



AWARENESS OF ICT IN RELATION TO ACADEMIC ACHIEVEMENT AMONG SECONDARY SCHOOL STUDENTS

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ABSTRACT

The study was conducted to find out the level of awareness among secondary school students with respect to gender, locale, medium of instruction and type of management. Survey method of research has been used in the present study. To find out the ICT awareness among secondary students, the Researcher was adapted Awareness towards ICT Scale developed and standardized by P.Pachaiyappan (2015). The researcher randomly selected 270 secondary school students in and around Chennai of Tamilnadu. The data was analyzed using mean, standard deviation and 't'- test and ANOVA. The study results reveal that there is no significant difference between the male and female secondary school students with respect to ICT awareness. Urban school students have more awareness towards ICT compared to rural school students. The results reveal that there is no significant difference between the Tamil and English medium secondary school students with respect to ICT awareness. It was found that the government and private school students have more ICT awareness compared to their counterparts. It was found that there is no significant difference between the male and female secondary school students with respect to Academic Achievement. Urban school students have higher Academic Achievement compared to rural school students. The results reveal that there is no significant difference between the Tamil and English medium secondary school students with respect to Academic Achievement. It was found that there is no significant difference among the types of management of secondary school students with respect to Academic Achievement. The study explored that there is a positive correlation between Awareness of ICT and Academic Achievement of secondary school students.

KEYWORDS : : ICT Awareness, Secondary Students, Academic Achievement, Educational Radio, Educational Television, World Wide Web, Social Networks

Introduction

The role of science and technology has always been phenomenal in moulding the society throughout the human history. Today, modern science and advanced technology are responsible for changing the nation's economy and life styles of the people in the society. Information and Communication Technology offers the means to enrich the latest information to the large numbers in remote and inaccessible areas removes disparity and educational facilities to the disadvantaged and provide individualized instruction to the learners suited to their needs and pace of learning. It is necessary for the teachers to know the role of modern information and communication technologies like internet, teleconferencing, video conferencing, interactive video, edusat, e-learning, multimedia, online teaching and web-based technologies, etc. in the classroom instruction.

In the present study the ICT awareness was assessed on following components such as knowledge about computer, Internet, Electronic Mail (E-mail), World Wide Web (WWW), Broadcasting Technology (Radio and Television), associated human interactive materials that enable the secondary students to employ them for wide range of learning processes in addition to personal use, overall ICT. As the number of scientists has grown, cooperation and communication among them have become increasingly important. Many recent achievements have resulted from scientists working in research teams. Hundreds of scientific journals, professional societies, and computerized information systems make it possible for scientists throughout the world to exchange information quickly and easily. Increasingly powerful and advanced equipment is helping scientists in many different fields expand knowledge about the world. Nowadays, learning of Science becomes very important and learning Science in a more interactive way through the usage of communication technology is highly encouraged.

Review of Related Literature

Choukhande and Kumar (2004) have studied the information needs and use pattern in their paper titled "Analytical Study of Information Needs and Use Pattern of Faculty Members and Research Scholars of Amravati University". They used a questionnaire method with random sampling technique to collect the data. Some of the findings are: users face difficulty in searching information through electronic sources, and they need skill to use the available sources in the library. Swamy, A.M.Ajantha (2010) studied Internet Awareness and Competence among High School Students and Teachers. Findings of the study were as follows:- In this study, the sample comprised of 100 high school students and 40 teachers taken from 5 talukas of Bijapur district of

Karnataka. The tools used were Test of Internet Awareness and Test of Competence to use Internet. The researchers used mean, SD and t-test for the analysis of scores obtained. It was found that the training program is able to create awareness regarding, internet competence in high school students. Further, the program has incidentally enhanced the Interest Awareness and Competence of teachers who were associated with the project. Ali and Awan (2013) examined the relationship of attitude of secondary school students towards Science with the achievement in the subjects of Physics, Chemistry, Biology and Mathematics. TOSRA was used to measure students' attitude towards Science and data was collected from 1,885 students of 10th grade. Simple correlation (r), Multiple regression analyses (R) and standardized regression coefficients (β) were used to investigate the relationships between attitude towards Science and achievement in Science. The results of the study indicated that attitude towards Science had significantly positive relationship with the achievement of Science students at secondary level.

Need and Significance of the Study

Information and Communication technology is highly needed for the effective realization of the goals in education. ICT emphasizes the designing and measuring the instruments for testing and learning outcomes and stresses on the development of methods and techniques for effective learning. ICT facilitates learning by controlling the environment media and methods. There is a great need for educational technology in the developing countries like India, as it makes education more productive, relating to the individual, providing instruction on more scientific basis. Moreover educational technology makes learning more powerful and more lasting, making up the cultural handicaps of certain categories of pupils and for extending educational services in the remote areas.

