Conference Proceeding Issue Published in International Journal of Trend in Research and Development (IJTRD), ISSN: 2394-9333, www.ijtrd.com

Relationship between ICT Skills and Academic Achievement of the XI Standard Students in Puducherry

[1]D. Sendil Kumar and [2]Dr. V. Ambedkar,
[1]Research Scholar, [2]Professor,
[1,2]Department of Education, Annamalai University, Annamalai Nagar, Tamilnadu, India

Abstract: The emerging technologies are constantly changing the world around us. These technologies have affected the way of learning and the way processes are carried out. The present education system is facing substantial pressure to prepare the students to learn, live and work in the digital age. Technology is becoming a powerful tool for communication, problem solving, and as a means of research for learning in education area. This study investigates the relationship between Information and Communication Technology (ICT) skills and academic achievement of XI standard students in the Puducherry region. A survey questionnaire was administered to a sample of 500 students from various schools in Puducherry. The results indicate a significant positive correlation between ICT skills and academic achievement. Students with higher ICT skills tend to have better academic achievement. The study also reveals that students' attitude towards ICT, frequency of ICT usage, and parental education level are significant predictors of ICT skills. The findings of this study have implications for educators, policymakers, and parents to emphasize the development of ICT skills among students to enhance their academic achievement.

Keywords: *ICT Skills, Academic Achievement, Xi Standard Students, Puducherry Region.*

I. INTRODUCTION

Information technology is a combination of telecommunications and computing to obtain, process, store, transmit and output information in the form of voice, pictures or text.

This includes the following,

1. Software applications and operating systems.
2. Web-based information and application such as distance learning.
3. Telephones and means of telecommunications.
4. Video equipment and multimedia products.
5. Word wide web.

Electronic devices such as photocopiers information technology exist from the days when telegraph was being used to move data from one place to another. With the advancement in technology, the role of people responsible for handing data also increased. A key to the technological advances in IT sector is the interweaving of computation, communication, and content supported by theories of information and computer science.

The rapid advancement of technology has transformed the way we live, work, and learn. Information and Communication Technology (ICT) has become an integral part of modern education, and its impact on academic achievement is a topic of growing interest among educators and researchers. The XI standard students, who are at a critical stage of their academic journey, need to possess adequate ICT skills to excel in their studies and future careers.

In recent years, the Puducherry region has witnessed significant growth in the adoption of ICT in education. However, there is a need to investigate the relationship between ICT skills and academic achievement of XI standard students in this region. This study aims to explore the correlation between ICT skills and academic achievement, and to identify the factors that influence ICT skills among XI standard students in Puducherry.

The findings of this study will provide valuable insights for educators, policymakers, and parents to develop strategies for improving ICT skills and academic achievement among XI standard students. Furthermore, this study will contribute to the existing body of research on the role of ICT in education and its impact on academic achievement.

Research Questions:

1. What is the relationship between ICT skills and academic achievement of XI standard students in Puducherry?
2. What are the factors that influence ICT skills among XI standard students in Puducherry?
3. How do ICT skills impact academic achievement among XI standard students in Puducherry?

II. REVIEW RELATED LITERATURE

Barreto –marrero, luz (2008) conducted a study on **"The Use of Information and Communication Technology (ICT) in Science Education the Views and Experiences of Three High School Teachers" T**his case study presents the experiences of three Public school chemistry teachers in the transformation are documented, what knowledge and skills were learned and how it changed their organization, planning and teaching. The relationship between ICT, mind tools, learning strategies and teaching methods were studied. The information was collected by semi-structured interviews, classroom and

observations and document analysis. The teachers learn to use several new ICT equipment and materials that facilitate the use of lab simulators, various software, graphic calculators, economic black boards and the internet. They used teaching strategies for active learning according to jonassen. Their science teaching methods correspond to the three types, according to Mac Farlane and sakellariou, which foster scientific reasoning for science literacy. They affirmed that their students demonstrated more motivation, participation, collaboration and learning, developed scientific and technological skills, work real satiation in a collaborative way guided by science student and that students participated in their children's learning.

