Knowledge of ICT among secondary students to increase their academic performance.

### ***Statement Of The Problem***

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### ***Definitions of Variables:***

**Information and Communication Technology:** Information and Communication Technology which consists of electronic devices and associated human interactive materials that enable the user to employ them for wide range of teaching-learning processes in addition to personal use.

**Knowledge:** Knowledge is a term referring to the ability to recognize, to feel, or to be conscious of events, objects or patterns.

**Academic Performance:** Academic performance refers to how students deal with their studies and how they cope with or accomplish different tasks given to them by their teachers.

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### ***Objectives Of The Study***

1. To study the level of Knowledge of Information and Communication Technology of G.S.E.B and C.B.S.E Secondary school students.
2. To study the level of Academic Performance of Information and Communication Technology of G.S.E.B and C.B.S.E Secondary school students.
3. To compare Knowledge of Information and Communication Technology of G.S.E.B and C.B.S.E Secondary school students.
4. To compare Academic Performance of Information and Communication Technology of G.S.E.B and C.B.S.E Secondary school students..

### ***Hypothesis***

1. There is no significant difference in the Knowledge level of Information and Communication Technology of G.S.E.B. and C.B.S.E Secondary school students.
2. There is no significant difference in Knowledge Performance of Information and Communication Technology of G.S.E.BS and C.B.S.E Secondary school students.

## **METHODOLOGY**

The present study is descriptive method of the comparative type. It aims at studying and describing the level of ICT Knowledge and Academic Performance of ICT of G.S.E.B and C.B.S.E Secondary school students. The standard IX and X secondary school students have been considered for the present investigation.

### ***Sample***

For the present study 70 secondary school students studying in English medium schools were selected. Students studying in Standard IX and X of G.S.E.B, and C.B.S.E Board were included. These students were selected randomly from the schools Ahmadabad and Gandhinagar.

### ***Tool of Research***

In order to study the variables – Knowledge of ICT and Academic Performance of ICT tool was constructed by the researcher. In the tool five aspects were taken 1) Knowledge about Computer 2) Knowledge about Internet 3) Knowledge about Broadcasting Technology (Radio and Television) 4) ICT Knowledge (Overall) 5) Knowledge Performance of students of ICT.120 statements are divided into above five areas. It is five point rating scale having options strongly disagree, Disagree, Neutral, Agree, Strongly Agree.

### ***Data Analysis***

For the inferential Analysis the hypotheses was analyzed using the appropriate statistical technique like t-test. To compare the Knowledge and academic performance of G.S.E.B and C.B.S.E board Students t-test was applied.

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**Table 1 – Mean SD and t-value of Knowledge about Computer**

School	N	Mean	S D	t-value	Remark
G.S.E.B	40	15.87	3.870	0.147	NS
C.B.S.E	30	16.05	4.590		

Hypothesis is accepted, there is no significant difference in Knowledge about Computer in G.S.E.B and C.B.S.E school students.

**Table 2 - Mean, SD and t-value of Knowledge about Internet**

School	N	Mean	S D	t-value	Remark
G.S.E.B	40	15.86	4.437	3.45	S
C.B.S.E	30	16.45	3.945		

Significant at 0.05 level

Hypothesis is rejected; there is significant difference in Knowledge about Internet in G.S.E.B and C.B.S.E school students.

**Table 3 – Mean, SD and t-value of Knowledge about Broadcasting Technology (Radio and Television)**

School	N	Mean	S D	t-value	Remark
G.S.E.B	40	71.67	4.511	1.624	NS
C.B.S.E	30	69.48	4.088		

Hypothesis is accepted, There is no significant difference in Knowledge about Broadcasting Technology (Radio and Television) in G.S.E.B and C.B.S.E school students.

**Table 4 – Mean, SD and t-value of ICT Knowledge (Overall)**

School	N	Mean	S D	t-value	Remark
G.S.E.B	40	17.67	3.860	3.147	S
C.B.S.E	30	16.85	4.690		

Significant at 0.05 level

Hypothesis is rejected; there is significant difference in ICT Knowledge (Overall) in G.S.E.B and C.B.S.E school students.

**Table 5 – Mean, SD and t-value of Academic Performance**

School	N	Mean	S D	t-value	Remark
G.S.E.B	40	68.55	3.871	3.984	S
C.B.S.E	30	73.10	3.691		

Significant at 0.05 level

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Hypothesis is rejected, There is significant difference in Academic Performance in G.S.E.B and C.B.S.E school students.

### ***Scope and Delimitations of Study:***

The present study covers students studying in Std IX and X only, in the schools (aided and unaided) of Ahmadabad and Gandhinagar. The present study includes students studying in the G.S.E.B and C.B.S.E Boards only. The sample for the study comprise of students with English as their medium of instruction and not any other medium. The present study studies all the variables with respect to the students and not their teachers or peers.

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## **DISCUSSION**

The ICT facilities provided to the C.B.S.E school students are more as compared to G.S.E.B board school students. The level of Knowledge and academic performance of C.B.S.E students is higher than G.S.E.B board school students, In C.B.S.E schools ICT is taught from first grade as it is not in G.S.E.B schools and there is lack of trained ICT teachers also.

## **FINDINGS**

1. It is found from the study that 62% secondary students have desirable level of Knowledge of Information and Communication Technology.
2. It is found from the study that 78% secondary students have desirable level of Academic Performance.
3. It is found from the study that use of Internet by C.B.S.E students is more (65%) than the use by G.S.E.B (35%) board students.
4. There is significant difference in Knowledge of ICT and Academic Performance of Secondary students with respect to school types.

## **CONCLUSION**

There is significant difference between the G.S.E.B and C.B.S.E school student's Academic performance and level of Knowledge of ICT. It proves that type of institution influences on Academic performance of secondary students. Therefore schools should provide ICT facilities to students irrespective of school type.

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### ***Conflict of Interests***

The author declared no conflict of interests.

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