ICT is very much needed for our Indian classroom conditions, as it is concerned with the problems of education and training and it's characterized by a discipline and systematic approach to the organization of resources for learning. Further Information and Communication Technology could be helpful in educational innovation by considering new systems and materials along with inventing instruments and finding procedures. Because all of the above reasons, there is a great need for introducing ICT in the teaching learning process. Therefore the secondary students well aware of ICT plays vital role for effectively and efficiently use of education technology in classroom instruction and learning. The study results reveal that the secondary students effectively use ICT in their learning then only science achievement level progressively increased. Hence

the present study seems necessary.

Objectives of the Study

- To analyze the awareness of ICT among the secondary school students with respect to
 - Gender
 - Locality
 - Medium of Instruction
 - Type of Management
 - To find out the Academic Achievement among the secondary school students with respect to
 - Gender
 - Locality
 - Medium of Instruction
 - Type of Management
 - To find out the relationship between Awareness of ICT and Academic Achievement.
- Hypotheses of the Study
- There is no significant difference in the awareness of ICT among the secondary school students with respect to
 - Gender
 - Locality
 - Medium of Instruction
 - Type of Management
 - There is no significant difference in the Academic Achievement among the secondary school students with respect to
 - Gender
 - Locality
 - Medium of Instruction
 - Type of Management
 - There is no significant relationship between Awareness of ICT and Academic Achievement.

Method of the Study

The investigator has adopted the survey method for investigation of the problem. This helps to find out the real conditions, which are prevailing in the secondary schools.

Tools Used

1. Personal data sheet developed by the investigator.
2. Awareness towards ICT Scale developed and standardized by P.Pachaiyappan (2015).
3. In the present study the secondary students' half yearly marks in science is considered as Achievement in Science.

Reliability and Validity

The reliability of the Awareness towards ICT Scale was found to be 0.86 by split-half method and 0.75 in the test-retest method. The developed tools were given to the experts in the field of Education, Educational Technology and Educational Research. Suggestions given by them were incorporated and some of the items were restricted and rewarded. The finalized questionnaire was subjected to another review by the same experts. Thus face validity and content validity of questionnaire was established.

Sample

Random Sampling technique is used for selecting the sample. The sample consists of 270 secondary school students in Government, Government aided and Private schools in Kazhchipuram and Thiruvallur Districts of Tamilnadu.

Statistical Technique Used

For analyzing the data percentage, mean, standard deviation, 't'-test and one way ANOVA are used.

Data Analysis and Interpretation

Table 1: ICT Awareness among secondary school students with respect to Gender

Gender	N	Mean	Std. Deviation	t-value	Level of
Male	149	226.248	6.5759	1.008	NS
Female	121	225.175	10.7451		

From the above table, the calculated 't' value is 1.008 less than the table value (1.96). It is found that there is no significant difference between the male and female secondary school students with respect to ICT awareness. Hence the null hypothesis Ho1 is accepted.

Table 2: ICT Awareness among secondary school students with respect to Locality

Locality	N	Mean	Std. Deviation	t-value	Level of Significance
Rural	152	224.874	7.1016	2.326	0.05
Urban	118	227.436	10.8950		

From the above table, the calculated 't' value is 2.326 greater than the table value (1.96). It is found that there is a significant difference between the Rural and Urban area secondary school students with respect to ICT awareness. Hence the null hypothesis Ho4 is rejected.

Table 3: ICT Awareness among secondary school students with respect to Medium of Instruction

Medium of Instruction	N	Mean	Std. Deviation	t-value	Level of Significance
Tamil	162	225.882	7.7576	0.259	NS
English	108	225.602	9.9447		

From the above table, the calculated 't' value is 0.259 less than the table value (1.96). It is found that there is no significant difference between the Tamil and English medium secondary school students with respect to ICT awareness. Hence the null hypothesis Ho2 is accepted.

Table 4: ICT Awareness among secondary school students with respect to Type of Management

Type of Management	N	Mean	Std. Deviation	F-value	Level of Significance
Government	71	229.367b	8.5907	44.142	0.01
Government Aided	89	217.797a	7.1505		
Private	110	227.191b	7.0472		

From the above table, the calculated 'F' value is 44.142 greater than the table value. It is found that there is a significant difference among the Type of management of secondary school students with respect to ICT awareness. It was found that the government and private school students have more ICT awareness compared to their counterparts. Hence the null hypothesis Ho5 is rejected.