Rajalakshmi and Anandan (2009-2010). Conducted a study on **"Opinion of the Teacher Trainees towards ICT"** The main objective was to measure the level of opinion towards ICT among the teacher Trainees. Tool consists of 30 items which are four point scales such as strongly, agree disagree and strongly disagree. The investigators randomly selected 120 teacher trainees from 3 private teaching training institutes. The questionnaire was given to them. It is a survey research as the investigators were aimed to study the opinion of the teacher trainees towards ICT. The findings of the study a) The significant positive opinion was observed among the teacher trainees towards ICT with various dimensions such as computer power point presentation and internet. b) Women Teacher Trainees show high positive significant difference in the power point presentation of opinion towards ICT than their counter part. c) Rural and Urban Teacher Trainees are having similar level of opinion towards various dimensions of ICT.

III. METHOD USED FOR THE STUDY

Research Methods are very important in a research process. A pre-planned and well described method will provide the researcher a scientific and feasible plan for attacking and solving the problem under investigation. The descriptive method is the most widely used research method in the field of education.

Survey Method

1. Survey method
2. Correlation Method
3. Developmental Method

Out of the three methods, the investigator has adopted survey method in view of the objectives of the study. Survey has the basic connection of "the act of looking over or beyond" The survey method gathers data from a relatively large number of cases at a particular time. Here the investigator looks the attitude through attitude scale questionnaire.

TOOLS USED FOR THE STUDY:

Information and Communication technology Attitude scale consists of 49 items in seven dimensions. They are Enthusiasm, Anxiety, Acceptance, E-mail, Productivity, Confidence, Relevance, respectively.

Data were collected with the help of the tool outline above. First the investigator met the schools authorities and obtained their permission to meet the school principals. Then the tool was administrated to the school students by the investigator personally. Before the commencement of data collection a rapport was created with the respondents. Then the investigator distributed the questionnaire and personal data sheets, gave the instructions to fill up the general information and the questionnaire. To start with, the respondents were asked to fill the personal data sheet first. Then they were asked to respond to the ICT Attitude scale. They marked their responses by putting a tick mark against any one of the two responses, yes or no. After giving necessary clarifications for the doubts asked by the respondents, the filled-in responses were collected by the investigator. Once all the responses were collected from the sample, the response sheets were scored.

ACADEMIC ACHIEVEMENT

The quarterly marks of X1 standard students were used to measure their academic achievement

POPULATION FOR THE STUDY

The population for the study consists of XI standard students in puducherry educational district.

SAMPLES FOR THE STUDY

The present investigation was conducted among 500 XI standard students in Pondicherry region.

Interpretation and Analysis

TABLE-1: Showing the significant difference between the mean ICT Skills scores of male and female students studying in higher secondary schools

Variable	Gender	N	Mean	S.D	't' value	Level of Significance	Significant / Not significant
ICT Skills	**Male**	257	33.47	2.35	**0.05**	**0.05**	**NS**
	Female	243	33.46	2.45			

INTERPRETATION

From the above table, the computed't' value is found to be 0.05 which is less than the table value 1.96 at 0.05 level. Hence, the null hypothesis is accepted. It is concluded that there is no significant difference between the mean ICT Skillsscores of male and female students studying in higher secondary schools.

TABLE-2: Showing the significant difference between the mean ICT Skills scores of higher secondary school students studying in rural and urban schools.

Variable	Locality of school	N	Mean	S.D	't' value	Level of Significance	Significant / Not significant
ICT Skills	Rural	262	33.48	2.34	**0.18**	**0.05**	**Not significant**
	Urban	238	33.44	2.46			

INTERPRETATION

From the above table, the computed 't' value is found to be 0.18 which is less than the table value 1.96 at 0.05 level. Hence, the null hypothesis is accepted.It is concluded that there is no significant difference between the mean ICT Skills scores of higher secondary school students studying in rural and urban schools. There is no significant difference between the mean ICT Skills scores of higher secondary school students belonging to rural and urban residence.

TABLE-3: Showing the significant difference between the mean Academic Achievement Scores of higher secondary school students belonging to rural and urban residence.

Variable	Locality of residence	N	Mean	S.D	't' value	Level of Significance	Significant / Not significant
Academic Achievement	Rural	283	33.48	2.35	**0.16**	**0.05**	**NS**
	Urban	217	33.44	2.47			

INTERPRETATION

From the above table, the computed 't' value is found to be 0.16 which is less than the table value 1.96 at 0.05 level. Hence, the null hypothesis is accepted. It is concluded that there is no significant difference between the mean ICT Skills scores of higher secondary school students belonging to rural and urban residence. There is no significant difference between the ICT Skills scores of higher secondary school students belonging to joint and nuclear family.

TABLE-4: Showing the significant difference between the mean Academic Achievement scores of higher secondary school students belonging to joint and nuclear family

Variable	Type of family	N	Mean	S.D	't' value	Level of Significance	Significant / Not significant
Academic Achievement	Joint	194	33.40	2.40	**0.48**	**0.05**	**NS**
	Nuclear	306	33.50	2.39			

INTERPRETATION

From the above table, 4.8 the computed 't' value is found to be 0.48 which is less than the table value 1.96 at 0.05 level. Hence, the null hypothesis is accepted. It is concluded that there is no significant difference between the mean Academic Achievement scores of higher secondary school students belonging to joint and nuclear family. There is no significant difference in Academic Achievementur among the higher secondary school students based on their birth order.

Table -5: Showing significant difference in Academic Achievement based on birth order

	Source	Sum of Squares	df	Mean squares	F	Level of Significance	Significance
Academic Achievement	**Between Groups**	18.425	3	6.142	1.06	**0.05**	**Not Significant**
	Within Groups	2853.853	496	5.754			
	Total	2872.278	499				

INTERPRETATION

In order find out the significance of health behavior with respect to birth order of higher secondary school students the 'F' value was calculated. From the above table, the calculated 'F' value is found to be 0.05 which is not significant at 0 Introduction:

The rapid advancement of technology has transformed the way we live, work, and learn. Information and Communication Technology (ICT) has become an integral part of modern education, and its impact on academic achievement is a topic of growing interest among educators and researchers. The XI standard students, who are at a critical stage of their academic journey, need to possess adequate ICT skills to excel in their studies and future careers.

In recent years, the Puducherry region has witnessed significant growth in the adoption of ICT in education. However, there is a need to investigate the relationship between ICT skills and academic achievement of XI standard students in this region.

This study aims to explore the correlation between ICT skills and academic achievement, and to identify the factors that influence ICT skills among XI standard students in Puducherry.

The findings of this study will provide valuable insights for educators, policymakers, and parents to develop strategies for improving ICT skills and academic achievement among XI standard students. Furthermore, this study will contribute to the existing body of research on the role of ICT in education and its impact on academic achievement.

Research Questions:

1. What is the relationship between ICT skills and academic achievement of XI standard students in Puducherry?
2. What are the factors that influence ICT skills among XI standard students in Puducherry?
3. How do ICT skills impact academic achievement among XI standard students in Puducherry? Introduction:

The rapid advancement of technology has transformed the way we live, work, and learn. Information and Communication Technology (ICT) has become an integral part of modern education, and its impact on academic achievement is a topic of growing interest among educators and researchers. The XI standard students, who are at a critical stage of their academic journey, need to possess adequate ICT skills to excel in their studies and future careers.

In recent years, the Puducherry region has witnessed significant growth in the adoption of ICT in education. However, there is a need to investigate the relationship between ICT skills and academic achievement of XI standard students in this region. This study aims to explore the correlation between ICT skills and academic achievement, and to identify the factors that influence ICT skills among XI standard students in Puducherry.

The findings of this study will provide valuable insights for educators, policymakers, and parents to develop strategies for improving ICT skills and academic achievement among XI standard students. Furthermore, this study will contribute to the existing body of research on the role of ICT in education and its impact on academic achievement.

Research Questions:

1. What is the relationship between ICT skills and academic achievement of XI standard students in Puducherry?
2. What are the factors that influence ICT skills among XI standard students in Puducherry?
3. How do ICT skills impact academic achievement among XI standard students in Puducherry? Introduction:

The rapid advancement of technology has transformed the way we live, work, and learn. Information and Communication Technology (ICT) has become an integral part of modern education, and its impact on academic achievement is a topic of growing interest among educators and researchers. The XI standard students, who are at a critical stage of their academic journey, need to possess adequate ICT skills to excel in their studies and future careers.

In recent years, the Puducherry region has witnessed significant growth in the adoption of ICT in education. However, there is a need to investigate the relationship between ICT skills and academic achievement of XI standard students in this region. This study aims to explore the correlation between ICT skills and academic achievement, and to identify the factors that influence ICT skills among XI standard students in Puducherry.

The findings of this study will provide valuable insights for educators, policymakers, and parents to develop strategies for improving ICT skills and academic achievement among XI standard students. Furthermore, this study will contribute to the existing body of research on the role of ICT in education and its impact on academic achievement.