Table 5: Academic Achievement among secondary school students with respect to Gender

Gender	N	Mean	Std. Deviation	t-value	Level of Significance
Male	149	62.034	16.8256	0.292	NS
Female	121	61.433	16.7341		

From the above table, the calculated 't' value is 0.292 less than the table value (1.96). It is found that there is no significant difference between the male and female secondary school students with respect to Academic Achievement. Hence the null hypothesis Ho6 is accepted.

Table 6: Academic Achievement among secondary school students with respect to Locality

Locality	N	Mean	Std. Deviation	t-value	Level of
Rural	152	63.611	17.2289	2.489	0.01
Urban	118	58.330	15.3423		

From the above table, the calculated 't' value is 2.489 greater than the table value (1.96). It is found that there is a significant difference between the Rural and Urban area secondary school students with respect to Academic Achievement. Hence the null hypothesis Ho7 is rejected.

Table 7: Academic Achievement among secondary school students with respect to Medium of Instruction

Medium of	N	Mean	Std. Deviation	t-value	Level of
Tamil	162	62.963	16.5582	1.433	NS
English	108	59.981	16.9672		

From the above table, the calculated 't' value is 1.433 less than the table value (1.96). It is found that there is no significant difference between the Tamil and English medium secondary school students with respect to Academic Achievement. Hence the null hypothesis Ho8 is accepted.

Table 8: Academic Achievement among secondary school students with respect to Type of Management

Type of Management	N	Mean	Std. Deviation	F-value	Level of Significance
Govt	71	65.017	13.9908	1.929	NS
Govt. Aided	89	61.896	17.4935		
Private	110	59.589	17.2377		

From the above table, the calculated 'F' value is 1.929 less than the table value (1.96). It is found that there is no significant difference among type of management of secondary school students with respect to Academic Achievement. Hence the null hypothesis Ho2 is accepted.

Table 9: Relationship between ICT Awareness and Academic Achievement among secondary school students

Variables	r-value	Correlation
Academic Achievement Vs Awareness of ICT	0.679	S

From the above table it is inferred that there is a positive correlation between Awareness of ICT and Academic Achievement of secondary school students. Hence the null hypothesis is rejected.

Major Findings of the Study

- It was found that there is no significant difference between the male and female secondary school students with respect to ICT awareness.
- Urban school students have more awareness towards ICT compared to rural school students.
- The results reveal that there is no significant difference between the Tamil and English medium secondary school students with respect to ICT awareness.
- It was found that the government and private school students have more ICT awareness compared to their counterparts.
- It was found that there is no significant difference between the male and female secondary school students with respect to Academic Achievement.
- Urban school students have higher Academic Achievement compared to rural school students.
- The results reveal that there is no significant difference between the Tamil and English medium secondary school students with respect to Academic Achievement.
- It was found that there is no significant difference among the types of management of secondary school students with respect to Academic Achievement.
- The study explored that there is a positive correlation between Awareness of ICT and Academic Achievement of secondary school students.

Educational Implications

Technology a key role in determining not only how but how well technologies are used in classroom and thus the extent to which technologies improves student performance. Teachers understand and support the importance of students learning to use ICT as an important component of their preparation for further education, work, and life in general. Teachers learn and use effective ways to integrate technology into their curriculum and use of technology in ways that enhance opportunities and success for all students. Teachers understand and instill into Socio, ethical, legal and human issues surrounding the use of technology. The administrators, policy makers and the school education authorities should organize the educational technology related workshops, conferences, seminar and training programmes for

school teachers and students this will definitely enhance ICT awareness and academic achievement of school students.

Conclusion

In the 21st century knowledge era, there is lot of technologies has developed. Technology has revolutionized the way we work and is now set to transform education. It has the potential to promote equity and access to education and bridge the gap of digital divide. The teachers and students have to be trained in order to enable them to take full advantages of the potential technology. Development of any nation is a measure of her development in the area of Science and Technology. Technological growth of a nation leads to its social and economic development. In the world today, science and technology has become a dominant power development indicator. Science has become such an indispensable tool that no nation, developed or developing, wishing to progress in the socio-economic sphere will afford to relegate its learning in schools.

In practice, Science as a process involves an integration of knowledge, skills, and attitudes to develop scientific understanding. Practical work in Science can include experiencing phenomena, developing practical skills or techniques, and carrying out investigations. Investigations provide key opportunities for students to extend their understanding in Science. Thus it could be concluded that a positive attitude towards learning of Science would enhance the achievement in Science. Keeping in mind the importance of learning Science, it becomes very important for schools and families in particular and society at large to foster good attitude toward learning, intelligence, learning skills among students and provide good socio-economic conditions for their effective learning and performance in Science. The secondary students especially in rural schools well aware the use of ICT in various modes of science learning then only the achievement level in science enhanced.

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