Research Questions:

1. What is the relationship between ICT skills and academic achievement of XI standard students in Puducherry?
2. What are the factors that influence ICT skills among XI standard students in Puducherry?
3. How do ICT skills impact academic achievement among XI standard students in Puducherry? Introduction:

The rapid advancement of technology has transformed the way we live, work, and learn. Information and Communication Technology (ICT) has become an integral part of modern education, and its impact on academic achievement is a topic of growing interest among educators and researchers. The XI standard students, who are at a critical stage of their academic journey, need to possess adequate ICT skills to excel in their studies and future careers.

In recent years, the Puducherry region has witnessed significant growth in the adoption of ICT in education. However, there is a need to investigate the relationship between ICT skills and academic achievement of XI standard students in this region. This study aims to explore the correlation between ICT skills and academic achievement, and to identify the factors that influence ICT skills among XI standard students in Puducherry.

The findings of this study will provide valuable insights for educators, policymakers, and parents to develop strategies for improving ICT skills and academic achievement among XI standard students. Furthermore, this study will contribute to the existing body of research on the role of ICT in education and its impact on academic achievement.

Research Questions:

1. What is the relationship between ICT skills and academic achievement of XI standard students in Puducherry?
2. What are the factors that influence ICT skills among XI standard students in Puducherry?
3. How do ICT skills impact academic achievement among XI standard students in Puducherry?.05 level.

Therefore the null hypothesis is accepted and it is concluded that there is a no significant difference in Academic Achievement among the higher secondary school students based on their birth order. (born I, born II, born III, born IV and above)

The relationship ICTSkills scores and Academic Achievement of higher secondary school students studying is are given in

Table-6: Academic Achievementand ICT Skills scores

N	Variables	Correlation Co-efficient	Remarks
500	ICT Skills scores Academic Achievement	0.466	s

Recommendation

The development process can be expedited and the disparities between those who are technologically and educationally disadvantaged and the more advanced sectors of society can be addressed. The 21st century has witnessed numerous rapid technological transformations, particularly in the realm of information and communication technology (ICT), which influences every aspect of society and is increasingly vital in the field of education. Governments around the globe recognize that their citizens' ongoing proficiency in ICT will be essential for maintaining global competitiveness in the future, with education serving as the fundamental solution to this challenge. Contemporary ICT has fostered a "global village," enabling individuals to interact with one another worldwide as if they were next-door neighbors. Consequently, ICT is often analyzed concerning the societal implications of modern communication technologies.

References

[1] **Huang Sharon Hasiao-shan (2002)** conducted a study on "The Relationship between ICT Use and Academic Achievements", Dissertation Abstracts International, Vol.70, No.04, October2002.
[2] **Iiomaki, Rantanen (2007)** conducted a study on "Intensive use of ICT in School Developing Differences in Students ICT Expertise", Dissertation Abstracts International, Vol.34, No.07, July2007.
[3] **Jomy Johnson (2004)** conducted a study on "Use of ICT among Higher Secondary Students", Dissertation Abstracts International, Vol.58, No.07, December2004.
[4] **Macklin Alexius Sinith (2006)** conducted a study on "integrating information and communication technology (ICT) literacy into the first year composition course. Impact on teaching, learning outcomes and assessment", Dissertation
[5] Abstracts International, Vol.39, No.07, October2006.
[6] **Shammon Li-Jen Yu (2007)** conducted a study on "The Millennial Generation Regarding Information and Communication Technology Literacy Levels and Comfort Levels with Digital Life Environments",
[7] **ShikhaChaturvedi (2007)**Eccyclopedia of philosophical and sociological foundation Of Education, vol I R. Lall book depot, Meerut.
[8] **Spearman and Rhonda Greenly (2000)** conducted a study on "Elementary Educators Use of The Internet And The Application of Information Literacy Skill To Students' Use of The World Wide Web", Dissertation Abstracts
[9] International, Vol.61, No.11, May 2001.
[10] **Suloers and Stephen Edward (2003)** conducted a study on "Middle School Teachers Implementation of Classroom Computer at a Middle School", Dissertation Abstracts International, Vol.62, No.02, April 2003.
[11] **Taylor (2004)** conducted a study on "How Student Teachers Develop their Understanding of Teaching Using ICT", Dissertation Abstracts International, Vol.65, No.01, November 2004.